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ANALYSIS OF RESULTS OF BREAST RECONSTRUCTIONS AFTER MASTECTOMY IN LATVIAN ONCOLOGY CENTRE IN 2011 – 2020.

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Objectives

Breast cancer is the most common oncological disease, affecting more than 2 million people each year. It ranks 1st of oncology in women and 1st in mortality from oncology.

Every year in Latvia, more than 1,000 women are diagnosed with primary breast cancer and most of them will be treated operatively, including by performing a mastectomy.

Although breast-sparing surgeries are just as effective as mastectomy, mastectomy is still often chosen as the method of treatment.

Mastectomy is performed in more than 30% of cases where breast cancer is surgically treated and after mastectomy, some patients have the opportunity to perform breast reconstruction with various methods that improve a woman's quality of life and psychological condition after surgery.

Objective of this study was to analyze results of post-mastectomy breast reconstruction and evaluate patient's quality of life after performed surgery.

Materials and Methods

Data from 118 patients with breast cancer treated in Latvian Oncology centre from 2011 to 2020 who received mastectomy followed by various reconstruction surgeries were retrospectively analyzed. Patients filled anonymous questionnaire about their everyday activities and overall quality of life.

Patients were divided into groups: time of breast reconstruction (immediate or delayed after mastectomy) and type of breast reconstruction (implant-based or autologous tissue based).

Results

This is first available research about quality of life after mastectomy followed by breast reconstruction in Latvia.

Results of reconstructions are highly satisfactory with high quality of life after surgeries (data statistical analysis is under research).

Conclusions

Post-mastectomy breast reconstruction improves quality of life and provides with highly satisfactory results.

BREAST RECONSTRUCTION POSSIBILITIES WITH FREE FLAPS. CASE SERIES OVERVIEW.

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Breast reconstruction is one of the most discussed topics in professional field of plastic and reconstructive surgery professionals.

For women diagnosed with breast cancer mastectomy is physically and emotionally life changing event which can affect body esteem, cause depressive disorders, avoidance of social relationships, sexual problems, chronic back pain due to weight disbalance. Breast reconstruction can contribute to quality of life for such patients.

Main goal of breast reconstruction is to restore the shape of breast on affected side by recreating the preoperative dimensions of inframammary crease, breast size, position and contour thus achieving bilateral symmetry.

Although the first attempts of breast reconstruction dates back to 1895 the modern era breast reconstruction starts with breast implant introduction in 1963, rotated latissimus dorsi flap reconstruction was introduced in 1977. In 1979 Holmstrom introduced free TRAM flap. Since then, multiple different flaps for breast reconstruction have been described and are in regular rotation in experienced breast reconstruction teams all over the world.

Most often used method worldwide remains alloplastic material (implant or tissue expander followed and implant) based reconstruction surgery due to no donor site morbidity, relatively shorter surgery and recovery time, but there is limited spectrum of patients who are good candidate for this type of reconstruction. Mostly including those who have had skin sparing and or nipple sparing mastectomy with relatively small non ptotic breast.

For patients with lack of skin and tissue on chest wall on affected side due to surgery and radiation therapy and those patients who prefer not to have breast implant autologous tissue breast reconstruction remains the only viable option for breast reconstruction.

The disadvantages for free flap reconstruction include longer surgery time, longer recovery time, risk of partial or complete flap loss, need for skilled microsurgery capable team.

The benefits of free flap reconstruction versus pedicled flaps include wider choice of donor site location- the donor site can be distant from recipient site, lesser donor site morbidity -there’s no need for dissecting the rotation point for pedicle and better aesthetical outcomes – since many of free flap donor sites for breast reconstruction have been evolved from plastic surgery techniques addressing problem zones

The choice of type of free flap can be based on body type of patient and size and shape of reconstructable breast

We want to present the overview of our experience of breast reconstruction case series done by our team using microsurgical techniques of DIEP (deep inferior epigastric perforator) flap- 18 cases, SGAP superior gluteal artery perforator) flap- 2 cases . TUG (transverse upper

gracilis) flap – 2cases.

LATISSIMUS DORSI MYOCUTANEOUS FLAP FOR IMMEDIATE OR DELAYED BREAST RECONSTRUCTION: STILL RELEVANT?

Gundars Krauklis [1], **Kristaps Blums** [2], **Maris Krumins** [1], **Nonna Tomiseva** [1], **Marta Rudakovska** [1], **Ervins Lavrinovics** [1], **Janis Zarins** [3]

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Objectives

The advances in microsurgery and routine use of various free flaps has been reducing the utilization of pedicled flaps for breast reconstruction. However, pedicled flaps such as latissimus dorsi (LADO) myocutaneous flap has certain advantages over free flaps. Most importantly, lessening the surgery time with lowering anesthesia risk and microvascular complications. These considerations can make breast reconstruction more available for patients that are not eligible for free flap surgery or has increased perioperative risk. Authors present a study where LADO has been used for various breast reconstructions in patients after resection due to cancer.

Materials and Methods

During 2001 - 2020 surgeries were performed by one leading surgeon team in the Latvian Microsurgery centre. In overall 60 patients were included in the study. Two patients underwent reconstruction with exclusive LADO flap. Combined procedure with LADO and concomitant augmentation with implant were performed in 53 patients. Five patients received LADO and tissue expander implantation. In the study group delayed reconstruction was done in 52 patients and immediate reconstruction in eight. Patients were interviewed at earliest one year following the surgery.

Results

The results show the flap survival rate of 98.3% (n=59). Complication of donor site seroma occurred in 55% (n=33) of patients. All of them except one resolved with conservative therapy and did not require additional surgical treatment. One patient required excision of seroma. No infections or wound breakdown were encountered.

Patient satisfaction rate was high, achieving 93%. One patient was undecisive and one was dissatisfied with the result, that could be explained by the complication requiring intervention.

Conclusions

Latissimus dorsi myocutaneus flap has shown to be safe and effective approach/method for immediate or delayed breast reconstruction due to resection of cancer in woman. It can be used either exclusively or combined with implant or tissue expander. Overall patient satisfaction is high despite frequent donor site seroma

RESULTS OF BREAST CANCER TREATMENT AFTER NEOADJUVANT CHEMOTHERAPY IN LATVIAN ONCOLOGY CENTRE

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Objectives

Breast cancer is the most common cancer type and the most common cause of cancer related deaths worlwide, also in Latvia. Neoadjuvant chemotherapy (NCT) initially adopted to downgrade inoperable cancers into operable cancers, become a well accepted treatment opetion for breast cancer to minimaze tumor size to perform breast conserving surgery. It has been shown that NCT of breast cancer was equivalent to adjuvant therapy regarding survival and the overall disease progression, but it has been suggested that patients reaching pCR after neoadjuvant chemotherapy have favorable outcomes.

Materials and Methods

Data from 179 patients with breast cancer treated in Latvian Oncology centre from 2011 to 2020 who recieved surgery after neoadjuvant chemotherapy (NCT) were retrospectively analysed. The patients were classifield into Luminal A, Luminal B (HER2 positive and negative), HER2 overexpression and Triple negative breast cancers well as low ki67 (≤14%) and high ki67 (>14%). NCT outcome parametrs were patological complete response (pCR). Extent of surgery after NCT were analysed in breast and lymphnodes.

Results

Patients with Luminal A breast cancer patients were 3 with no pCR reached, Luminal B HER2 negative were 51 patients with pCR 3,9%, Luminal B HER2 positive were 25 patients with pCR 20%, HER2 overexpression were 25 patients with pCR 24% and Triple negative were 60 patients with pCR 28%. High pCR rates were correlated with high ki67 expression (statistical aylisis is under research). In 121 cases mastectomy is performed and in 58 cases breast conserving surgery is performed. Sentinel lymphnode biopsy (SLNB) is performed in only 33 cases.

Conclusions

Most often NCT in Latvian Oncology Centre is used in Triple negative breast cancer cases with the best results of pCR.

Colorectal surgery / proctology

A PATIENT WITH AN ANAL CANAL EXTRASKELETAL OSTEOSARCOMA.

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A 77-year-old patient underwent a fibrocolonoscopy as part of a screening program to detect a polypoid tumor 1.5 cm in diameter in the rectum. The biopsy material was diagnosed with possible melanoma. Subsequently, MRI was performed on the small pelvis, where the tumor was localized in the anal canal, inner sphincter, without distant metastases. The patient categorically refuses large-scale surgical intervention (rectal resection). Minimal amount of surgical therapy was performed - excision of transanal formation (3 x 3.5 cm) and morphologically verified solid tissues with spindle cells, sites of pseudotrabecula and chondroid. In immunohistochemistry, vimentin positive, S100, CD99 - focally positive, LCA, CK AE1 / AE3, CD56, CD31 - negative, Ki67 positive (30-65%). Pathohistology corresponds to a high-grade extraskeletal osteorsarcoma with pure resection lines. By decision of the oncological council, patient observation and repeated consultation with an oncologist after 3 months was recommended. After 1.5 years, a repeated MRI scan revealed a recurrence in the rectum with a specific left inguinal lymph node (3,29 cm) (see Figure 2) close to the main blood vessels. Repeated endoscopy was carried out, showing the tumor in the ampulla of the rectum (1.5 cm in diameter) on a wide base with an uneven surface (see Figure 1)The patient underwent excision of a transanal tumor (2 cm from the anal edge) and extirpation of the left inguinal lymph node under USG control. Conclusion of pathohistology in both preparations, similar to the one above - high-grade extraskeletal osteorsarcoma.

While in hospital, a headache was noted but not curable with the NSAIDs. CT scan performed on the head, neck and chest, no data on tumor spread was available.

After a multidisciplinary team consultation, it was recommended to continue under the supervision of an oncologist without initiating specific therapy.

After 3 months, re-examination by an oncologist. Skeletal scintigraphy was performed. MTS detected in the right intestinal bone, C2 vertebra. Due to severe pain syndrome of the head, neck area, episodes of hallucinations, MR on the head, neck was performed. Data obtained on C2 vertebral MTS with abnormal transverse fracture with spinal cord infiltration and dislocation.

During the course of the disease, the patient become cared for, ECOG IV, severe pain syndrome, consulted by an algologist, receiving palliative care.

Exitus letalis occurred 2.5 years after diagnosis.

A QUESTIONNAIRE SURVEY OF COLORECTAL SURGEONS ON RECTAL CANCER TREATMENT PREFERENCE

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Objectives

The purpose of this survey was to assess active surgeons' opinion on rectal cancer treatment if he was the patient.

Materials and Methods

A panel of International Society of University Colon & Rectal Surgeons selected 10 questions that were included into the questionnaire. The questionnaire was distributed electronically to ISUCRS fellows, other surgeons on our database and on social media. The questionnaire remained open from April 16-28, 2020.

Results

One hundred sixty-three specialists completed the survey. Most physicians chose the minimally invasive (laparoscopic) surgery for rectal cancer if they were the patients. In regards of low rectal cancer (T1, T2) treatment choice as a patient most of the respondents selected standart chemoradiation + local excision. In regards of locally advanced low rectal cancer top choice among responders was laparoscopic surgery. Similar results were seen when physicians were asked to pick top minimally invasive treatment technique. We found a statistically significant relationship between surgeons age and preference of minimally invasive techniques demonstrating senior surgeons inclination towards open approach.

Conclusions

Our survey showed that most of surgeons, especially younger opt for minimal invasive organ preserving techniques for rectal cancer treatment.

COMPARISON OF EARLY POSTOPERATIVE COMPLICATIONS IN PATIENTS WITH AND WITHOUT ANTIBIOTIC THERAPY AFTER COLORECTAL SURGERY

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Objectives

To evaluate the significance of postoperative antibiotics in prevalence of early postoperative complications after colorectal surgery.

Materials and Methods

This was a retrospective study. Data were collected from case histories of 376 consecutive patients, who have undergone colorectal surgery in Department of Surgery at Hospital of Lithuanian University of Health Sciences Kaunas Clinics between 2017 and 2018. There were two groups in this study – patients who received antibiotics after colorectal surgery and those who did not. Postoperative complications were rated with Clavien Dindo classification. Statistical analysis was processed using MS Excel 2010 and IBM SPSS 25.0. Data were considered statistically significant at $p < 0.05$.

Results

209 (55.6 %) males and 167 (44.4 %) females were enrolled in the study. There were 186 (49.5%) patients, who received antibiotics after surgery. Most of them -176 (46.81 %) – were given combination of cefuroxime and metronidazole. More often antibiotics after surgery were prescribed for patients elder than >70 years ($p=0.038$); which BMI greater than 25 kg/m2 ($p=0.009$); ASA III – IV class ($p = 0.003$). Mean duration of postoperative antibiotic therapy was 6.027 (SD 2.239) days. 303 patients had no postoperative complications . 39 (10.37%) patients receiving antibiotic therapy and respectively 34 (9.04%) without antibiotc therapy were diagnosed with early postoperative complications. The most common short - term postoperative complications were abdominal wall infection - 18 (4.79 %), peritoneal cavity abscess - 19 (5.05 %) and ileus -14 (3.72 %). Patients with postoperative complications were ranked by Clavien Dindo classification in these groups: I grade - 4 (1.06 %) patients; II grade -33 (8.8 %); III grade - 29 (7.7%); IV grade - 5 (1.3%); V grade - 2 (0.5%). However, there was no statistically significant difference between patients who received antibiotics after surgery and those who did not ($p > 0,05$).

Conclusions

Reasons of surgeon‘s choice to use antibiotics after surgery were determined by the patient-related risk factors for postoperative complications.

There were no statistically significant differences of the amount of postoperative complications after admitting or not admitting antibiotics after a colon surgery ($p>0,05$).

Therefore the administration of antibiotics after surgery for older patients, patients with higher than optimal BMI, higher ASA classification status, higher number of comorbidities, led to achieve the same amount of postoperative complications.

EFFICACY OF METRONIDAZOLE PRIOR AND AFTER SURGERY IN PAIN CONTROL AFTER HEMORRHOIDECTOMY

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Objectives

1. To evaluate the efficacy of metronidazole prior and after surgery in relieving the severity of postoperative pain following Milligan-Morgan hemorrhoidectomy. 2. To evaluate the amount of analgesics used for postoperative pain relief.

3. To evaluate inflammatory blood markers during the administration of metronidazole.

4. To evaluate the clinical signs of the wound during the administration of metronidazole.

5. To evaluate the duration of pain sensation before the resumption of normal physical activity after hemorrhoidectomy when using metronidazole.

Materials and Methods

A prospective matched pairs study was performed to compare the short-term treatment results between the study and the control groups. The study sample consisted of a total of 80 patients who underwent open hemorrhoidectomy for grade III or IV hemorrhoids at the Clinical Department of Surgery of the Hospital of the Lithuanian University of Health Sciences (LSMU) Kauno Klinikos during 2017-2019. Of these, 40 patients were administered metronidazole one day prior to and 7 days after the surgery (the study group), and 40 did not receive this drug (the control group).

Results

During the investigated period 80 patients with median age of 50,5 years received excisional hemorrhoidectomy. Patients were divided into two groups: 40 study group and 40 control group. There were 15 men and 25 female in each group. There was no difference in operation time, number of hemorrhoids and grade. Postoperative pain at rest in the study and control group at day 1 was (0,97±1,31 vs 2,95±2,38 VAS), day 2 (0,78±1,36 vs 2,72±2,60 VAS), day 7 (0,42±1,23 vs 3,22±3,09 VAS) and day 14 (0,07±0,34 vs 2,50±2,64 VAS), a significant difference was found between groups, ($p<0,05$). Pain intensity during the first 14 days of defecation was significantly lower in the study group, ($p<0,05$). The total amount of ibuprofen consumed in the study group was 8.27 ± 5.26 compared to 15.27 ± 5.75 in the control group, and the respective amounts of paracetamol consumed were, accordingly, 9.17 ± 5.11 and 16.19 ± 5.22 ($p<0.05$). The assessment of inflammatory blood markers revealed a statistically significant difference after the administration of metrondazole: in the study group, the CRP level was 3.88 ± 5.35 compared to 10.69 ± 15.25 in the control group, ($p<0.05$). In the control group, signs of wound inflammation and suppuration were significantly more common, ($p<0,05$). During the postoperative period, on days 1 and 2, 80% of the patients in the study group experienced no restrictions in daily self-care activities. On day 4, the

percentage of such patients was 85%, on day 7 – 97.5%, and on day 14 – 100%. In the control group, on days 1, 2, and 4 after the surgery, only 20% of the patients had no restrictions in daily activities. On day 7, this percentage increased to 35%, and on day 14 – to 55%. A statistically significant difference was found between the groups ($p<0.05$).

Conclusions

1. During the first 14 days, postoperative pain at rest and during defecation was significantly reduced with metronidazole.

2. Due to the inhibition of inflammation by metronidazole and less pain experienced, patients consumed significantly lower amounts of analgesics.

3. The majority of patients in the study group experienced no restriction in their daily self-care activities after the surgery.

EVALUATION OF HISTOPATHOLOGICAL SPECIMEN REPORTS AFTER LAPAROSCOPIC COLORECTAL CANCER SURGERY AT GAILEZERS RIGA EAST CLINICAL UNIVERSITY HOSPITAL, 2013-2020.

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Objectives

The aim of this study was to review reports of histopathological specimens after laparoscopic resections for CRC at Gailezers Riga East Clinical University Hospital, 2013-2020.

Materials and Methods

The retrospective study reviewed pathology reports from 211 CRC patients from January 2013 to December 2020 who underwent laparoscopic resections. The data was taken from the hospital information system, the quality of specimen and quantity of lymph nodes from pathology reports were analyzed.

Results

A total of 211 laparoscopic resections with histopathology reports were reviewed.

Cancer staging – in situ in 8 cases (3.8%), I in 51 (24.2%), II in 65 (30.8%), III in 66 (31.3%), IV in 19 (9.0%).

The tumor size was from 0.7 to 11 cm with mean size of 3.6cm (mean smallest size of 2.8 and largest of 4.2cm).

Tumor in situ was found in 8 cases, T1 in 11, T2 in 56, T3 in 116 and T4 in 19 (T4a-18 and T4b-1) cases.

Grade 1 tumors were found in 35 cases, grade 2 in 163, grade 3 in 4 cases, unknown in 1 case.

There were 16 ±7.8 lymph nodes from right hemicolectomy (HE) specimen, 12.1 ±13.4 in left HE and 12.0 ±8.0 in sigmoid/rectosigmoid/rectum, p=0.03 (right HE vs sigmoid/rectosigmoid/rectum).

A total of 234 metastatic lymph nodes were recorded along 73 l/n positive patients with mean number of 3.2 l/n per case and mean N ratio of 0.25.

Only 83 (39.3%) patients had 12 or more lymph nodes.

The number of cases in which 12 or more lymph nodes were retrieved by year:

2013 – 2/12 cases, 2014 – 5/20, 2015 – 6/28, 2016 – 10/30, 2017 – 11/33, 2018 – 5/18, 2019 – 17/26, 2020 – 27/44 cases.

Differences in the size of l/n by stage and patients with negative vs. positive l/n: the size of

the lymph nodes in patients with stage 0 was 0.2-1.2 cm, mean 0.56 cm; stage I 0.1-1.7 cm, mean 0.56 cm; stage II 0.1-1.4 cm, mean 0.66 cm; in patients with stage III, the lymph nodes are 0.3-2.5 cm in size, mean 0.83 cm; stage IV 0.5-2.5 cm, mean 0.99.

At stages 0, I and II - the mean size of lymph nodes was 0.61cm (SD ±0.31cm),

But at stages III and IV - the mean size of lymph nodes was 0.83cm (SD ±0.39cm), $p<0.001$.

Average specimen length was 22.3 centimeters (4 - 51cm), in total 47 meters of intestines were removed.

Conclusions

In recent years, the identification of the required 12 lymph nodes and, accordingly, the histopathological staging have been improved. The quality of the specimen and the amount of lymph nodes are overall satisfactory, although lack of positive resection margins raises questions in histopathological reports.

IS ANASTOMOTIC LEAK FOLLOWING RIGHT HEMICOLECTOMY WORSE PROGNOSTIC FACTOR – A CASE MATCHED ANALYSIS

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1. National Cancer Institute, **2.** -

Objectives

The purpose of this study was to assess anastomotic leak (AL) effect on on oncologic outcomes using case-matched analysis.

Materials and Methods

A retrospective analysis of patients treated at two major university hospitals was performed. 488 patients undergoing right hemicolectomy for cancer between 2014 and 2018 were included. Mean variables of the study were risk factors of anastomotic leak, overall survival and disease-free survival. Propensity score matching was performed by patient's age, comorbidities, pathological TNM and type of the procedure. Oncologic outcomes were analyzed before and after the matching.

Results

AL rate was 4.71%. Before case matching, mean overall survival (OS) in non-AL group was 60.7 (57.8-63.6 95% CI) months compared in AL group 30.4 (18.2-42.7 95% CI) months ($p<0.001$). Similar results were found assessing disease free survival (DFS): for non-AL group it was 58.7 (55.7-61.7 95% CI) months, for AL group – 29.6 (17.2-42.1 95% CI) months ($p<0.001$). After case matching, no statistically significant difference was found: mean OS in non-AL group was 48.4 (39-57.8) months compared to– 30.4 (18.2-42.7) months in AL group, $p=0.082$; DFS in non-AL group was 46.9 (37.6-56.4) months compared to 29.6 (17.2-42.1) months in AL group, $p=0.11$.

Conclusions

Based on our results, anastomotic leak was not a marker of worse oncological outcome in patients undergoing right hemicolectomy for cancer. . Still, further studies and randomized controlled trials should be performed on that topic to provide stronger evidence.

LAPAROSCOPIC COLORECTAL CANCER SURGERY AT RIGA EAST CLINICAL UNIVERSITY HOSPITAL GAILEZERS 2013 - 2020

Georgijs Kociasvili [1], **Vladislava Gavare** [2], **Dmitrijs Skicko** [3], **Kārlis Perlbahs** [4], **Ainars Boks** [5], **Darija Soldatenkova** [5], **Zurabs Kecbaja** [5], **Aleksejs Kaminskis** [6], **Harald Plaudis** [7], **Guntars Pupelis** [8]

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Objectives

The aim of this study was to analyse, evaluate and share our results of laparoscopic approach for Colorectal Cancer in Riga East Clinical University Hospital Gailezers, Coloproctology Unit.

Materials and Methods

This retrospective study enrolled 211 CRC patients from January 2013 to December 2020 who underwent laparoscopic surgery at RAKUS Gailezers Coloproctology Unit (194 elective and 17 urgent hospitalizations). The data was taken from the hospital information system: patient characteristics, surgical, perioperative data, including morbidity and mortality and the quality of samples from pathology reports were analysed.

Results

The laparoscopic technique was performed on 89 men and 122 women. The average age of patients was 66.1 years (min 31 - max 90), 65.5 years for men and 66.5 years for women. ASA class was available in 187 cases – II in 39 (18.5%), II in 104 (49.3%) and III in 44 (20.9%).

Cancer staging – in situ in 8 cases (3.8%), I in 51 (24.2%), II in 65 (30.8%), III in 66 (31.3%) and IV in 19 (9.0%).

Right hemicolectomy was performed in 36 cases (17.1%), segmental in 2 (0.9%, transverse and splenic flexure), left in 7 (3.3%) cases, high anterio resection in 32 (43.6%), low in 28 (13.3%), ultra low in 9 (4.3%). Hartmann's procedure was performed in 30 cases (14.2%). APE in 7 (3.3%).

Primary anastomosis was created in 174 cases (82.5%), with anastomotic leak rate in 2 cases (0.9%).

Preventive ileostomy was performed in 26 cases, 16 in low, 6 in ultra-low and 4 in high rectal resections.

Mean operation time was 189.6 minutes (min 85 – max 335).

There was no statistically significant difference in length of postoperative hospital stay between age groups, p=0.173, from 5 days ±2.8 in 30-39 y.o. to 9.1 day ±4.8 in 80-89 y.o.

Intra operative complications were in 41 case (19.4%): technical difficulties in 31 (14.7%), bleeding in 8, splenectomy in 1, intraoperative FCS in 1, arrhythmia in 1, 1 lesion of marginal artery which leaded to Hartmann procedure.

Hand assisted technique used in 12 cases (5.7%), in low rectum, splenic flexure mobilization).

Conversion rate to laparotomy in 13 cases (6.2%), miniLT in 13 (6.2%) and Pfannenstiel LT in in 10.

Relaparotomy was done in 5 cases, 2 due to anastomotic leak, 3 to ileus.

Early postoperative complications – total 36 (17.1%)

Late complications in 11 (5.2%) cases: parastomal hernia - 2, coprostasis - 1, incisional hernia - 3, colostomy related complication - 3, anastomotic stenosis - 1, adhesion ileus -1.

Histopathology: Total of 2617 lymph nodes retrieved, with mean number of 12.6 (min 0 – max 57).

Along 73 l/n positive patients, total of 234 metastatic lymph nodes reported, with mean number of 3.2 l/n per case and mean N ratio of 0.25 .

Conclusions

A sufficient amount of LS technique is used and employed in practice on a daily basis and in 2020 it has increased significantly.

We showed a low rate of anastomotic leakage and reduced necessity for ileostomy in our hands.

We found shorter hospital stays for young and middle-aged patients.

Postoperative complications significantly increased the hospital stay.

LOCAL EXCISION ± CHEMORADIOTHERAPY VS TOTAL MESORECTAL EXCISION FOR EARLY RECTAL CANCER: CASE MATCHED ANALYSIS OF LONG-TERM RESULTS

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Objectives

BACKGROUND: our aim was to compare the bowel function and oncologic outcomes following these two treatment modalities.

Materials and Methods

This was a single-center study with 67 patients included between 2009-2018. 32 patients underwent total mesorectal excision – TME group and 35 transanal local excision ± chemoradiation. We performed a case-matched analysis: we matched the patients by age, cancer stage, co-morbidities. Duration of operation, postoperative complications, length of hospital stay, long-term functional and oncologic outcomes were compared. We calculated oncologic outcomes using Kaplan-Meier Cox diagrams. In addition, we used low anterior resection syndrome (LARS) score for bowel function assessment.

Results

Mean operation time in LE group was 58.8±45min compared to TME group – 121.1±42min ($p<0.05$). Complications were seen in 5.7% in LE and in TME group – 15.62% ($p<0.05$). 85.2 % of patients had no LARS in LE group comparing to 54.5 % in TME group ($p=0.018$). Minor LARS 7.4% in LE group compared to 31.8 % in TME group ($p=0.018$); major LARS – 7.4 % and 13.7 % respectively (0.474). Hospital stay was 2.77 days in LE group compared to 9.21 in TME group ($p<0.05$). The overall survival was 68.78 months in LE group compared to 74.81 months in TME group ($p=0.964$).

Conclusions

Our results of a small sample size showed that local excision ± chemoradiation is rather safe method for early rectal cancer comparing with a gold standard treatment. In addition, better bowel function is preserved with less post-operative complications and shorter hospital stay.

LOW ANTERIOR RESECTION SYNDROME. WHAT HAVE WE LEARNED ASSESSING A LARGE "HEALTHY" POPULATION?

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Objectives

Purpose: Our goal was to assess the Low Anterior Resection Syndrome (LARS) score in healthy volunteers.

Materials and Methods

Methods: The total amount of people, who answered the questionnaire, was 8183. 142 (1.74%) were excluded due to a lack of information. A brief questionnaire including the LARS score and health-related items were distributed throughout Lithuania using community online platforms and general practitioners.

Results

6100 (75.9%) were females and 1941 (24.1%) males. After adjusting for gender and age, male patients had a significant average score of 18.4 (SD±10.35) and female 20.3 (SD±9.74) $p<0.000$. Minor LARS accounted for 36.4% and major LARS 14.2% of our study population. Overall, major LARS is associated with previous operations: 863 patients in the operated group (71.7%) and 340 patients (28.3 %) non-operated group ($P<0.000$). Major LARS was significantly more common in 51-75 years old patient group with 22.7% ($P<0.000$) increased with age and with a higher female predisposition to the age of 75. Multivariate logistic regression analysis showed that colorectal operations and the use of neurological drugs were independent risk factors for major LARS.

Conclusions

A LARS score of >30 (major LARS) is common in the general population at any age. It is affected by other surgeries, age, gender, comorbidities and drugs used. These factors should be considered when interpreting the LARS score following low anterior resection.

MANAGEMENT OF COMPLICATED DIVERTICULITIS OF THE COLON: SINGLE CENTRE EXPERIENCE.

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Objectives

The incidence of colon diverticulosis in younger patients has increased rapidly in recent years. This is associated with more accessible and targeted diagnostics, longer life expectancy, lifestyle and eating habits. Computer tomography imaging has become a primary diagnostic tool in the diagnosis and staging of the acute diverticulitis. Complicated diverticulitis (CD) with perforation and faecal peritonitis is associated with high morbidity and mortality rate.

Materials and Methods

This is a prospective study which was conducted in the Department of General and Emergency Surgery in Riga East Clinical University Hospital, data was collected from January 2017 to December 2019. Analysed data includes all patients admitted to the hospital diagnosed with diverticulitis. Each patient had a determined stage, according to the modified Hinchey Classification (2005 Kaiser et al.). Subsequently, patients with localised CD were divided into two groups based on the surgical approach. Open technique was applied to patients in the first group, while second group was managed with ultrasound guided drainage (percutaneous abscess drainage or minimally invasive approach). Additionally, type of intervention, mortality, complications (according to Clavien-Dindo Classification of surgical complications, grade III-IV) and main outcomes were analysed.

Results

Overall, during the period from January 2017 to December 2019, 637 patients were treated with colon diverticulitis. The mean age of analysed patient group was 65,22 ±14,7 years (min 26; max 97; mode 59), where females was a predominant gender (61%). The mean hospital stay was 12 ±10.7 days, mode 4, ICU stay 6 ±4,2, mode 2 days, mortality reached 4% (26 patients). Uncomplicated diverticulitis (Hinchey 0, 1a) was found in 324 (50,8%) patients and was managed conservatively. Diverticular hemorrhage occurred in 113 patients. 97 (85,8%) patients received conservative treatment. In 16 cases arterial embolization were performed.

Localised complicated diverticulitis (Hinchey 1b, 2) was found in 148 (23,2%) patients. 105 patients were managed conservatively, in 43 cases surgery was performed. Median hospital stay was shorter in minimally invasive approach group 8.9±2.5 vs. 11.3±9.9 ($p=0.065$). There were 52 patients with diffuse peritonitis (Hinchey 3, 4), in eight cases surgical intervention was not applied due to poor general condition of the patient; the remaining 44 patients underwent surgery.

Conclusions

The recommended surgical management technique for patients with localised CD is ultrasound guided drainage (percutaneous abscess drainage or minimally invasive approach) if it is technically possible. In diverticular bleeding high-dose therapeutic barium enema could be a good choice of treatment for critically ill patient with diverticular bleeding.

NATIONAL COLORECTAL CANCER SCREENING PROGRAM IN LITHUANIA: DESCRIPTION OF THE 5-YEAR PERFORMANCE ON POPULATION LEVEL

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Objectives

We aimed to report the results of the implementation of the National Colorectal Cancer (CRC) Screening Program covering all the country.

Materials and Methods

The National Health Insurance Fund (NHIF) reimburses the institutions for performing each service; each procedure within the Program has its own administrative code. Information about services provided within the program was retrieved from the database of NHIF starting from the 1st of January 2014 to the 31st of December 2018. Exact date and type of all provided services, test results, date and results of biopsy and histopathological examination were extracted together with the vital status at the end of follow-up, date of death and date of emigration when applicable for all men and women born between 1935 and 1968. Results were compared with the guidelines of the European Union for quality assurance in CRC screening and diagnosis.

Results

The screening uptake was 49.5% (754061 patients) during study period. Participation rate varied from 16.0 to 18.1% per year and was higher among women than among men. Proportion of test-positive and test-negative results was similar during all the study period – 8.7% and 91.3% annually. Between 9.2% and 13.5% of test-positive patients received a biopsy of which 52.3-61.8% were positive for colorectal adenoma and 4.6-7.3% for colorectal carcinoma. CRC detection rate among test-positive individuals varied between 0.93% and 1.28%.

Conclusions

Colorectal cancer screening program in Lithuania coverage must be improved. Screening database is needed to systematically evaluate the impact and performance of the national CRC screening program and quality assurance within the program.

OBSTRUCTIVE COLORECTAL CANCER: CLINICAL EXPERIENCE IN DAUGAVPILS REGIONAL HOSPITAL

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Objective: Emergencies in colorectal cancer are common and it is an actual problem in abdominal surgery. Currently globally there is no single point of view and tactical guidelines to treat these severely complicated patients. This results in high complication and morbidity rates.

Our aim was to analyze the immediate and distant results of emergently hospitalized and operated colorectal patients with bowel obstruction in our hospital.

We presume that it is reasonable to do one stage radical surgical treatment model in these patients regardless of their age, ASA physical status and severity of obturation.

Materials and methods: We have evaluated 717 patients from Daugavpils oncological center and Daugavpils Regional hospital who undergo treatment due to colorectal cancer. Out of which we selected 182 patients with cancer complicated by bowel obstruction. We evaluated if there is a correlation between post-operative complications and patient age, ASA physical status and severity of obturation.

Results: Average age of patients was 70.4 years. Mostly patients were staged IIIb, IIIc, and IV – 102 (56.0%). Prevailed patients with sub compensated severity of obturation – 91 (50.0%). Compensated course had 51 (28.0%), and decompensated process had 40 (22.0%) patients. ASA II was most common patient physical status. 27 (14.9%) of patients had positive effect of conservative therapy, temporary effect had 59 (32.4%) patients, and more than the half of patients had no effect 96 (52.7%). The tumor location was most commonly in the sigmoid colon. Patients had 147 (80.8%) surgeries with a primary anastomosis and 35 (19.2%) obstructive resections (Hartmann's procedure). Post-operative complications had 21 (11.5%) patients, 3 (1.6%) of them were lethal outcome. Anastomotic leak was in 5 (3.4%) cases, everyone survived in this group. Stage II cancer 2-year survival was 81.4% and 5-year survival was 61.4%. Stage III cancer 2-year survival was 72.1% and 5-year survival 39.0%

Conclusions: It might be reasonable to make one stage model radical surgery to patients with emergency cancer obstruction independently of the severity of obstruction if they are intensively treated before the surgery and operated by oncosurgical team. There is no statistically reliable correlation between post-operative complication rate and patient age and ASA physical status in our scientific work.

PERINEAL RECONSTRUCTIONS AFTER LOW RECTAL CANCER RESECTIONS

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Objectives

Abdominoperienal excision (APE) was a gold standard surgical procedure for low rectal cancer radical treatment. However, recent studies have shown high local recurrence rate. To improve oncological outcome extralevator abdominoperineal excision (ELAPE) is chosen more frequently as a definitive surgical technique. Therefore, bigger soft tissue defect of perineal area and genital area needs to be reconstructed to obtain proper wound closure. The aim of the study was to analyze surgical outcome and reconstructive methods after APE and ELAPE.

Materials and Methods

Time period from 2018 to 2021 was analyzes. The study group consisted of 19 patients who underwent perineal reconstruction after ELAPE. The median age was 55 years. Eleven were male and 9 were female. APE surgery was done in 10 cases, and 2 patients needed reconstruction due to the complications. The median age was 55 years. Five were male and 5 were female patients.

Results

All resection margins were negative after ELAPE surgery. Various reconstruction methods were used. Vertical rectus abdominis muscle or myocutaneus (VRAM) flap were used in 14 cases as only reconstructive method for perineal reconstruction. VRAM flap and gracilis muscle flap was used in 1 case, while VRAM flap, gracilis and omentum majus flap in 1 case for extensive perineal defects. Bilateral gracilis myocutaneus flaps were used in 2 cases for perineal and vaginal defect closure. Three female patients with perineal and huge vaginal soft tissue defects were treated using multi-flap closure (n=3; VRAM flap, profunda artery perforator flap, local flaps). Complications occurred in 6 patients (28%). Distal flap necrosis, surgical site infection, wound dehiscence were treated surgically using gracilis or superior gluteal artery perforator flaps.

Conclusions

Reconstruction method needs to be chosen individually due to the patient gender, defect localization, preoperative radiotherapy, BMI and need for adjuvant therapy. Female patients with vaginal defects require more complex reconstructions. Anatomical and functional reconstruction can be obtained using local and regional flaps after ELAPE surgery to improve better oncological disease control.

ROBOTIC COLORECTAL SURGERY USING SENHANCE ROBOTIC SYSTEM: SINGLE CENTRE EXPERIENCE

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Objectives

The aim of the study was to evaluate initial single robotic centre experience in Senhance robotic colorectal surgery.

Materials and Methods

Over the period of 27 months since the adoption of Senhance robotic surgery, November 2018 to March 2021, a total of 64 colorectal procedures were performed at the Klaipeda University Hospital in Klaipeda, Lithuania. 31 patients were female and 33 men, age range 23-84, on an average 61 year. 54 (84,3%) patients were operated for colorectal cancer (23 colon an 31 rectal), rest 10 (13,7%) for benign reasons. Operating time was on an average 3 hours and 14 minutes, range 1 hour and 30 minutes to 6 hours and 20 minutes. 29 (45,3%) operations were performed on the colon and 35 (54,7%) were different type of rectal surgeries. A 30-day complications were prospectively recorded using Clavien-Dindo classification.

Results

Postoperative in hospital stay was on an average 8 days, range 3 to 48 days. There were 3 (4,7%) conversions, 2 to open surgery and 1 to laparoscopic surgery. No intraoperative complications occurred. A total of 7 (10,9%) of postoperative complications were recorded, and in 3 (4,7%) of them intervention under general anesthesia was necessary. All patients recovered. No postoperative deaths occurred. In 48 patients operated for colorectal cancer average lymph-node harvest was 18, range 7 to 38 lymph nodes. In a rectal cancer group of 26 patients, distal resection margin was from 1 to 7 cm, on an average 3,3 cm. The closest distance from the tumor to the circumferential resection margin in this patient population was 0,3 cm.

Conclusions

In our experience, robotic surgery using Senhance robotic system was safe and feasible in surgery both on colon and rectum. In future, a randomized controlled trial comparing this type of colorectal surgery with laparoscopic and/or other type of robotic surgery is needed.

ROLE OF SURGERY IN ADULT WITH INTRACTABLE CONSTIPATION AND FAECAL IMPACTION

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In the general population of Europe the mean value of the reported constipation rates is 17,1 % and the median value 16.6%. Female gender, age and socioeconomic and educational class seem to have major effect on constipation prevalence. (Peppas et al. Epidemiology of constipation in Europe and Oceania: a systematic review).

Some patients will have severe intractable symptoms despite various treatment attempts with the increasing number of drugs. In these patients, surgery is contemplated as a solution.

Colectomy for constipation was first documented in 1908 by Sir Arbuthnot Lane.

Aim of this case report is to demonstrate a rare case of severe intractable chronic constipation and faecal impaction with 17 to 48 cm large coprolite, which was successfully resolved with surgical approach.

A 25 year old female presented to the emergency department (ED) with acute urinary retention and prolonged abdominal pain and distention. Patient is having chronic constipation since childhood, have not had stool for more than half a year and does not remember of ever having a normal stool.

Patient have frequently been hospitalised due to severe constipation. Only conservative treatment with laxatives and enemas have been applied so far.

Medical history of chronic hepatitis C since 2017, opioid addiction, intravenous drug abuse, depressive disorder.

Social anamnesis reveals that Patient have education of 9 grade elementary school, have never had a job.

For 6 years smoked ½ pack a day and anamnesis of intravenous drug abuse.

On ED admission patients was depressed and unwilling to speak.

The clinical examination revealed skin changes with papular rash on face and multiple scars on both forearms; Enlarged, asymmetric abdomen, dense and painless on palpation with palpable hard, well enclosed, mobile tumour mass. Body Mass Index 19,1.

Abdominal X-ray (Fig.1) and abdominal CT scan (Fig.2) with contrast revealed massive faecal impaction, distended colon with up to 17cm in diameter.

According to Colorectal Concilium, due to prolonged ineffective conservative treatment and complications, symptom progression and radiological findings, resection of affected colon is indicated.

Laparotomy, subtotal proctocolectomy and colostomy was performed. Intraoperative finding of enlarged, distended colon Fig.3 and operation material - resected colon Fig.4.

Uncomplicated early postoperative period, patient feeling satisfied and relieved after surgery. Having normal, formed, regular stool 1-2 times per day.

On morphological examination colon mucosa is focally desquamated, with occasional intraepithelial haemorrhage, hypertrophy and atrophy areas of the intestinal muscle, hypertrophy and atrophy areas of nerve fibers and partial agangliosis. According to International Classification of Diseases ICD10, pathologist proposed a diagnosis K63 - Other diseases of intestine.

Nine month after primary surgery, colostomy closure with ascendo-rectal anastomosis was performed. On follow up visit after 1 month patient is in good overall health condition, having normal, regular and formed defecation once daily.

Constipation is a benign condition that may have a significant impact on quality of life.

Chronic constipation may cause an accumulation of hardened stool leading to faecal impaction. Surgical treatment for large faecal impaction can be effective and in severe cases can be the only treatment option.

“TO BE OR NOT TO BE” THE FATE OF RECTAL WALL DEFECT SUTURE AFTER TEM – A PROSPECTIVE COHORT STUDY

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Objectives

the goal was to evaluate the fate of rectal wall suture during the early and late period after transanal endoscopic microsurgery (TEM).

Materials and Methods

patients undergoing TEM for rectal neoplasms from May, 2017 to May, 2019 were prospectively included. A total of 50 patients were enrolled. All were checked at outpatient clinic 7 to 10 days after TEM, clinical data were recorded and digital rectal examination was performed. Six months after the procedure bowel function was assessed using Wexner score and Low anterior resection syndrome score.

Results

7 to 10 days after TEM sutures were intact in 33 (66%) out of 50 patients, but in the rest 17 (34%) with recorded suture dehiscence, it did not have any clinical manifestation. Four of 17 (23.5%) patients with suture dehiscence had per-rectal bleeding or febrile temperature without any need for intervention or treatment. We could not find any significant risk factors for wound dehiscence. There was no significant difference in bowel function between the two groups.

Conclusions

Our study suggests that in more than 1/3 of the patients’ rectal wall defect after TEM will undergo asymptomatic dehiscence in early postoperative period, and will not transfer to early or late clinically significant manifestation.

COVID-19 and surgery

COVID-19 PANDEMIC INFLUENCE ON THE MANAGEMENT AND OUTCOMES IN PATIENTS WITH ACUTE APPENDICITIS

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Objectives

Acute appendicitis is the most common abdominal emergency requiring surgery and has an estimated lifetime risk of 6.7 to 8.6%. Perforated appendicitis has a mortality rate of up to 5%. The COVID-19 pandemic has transformed medical care worldwide, thus influencing diagnostic tactics, treatment modalities and outcomes. The aim of this was to compare and analyse management of acute appendicitis before and during the pandemic.

Materials and Methods

Patients suffering acute appendicitis were enrolled retrospectively in a single-center study before (Period1) and during the pandemic (Period2) in a 10-month period of time from March 1 to December 31 in 2019 and 2020. Total number of the patients, disease severity, diagnostic methods, complications, length of hospitalisation and outcomes were analysed.

Results

A total number of 872 patients with acute appendicitis were included, Period1 463 vs. Period2 409 patients. The number of performed CT-scan imaging for the diagnosis in Period2 increased by 2.89% (242 vs. 249), $p<0.01$. The average length of time in hours until surgery did not increase comparing both periods (11.75 vs. 12.08 hours), respectively. The overall number of appendectomies comparing both periods decreased by 20.9% in Period2 (n=453 to n=358). In Period1 93% (n=434) of all patients, had an appendectomy, however in Period2 the appendectomy rate increased to 97% (n=397), p=0.02. In Period1 74.9% (n=347) of all operations were laparoscopic appendectomies, but in Period2 the number of laparoscopic operations increased to 80.9% (n=331), p=0.034. From all patients in Period1 24.4% (n=113) had complicated appendicitis, comparing to Period2 37.2% (n=152), p=0.001. From all the patients in Period1 local peritonitis was present in 3.7% (n=17), and it increased to 5.9% (n=24) in Period2. The mean hospital stay for acute complicated appendicitis decreased from 5.5 days in Period1 (range 1-27) to 5.1 days in Period2 (range 1-26). The mean hospital stay for acute uncomplicated appendicitis decreased from 3.8 days in Period1 (range 1-29) to 3.5 days in Period2 (range 1-12). The number of patients admitted to ICU and length of ICU treatment period during Period1 and Period2 did not differ statistically 2.37% and 3.55 days vs. 2.93% and 3.35 days respectively. Incidence of septic complications increased in Period2 – 0.97% comparing to 0.64% in Period1. Overall postoperative morbidity and mortality, however, did not change.

Conclusions

Covid-19 pandemics has led to significant increase of complicated forms of acute appendicitis and need for more advanced diagnostic tools. Need for rational utilisation of hospital bed resources favoured surgical treatment over conservative approach thus not influencing overall outcomes.

FREE MICROVASCULAR FLAP FAILURE IN COVID-19 PATIENTS

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Introduction: The novel coronavirus disease 2019 (COVID-19) presents with a large variety of clinical forms ranging from asymptomatic carrier state to multiple organ dysfunction and death. As the incidence of COVID-19 patients remains high worldwide, many unique pathologies are described. Coagulopathy has been established as one of the contributing factors to a disease's severe manifestation and high death rate. So far, no literature has described COVID-19 related coagulopathy's effects on free microvascular tissue transfer. As free flap transfer surgeries are widely used in patients with advanced tumours and severe injuries, even during the pandemic these surgeries are performed as frequently as usually – about 60 free flap transfers annually. While normally flap transfer success rate in our institution is high, around 94%, COVID-19 has set new challenges. We present our initial experience with unusual flap failure in COVID-19 patients.

Case reports: Patient No 1 is a 51-year-old male who was hospitalized due to cranioplasty implant infection, which was carried out 32 years ago due to a gunshot injury. Initially, debridement and implant evacuation was performed, following by defect reconstruction with myocutaneous latissimus dorsi flap. Two weeks postoperatively patient experienced febrile temperature, cough and lack of breath, was tested positive Sars-CoV-2 antigen. Flap necrosis occurred 4 weeks postoperatively, the flap was evacuated. Intraoperatively intact blood flow in the main blood vessels was documented. Pathohistological examination revealed aseptic necrosis of the flap, no signs of vasculitis or thrombi were found. Patient No 2 is a 67 years old male who was hospitalized due to an oral cavity tumour. The tumour and neck lymph nodes were resected, defect reconstructed with fibula osteocutaneous flap. On the 9th postoperative day the patient developed a febrile temperature and low oxygen saturation. The patient was transferred to the intensive care unit. Flap necrosis was detected on the 12th day post reconstruction, it was resected, and the defect was reconstructed with anterolateral thigh and latissimus dorsi flaps. The patient's overall status did not improve, and the patient died 34 days after hospitalization. Pathohistological examination of necrotic flap revealed oedema, capillary thrombosis and inflammation.

Conclusions: Unusual clinical and pathohistological findings suggest that COVID-19 related coagulopathy might contribute to free microvascular flap necrosis. Thus high-risk patients should be monitored even more precisely than before the pandemic.

WORK ORGANIZATION IN PRIVATE INTERNATIONAL SURGICAL CLINIC DURING COV 19 PANDEMIC. (AIWA CLINIC)

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Objectives

Experience during 2020 showed that organization of work in surgical clinics, during CoV 19 pandemic, has its own difficulties and specifics. It's because of the unpredictable possibility of mass infection of medical personnel and patients, which leads to complete or partial ceasing of surgical help in the establishment. The answer to this task mostly lays in fast and correct placement of organizational choices and anti-epidemiological measures.

Materials and Methods

The anti-epidemiological measures depend on the specifics of providing medical help in the establishment. The activity of our Aiwa Clinic is characterised by following factors- Multi-profile private surgical clinic, approximately 4000 operations are performed yearly, 136 medical personnel.

Risk areas- definitive part of the staff- specialists working in other establishments (60). Very small number of administrative staff (7). Medical tourism (about 400 patients every year). There is no head epidemiologist present. Heightened demands from the patients, small reception area.

We have introduced three lines of protection:

1. Prevent admission of a positive CoV 19 patient into the clinic.

2. Warning about spread of infection from a positive CoV 19 patient inside the clinic.

3. Eliminate the threat of infection from the staff.

With the beginning of CoV 19 pandemic base anti-epidemiological measures were introduced which were recommended by the ministry of healthcare of Latvia. However, because of quickly deteriorating epidemic situation in Latvia, the clinic introduced additional measures and proactive tactics were applied to take the situation under control:

• Adopt an order throughout the clinic prior to the official decree to allow endoscopy and intravitreal injections to patients only if they have tested negative to C19 48 hours before the procedure.

• "Trial by fire"- to make sure the clinic is prepared to provide help to C19 positive patients in real conditions.

Results

Doing C19 test for the entire staff of clinic two times a week or 48 hours before work, which allowed to:

• Prevent seven C19 positive staff members coming to work.

• Support working attitude and confidence of the staff and management in control of the situation.

• Stimulate compliance with implemented measures inside the clinic and outside of work.

• Heighten confidence of the patients to the clinic.

Testing the readiness of the staff to provide help to C19 positive patients showed that:

• Necessity of a well-defined plan of action.

• Important to teach staff members the use of individual protection equipment.

• It is vital to additionally control actions of the patients.

Benefits of a private healthcare institution if anti-epidemiological measures are implemented:

• Possibility for immediate reaction to changes in situation.

• Large wards and rooms (10-20 m2 for each patient) with all the conveniences, extensive procedure rooms and surgical theatres (18-37 m2), wide corridors and staircases, high ceilings.

• In this regard, when the workload of the clinic is at its maximum with patients and staff according to a specially organised work timetable, the presence of maximum allowed number of people inside the premises will not exceed 50%.

Results of introducing anti-epidemiological measures:

• No confirmed cases of infection in Aiwa Clinic among locals and foreign patients, as well as among staff of the clinic.

• Increase in the number of surgical operations and consulting of patients.

• Clinic continues working in a regular working regime.

Conclusions

• Teamwork is necessary for the realization of complex anti-epidemiological measures.

• Proactive policy- guarantees the effectiveness of anti-epidemiological measures

• Timely exchange of operational information is extremely important for enacting strategic and operational measures.

Emergency / Trauma surgery

A REVIEW OF THE QUALITY OF CARE PROVIDED TO PATIENTS WITH ACUTE ADHESIONAL SMALL BOWEL OBSTRUCTION IN SURGICAL EMERGENCY UNIT (SEU)

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Objectives

A recent national report carried out in the United Kingdom (NCEPOD. Delay in Transit. 2020. London) was aimed at highlighting areas for improvement in the care of patients with acute bowel obstruction. The main objective of this study was to assess the management of patients with acute bowel obstruction in our SEU (Oxford University Hospitals NHS Foundation Trust) against the key elements and recommendations of the NCEPOD report and then improve our management pathway of such patients.

Materials and Methods

The study involved a retrospective case note gap analysis of 95 patients discharged from our SEU with a clinical diagnosis of adhesional small bowel obstruction (ASBO) in 2019. Initially randomly selected patients with unspecified intestinal obstruction were selected for inclusion in the study. We then focused directly on those with ASBO as a starting point for developing and introducing a new evidence based clinical pathway for our patients with this subcategory of acute bowel obstruction.

Results

87.4% of patients underwent CT scan with a median waiting time of 6 hours (SD=19.2h) post admission, compared to national performance of 72.9%. The mean time to diagnosis in patients who had an abdominal X-ray prior to CT (9.2±6.2 hours) was delayed in comparison to CT alone (7.3±6.1 hours), although due to small patient numbers we have not been able to demonstrate statistical significance (p=0.15). Consultant assessment of ASBO patients within 14 hours of admission, as recommended by national guidance, was undertaken in 31.6% of cases, as opposed to 84.1% in the NCEPOD report. We believe this reflects a failure to consistently record the first consultant review. Nevertheless, this was not associated with significant delay in diagnosis (mean time to diagnosis with consultant review within 14 hours: 6.9±5.7h; mean time to diagnosis with consuntant review beyond 14 hours: 8.8±6.9h; p=0.20). During inpatient stay, 91.6% of patients had pain assessment and 50.5% underwent nutritional screening. Fifty patients required surgical management; 24.0% of theatre cases were considered delayed, as opposed to 53.3% in the NCEPOD report. The mortality/morbidity risk was assessed in only 18.4% of patients undergoing surgical intervention.

Conclusions

Getting an AXR seems to cause unnecessary delay, patients should go straight to CT. Slow consultant review times may reflect failure to capture on electronic patient record as this was not associated with a delay to diagnosis. Delays getting to emergency theatre are mostly due to a well recognised capacity issue. Other performance such as access to CT, nutritional and pain assessment are praiseworthy. An enhanced management pathway for patients with acute bowel obstruction is being introduced.

ENDOVASCULAR BALLOON OCCLUSION OF THE AORTA FOR A SEVERE TRAUMA PATIENT – FIRST EXPERIENCE IN LATVIA

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1. Riga East University Hospital

Introduction. Polytrauma presents distinct challenges in diagnosis and management, requiring a well-organized multidisciplinary team approach in which injuries are identified and treated in order of priority. Resuscitative endovascular balloon occlusion of the aorta was developed to address the challenge of managing non-compressible torso hemorrhage, a major cause of potentially preventable death after traumatic injury.

Case report. A 52-year-old male was admitted to the emergency department with polytrauma in a severe general condition, deep hemorrhagic shock, tachycardia 115x`. BP 42/23 mmHg ? 35/26 mmHg. Objectively pale, sweaty, with visible injuries in the pelvis, without sensation in the lower extremities. TASH scale – 19 points. Massive infusion and anti-shock therapy was started. The time from the accident to the moment the patient was admitted to the hospital is approximately 1 hour. FAST exam showed large hematoma in the lesser pelvis. Despite the therapy used, stabilization of the patient was not possible. The patient was intubated. A decision to perform the lesser pelvis tamponade on site in the Resuscitation Hall was made. Tamponade was performed 20min after admission with subsequent application of the C-clamp for pelvis stabilisation and to stop any bleeding in the abdomen and pelvis. At the same time the patient had an resuscitative endovascular balloon catheter – aortic occlusion baloon (Coda, COOK Medical), inserted at umbilical level. After the maneuver, the patient's condition slightly stabilized. The patient develops a peripheral pulse in the upper body, systolic BP of 90mmHg with the support of vasopressors, which allows the patient to be transferred to the operating room for the revision of abdominal cavity. Intraoperative finding – extensive lesion of the anterior abdominal wall. There are multiple mesentery root ruptures with devascularization and deserosations of small intestine. Considering the exposure - one hour, the endovascular balloon catheter was deflated and removed, which was performed during a relatively massive diffuse bleeding from the damaged muscles and soft tissues. It should be noted that despite tissue tamponation, the patient had a repeated picture of hemorrhagic shock, which could not be stabilized even by mechanical pressure of the aorta. Due to the patient's extremely severe condition, a total tamponade of the abdominal cavity was performed. Defect of the left femoral artery was sutured. The abdomen was closed with a continuous suture. The patient was transferred to Intensive Care Clinic for further stabilization. The general condition of the patient in the ICC remains severe. Patient recieved 7 900ml fluid in total during the time of hospitalization. Exitus letalis 14 hours after the admission. The patient was referred to forensic examination which showed large

retroperitoneal space hematoma, extensive anterior abdominal wall muscles' rupture, 11th and 12th rib fractures, multiple lumbar vertbrae processus transversus fractures, multiple mesentery root ruptures and rupture of the spleen and left kidney's capsules.

Discussion. Aortic balloon occlusion has been shown to be effective as a troubleshooting response to hemorrhage and a temporary method for promoting hemodynamic stability in severe trauma patients. It may be used to stop bleeding, maintain cerebral perfusion and stabilise the patient until definitive hemostasis in the operating room.

IMMEDIATE ONE-STAGE ORTHOPLASTIC SURGERY OF THE MANGLED HAND

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1. The Latvian Microsurgery Centre

Introduction. Mangled hand injuries are defind as those with significant damage to multiple structures, which threatens the functions and/or viability of the hand. Complex hand injuries should be treated with early orthoplastic approach. Using a orthoplastic approach can help avoid unnecessary amputations. If any effort is to be made in favor of hand salvage, the end result of reconstruction should be a hand that functions as well if no better than a prosthesis. Mangling hand injuries are common clinical situations to treating surgeons in The Latvian Microsurgery Centre.

This article discusses perioperative management strategies, and outcomes.

Operative management. Operative intervention proceed immediately for the threatened hand. Each case is different and should be considered individually.

Sufficient debridement of devitalized tissues is essential in the managment of the mangled hand. After debridement, the surgeon should systematically identify all damaged structures and decide whether or not hand salvage will result in a functional and sensate hand. A perfused hand or digit without sensation is not functional. With debridement, skeletal fixation, microsurgery, and soft tissue coverage, successful and functional reconstruction of a severely damage hand is possible.

Surgeons apply a variety of concepts to create the best hand possible:

• replantation;

• in a reconstruction, using the parts of a nonreplantable structure;

• vascularized tissue transport or free vascularized tissue flaps.

Hand aesthetic considerations should not be of a secondary concern, but should be part of the ultimate reconstructive algorithm for hand salvage.

Outcomes. Outcomes are difficult to assess due to the vast heterogeneity of injuries. Early soft tissue coverage for mutilating injuries has been shown in studies to decrease late infection. Early tissue reconstruction for mutilating injuries has been shown in studies to increase functional outcome. Orthoplastic hand salvage is recognized and perform routinely in patients with mutilating hand injuries. There may be improved functional outcomes when implementing a orthoplastic approach. This leads to improved patient outcomes, optimized conditions for bone healing, expediting soft tissue coverage, decreasing length of hospital stay, and avoidance of complications and revision surgeries. In patients with mangled hand injuries, secondary procedures are often necessary.

Rehabilitation is begun as soon as possible, and is continued after the patient leaves hospital.

MAGNETIC RESONANCE IMAGING REDUCES THE RATE OF UNNECESSARY OPERATIONS IN PREGNANT PATIENTS WITH SUSPECTED ACUTE APPENDICITIS: A RETROSPECTIVE STUDY

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Objectives

This is a retrospective single-institution study performed to compare the rate of unnecessary operations in pregnant women with suspected acute appendicitis with and without the use of MRI.

Materials and Methods

The study subjects were all pregnant women with suspected acute appendicitis admitted to a tertiary institution from January 2012 to December 2019. If acute appendicitis was not excluded clinically and by ultrasound (US), laparoscopies were performed until May 2017 (US-only group). MRI was added as a diagnostic tool when US was inconclusive from May 2017 (US + MRI group). Surgery was considered unnecessary when no inflamed appendix was found. The rate of unnecessary surgery, postoperative complications, length of stay were analyzed.

Results

Seventy-six women were included in the study; 38 women in the US-only group and 38 women in the US + MRI group. There were no differences in admission characteristics between the groups. One of 38 women (2.6%) underwent unnecessary surgery in the US + MRI group vs. 10 of 38 (26.3%) in the US-only group ($P = 0.007$). The patients in the US + MRI group were significantly less likely to undergo a diagnostic operation than in the US-only group (5.26% vs. 55.3%, respectively; $P < 0.001$) and their hospital stay was significantly shorter (0.74 ± 1.64 days vs. 3.7 ± 3.0 days, respectively; $P < 0.001$). The obstetric outcomes were not different between the groups. MRI had a sensitivity of 83.3% and specificity of 100% in the series.

Conclusions

The rate of unnecessary surgery was significantly reduced in pregnant women, who underwent MRI after inconclusive transabdominal US.

MESENTERIC ISCHEMIA RISK FACTORS AFTER ABDOMINAL AORTIC ANEURYSM REPAIR

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Objectives

The aim of this retrospective study was to identify the independent risk factors predicting mesenteric ischemia after abdominal aortic aneurysm repair.

Materials and Methods

A retrospective study analysed 340 patients undergoing abdominal aorta aneurysm (AAA) repair at the Vascular surgery and Surgery Clinics of Lithuanian University of Health Sciences hospital between 2009 and 2019. All the patients were divided into two groups: patients with and without postoperative mesenteric ischemia. The patient – operation related factors included age, gender, the American Society of Anesthesiologists (ASA) functional class, body mass index (BMI), the urgency of operation, intact or ruptured AAA, shock before the operation (AKS systolic<90mmHg), blood loss, aorta clamping time, duration of the operation and operation technique. Chi square test was used for categorical data and Mann Whitney test - to compare nonparametric values. Roc curve and multivariable logistic regression analysis was used to identify the independent predictors for postoperative mesenteric ischemia. Significance was set at the $p<0.05$.

Results

340 patients case histories were analyzed. The average age was 71.8 ± 8.8, most patients were males (86.2 %). All patients underwent invasive treatment for AAA (open 71.2%; endoscopic (EVAR) 28.8%), of which 86 (25.3%) were diagnosed with ruptured AAA. Mesenteric ishemia ocurred in 22 (6.5%) patients, of which 18 (81.8%) died. Mortality rate was 5.3%. The first group with mesenteric ischemia - 22 (6.5%) patients and the second group – without mesenteric ischemia - 318 (93.5%) patients. There was significant difference between I and II patient groups in age: (78±7.3 vs 71.4±8.7, p=0.001); ASA class groups: ASA (2-3 group) - 3 (13.6%) vs 205 (65.3%), p=0.001; ASA (4-5 group): 19 (8.6%) vs 109 (34.7%), p=0.001; type of operation: emergency: 15 (68.2%) vs 83 (26.1%), p=0.002; elective surgery: 7 (31.8%) vs 235 (73.9%), p=0.001; intact or ruptured AAA: intact - 7 (31.8%) vs 247 (77.7%), p=0.001); ruptured - 15 (68.2%) vs 71 (22.3%), p=0.001; shock before oparation: 12 (54.5%) vs 49 (15.4%), p=0.001; intraoperative blood loss: 1547.5±1007.3 vs 1049.9±742.4, p=0.018; duration of operation: 201.7±60.4 vs 185.9±143.1, p=0.012; and operation technique: EVAR - 2 (9.1%) vs 96 (30.2%), p=0.035; open operation - 20 (90.9%) vs 222 (69.8%), p=0.035. The roc curve and multivariable logistic regression analysis pointed out that age >75 years (OR 4.7; p=0.014) and operation time >182.5 min. (OR 1.3; p=0.036) are independent risk factors predicting bowel ischemia after abdominal aortic aneurysm repair.

Conclusions

Patients older than 75 years have 4.7 times higher risk and opertion time longer than 182.5 min. has 1.3 higher risk of postoperative bowel ischemia after AAA operation.

PREDICTIVE FACTORS TO DISTINGUISH SUSPECTED AND ACUTE APPENDICITIS – SINGLE CENTER EXPERIENCE

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1. Vilnius University Hospital Santaros Clinics

Objectives

The goal of our study is to analyze the cohort of patients suspected of acute appendicitis (AA) and to evaluate the significance of changes in laboratory markers at the different duration of the disease periods and compare results between the patients with finally proven and excluded acute appendicitis by performed computed tomography (CT).

Materials and Methods

It is a retrospective single-center cohort study that included adult patients with suspected AA admitted to Vilnius University hospital Santara Clinics Emergency department. A total of 455 patients who were suspected of AA between January 2017 and December 2018 and undergone CT scans were included. Patients were classified into two groups: group nAA (n=287) - patients suspected of having AA but not confirmed by CT and group pAA (n=166) – patients having confirmed AA by CT. Group pAA was further divided into two subgroups: pAA1 simple and pAA2 - complicated AA.

Basic demographic data and preoperative laboratory findings, CT imaging, and histological results were compared between the groups according to a different time of disease intervals.

Results

A total of 453 patients who were suspected of AA and undergone CT scans were included. The average age was 39 y. (range: 18-91 y.) and the majority of patients were female (64% vs 36%). Finally, 156 patients had appendectomy: 99 (63.5%) were histologically diagnosed with uncomplicated appendicitis, 57 (36.5%) were complicated AA, no negative appendectomy was performed. The rest of pAA group patients were treated conservatively (n=10, 6%).

The highest prevalence of AA was in patient group with the start of the symptoms in < 72 hours 88.6% (n=132), on the contrary, the highest rate of denied AA cases (57,5%, n=176).was found in patients complaining about symptoms for >72 h (p=0.001). The rate of histologically proven perforated appendicitis was higher in the first 24 h group (3.4% n=11) than in >72 h group (1.6%, n=7) (p=0.001), although the rate of simple appendicitis was significantly lower in the >72 h group. Comparing the dynamics of laboratory results between nAA and pAA groups the tendency of a progressive decrease in WBC count, and elevation of CRP values was noted in both groups over time, although the higher values were seen in aAA group in both cases (p<001). NLR values were higher in pAA group, but also during the time period, a gradual decrease of NLR was observed (p=0.118, p=0,032).

Conclusions

Our study showed that laboratory tests are unable to reliably differentiate between nAA and pAA groups, but show the tendency of having higher CRP, WBC, NLR values at the first 72 h of the disease. The time duration of AA does not predict perforated appendicitis. The majority of acute appendicitis occurs at first 72h from the beginning of symptoms, and prolonged symptoms are mostly related to an alternative diagnosis.

RECONSTRUCTION OF EXTENSIVE HEAD AND NECK THIRD DEGREE BURN DEFECTS WITH TISUE FLAPS

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Objectives

Third degree burn reconstruction in head and neck region is challenging for burn specialist and reconstructive surgeon due to limited amount of tissue for coverage and different types of tissue needed. Skin grafts often are insufficient due to severe contracture and poor quality of scar. We analyzed our results of applying local and free flaps for coverage of such defects.

Materials and Methods

18 free flaps for 15 patients and 12 local flaps for 10 patients were used. Operations were performed between 2011 and 2020. Flap survival, complication rate and healing time was evaluated

Results

Free flap survival rate was 88,9%. Both failed flaps were replaced with second free flap and healed uneventfully. none of patients experienced severe infection in recipient site. Local flaps had 100% survival rate however partial flap necrosis was observed in 5 cases (27,7%). This led to delayed healing and worse scaring. Most of patients underwent second procedures for flap refining.

Conclusions

Third degree burn defect coverage with flaps provides good and fast coverage with possibility of scar refining. We advise use of free flaps in terms of lower rate of complications and better cosmetic appearance.

THE ROLE OF NEW PROGNOSTIC FACTORS IN DIAGNOSING COMPLICATED ACUTE APPENDICITIS

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Objectives

Acute appendicitis is one of the most common causes of emergency surgery, affecting 8.6 % of males and 6.7 % of females in their lifetime. Diagnosing complicated acute appendicitis still remains a challenge. Neutrophil to lymphocyte ratio and platelet to lymphocyte ratio are inexpensive, quick markers that could be valuable in determining the severity of acute appendicitis.

The aim of this study was to find out the accuracy of neutrophil to lymphocyte ratio and platelet to lymphocyte ratio in diagnosing complicated acute appendicitis.

Materials and Methods

A retrospective study was performed including patients admitted to the General Surgery Department with suspected acute appendicitis during the period of 2015-2018 years. According to their final histological evaluation and clinical findings patients were divided into ‘complicated appendicitis group’ with diagnosis of gangrenous or perforated acute appendicitis and ‘uncomplicated appendicitis group’ with phlegmonous acute appendicitis. Total leukocyte, neutrophil, lymphocyte, platelet counts and C – reactive protein concentration data were collected. Neutrophil to lymphocyte ratio and platelet to lymphocyte ratio were calculated using absolute neutrophil, lymphocyte and platelet counts. The results were compared among previously described groups.

Results

A total of 1334 patients were included with 988 patients in ‘uncomplicated appendicitis group’ and 346 in the ‘complicated appendicitis group’. Mean age was 36.78 (±15.60) years. Mean total leukocyte count (14.03±3.96 and 12.70±3.66 x109, $p<0.0005$), as well as C-reactive protein (111.72±95.59 and 27.41±35.91 mg/l, $p<0.0005$), neutrophil to lymphocyte ratio (8.88±4.97 and 7.54±5.31, $p<0.0005$) and platelet to lymphocyte ratio (187.79±107.89 and 170.10±84.90, $p=0.029$) was significantly higher in the ‘complicated appendicitis group’ compared to the ‘uncomplicated appendicitis group’.

C-reactive protein concentration was found to be the most accurate marker in diagnosing compliacetd acute appendicitis (AUC 0.828, cut off score 32.0 mg/l with sensitivity 80.12% and specificity 73.12%) according to receiver operator curve (ROC) analysis. Neutrophil to lymphocyte ratio had AUC 0.604, cut off score 5.54, sensitivity 73.96% and specificity 42.93%, while total leukocyte count had AUC 0.593, cut off score 13.5 x 109, sensitivity 53.35% and specificity 60.20% and platelet to lymphocyte ratio had AUC 0.540, cut off score 159.86, sensitivity 51.04% and specificity 57.22%.

Conclusions

Neutrophil to lymphocyte ratio as well as platelet to lymphocyte ratio increased significantly in patients with complicated acute appendicitis and can be useful tool in distinguishing between uncomplicated and complicated acute appendicitis.

Endocrine surgery

ANALYSIS OF SURGICAL TREATMENT FOR MALIGNANT ADRENAL TUMORS AT THE HOSPITAL OF LITHUANIAN UNIVERSITY OF HEALTH SCIENCES KAUNAS CLINICS

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Objectives

1. To identify the main demographic data of the patients (gender, age, number of operations during the period);

2. To evaluate clinical data of the operated patients;

3. To perform the analysis of the results of the surgical treatment and to evaluate the patients' survival.

Materials and Methods

Retrospective documentary analysis of data of patients who underwent surgical treatment for malignant adrenal tumors at the Hospital of LUHS Kaunas Clinics over the period 1998-2018 was performed. Cases of primary adrenal cancer and metastatic tumors of the adrenal gland were included to the analysis. Patient data were collected from hospital clinical database and case histories. Information collected included demographic (age, gender), anamnestic (type of complaints), instrumental examination data (tumor size), histopathological test results. Survival data were obtained from National Cancer Registry. P values of less than 0.05 were considered significant.

Results

The study group comprised 62 patients: 32 (51,6 %) females and 30 (48,4 %) males. The mean age at the time of surgical treatment was 55,6 ± 13,33 years (females 54,5 ± 14,15, males 56,7 ± 12,52). The majority of patients had more than one complaint: 44 (71 %) complained of lumbar pain, 31 (50 %) – general weakness, 16 (25,8 %) – high arterial blood pressure, 12 (19,4 %) – weight loss, 7 (11,3 %) – fever, 3 (4,8 %) – the appearance of stretch marks and changes of body composition. Three patients (4,8 %) had no complaints, tumor was found during the preventive health care check-up. An increase in cortisol levels (40 % of patients) and a decrease in adrenocorticotropic hormone (20 % of patients) in blood were found among patients with the adrenal cortical cancer. Patients, diagnosed with malignant pheochromocytoma tended to have an increase in catecholamines (44,4 % of patients). Based on radiological examinations, 43 patients with >5 cm adrenal tumors were identified and open adrenalectomy was preferred in the majority of cases (83,7 %). Nineteen patients had <5 cm tumors and in most cases, the tumor was removed laparoscopically (63,1 %). According to histopathological examination results, 40 (64,5 %) patients were diagnosed with primary adrenal cancer, 22 (35,5 %) – with metastatic cancer from other organs. The most

frequent histological types of primary adrenal cancer were adrenocortical carcinoma (62,5 %), malignant pheochromocytoma (22,5 %), neurofibrosarcoma (5,0 %), malignant paraganglioma (5,0 %), leiomyosarcoma (5,0 %). The most common primary sites of metastatic adrenal tumors were as follows: 6 (27,2 %) – kidney, 5 (22,7 %) – lung, 3 (13,6 %) – skin, 3 (13,6 %) – breast. Primary localization of 5 (22,7 %) metastatic adrenal tumors remained unidentified. The overall survival rates between the patient groups of primary and metastatic adrenal cancer differed statistically significantly, $p=0,0002$ ($p<0,05$). The survival rates between the two most common groups of primary adrenal cancer (adrenal cortical cancer and malignant pheochromacytoma) did not differ significantly, $p=0,347$.

Conclusions

Adrenal cancer predominantly affects middle-aged patients, with equal frequency both in men and women. In the majority of cases, patients complained of non-specific clinical symptoms (pain in the waist area, general weakness). Some patients expressed no complaints. Patients who underwent adrenalectomy for adrenal metastases had poorer survival rates than those who were operated due to primary adrenal cancer.

CALCIUM ANTAGONISTS COULD BE USEFUL DRUGS IN THE TREATMENT OF HYPOGLYCEMIA CAUSED BY INSULINOMA: A CASE REPORT

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Objectives

To describe the successful treatment of hyperinsulinemic hypoglycemia caused by insulinoma with use of a calcium channel blocker (verapamil).

Insulinomas are the most common functional pancreatic endocrine neoplasms, occur in 1-4 people per million in the general population. Insulinoma is usually a benign and solitary tumor (~90%). Most insulinomas (~90%) are sporadic; less than 10% of patients have multiple tumors or have the MEN-1 syndrome. Multifocal insulinoma is usually associated with genetic syndromes such as MEN1. Surgical removal is the treatment of choice. Medical treatment is indicated in patients who cannot undergo surgery. Previous studies have shown effects of the Ca-channel blockers on treatment of hyperinsulinemic hypoglycemia.

Materials and Methods

A 52-year-old female patient was examined at the Department of Endocrinology of East Tallinn Central Hospital in 2008 due to frequent episodes of hypoglycaemia and weakness. Loss of consciousness, including episodes of amnesia occurred 2-3 times a month. The patient has no family history.

Clinically positive Whipple triad. During episodes of hypoglycaemia, hyperinsulinemia and C-peptide elevations were observed. MRI scan revealed two lesions in the pancreas, the suspicion of insulinoma remaining. In January 2009, suspected insulinoma lesions were operated on. Insulinoma was located by intraoperative use of ultrasound examination and a solitary tumor was enucleated. The histological examination confirmed the diagnosis of insulinoma.

Postoperative blood glucose level, C-peptide and insulin normalized. The disease remained in remission until 2016 - then occurred some new episodes of hypoglycemia (blood glucose 2,4 mmol/l) with high blood insulin level (56,9 mIU/l).

In an abdominal CT, there were 6 focal 5-13 mm intensely contrasting lesions in the arterial phase in the pancreas - especially suitable for multiple insulinomas. Starvation test was stopped after 25 hours, blood glucose from capillary blood was 1.9 mmol/l, serum glucose was 2.3 mmol/l. Somatostatin receptor scintigraphy was performed with the negative result.

The patient refused from surgical consultation and reoperation. She was observed by an endocrinologist two times a year. More frequent meals recommended; less carbohydrates at a time. After 2 years, however, episodes of hypoglycemia became more frequent, with sudden weaknesses occurring, so patient no longer dared to go out alone. Glycated hemoglobin was 3,8%, blood glucose in the range of 1.9-5.1 mmol/l, low blood glucose values occurred both before and after meals. The patient was referred to an endocrine

surgeon in April 2018. The MRI was repeated. MRI examination revealed the same lesions with no progression signs. The patient repeatedly refused from surgical treatment. The treatment with calcium channel blocker, Verapamil 80 mg x 3 per day, was started.

Results

There were no episodes of serious weakness and unconsciousness. The blood insulin level stabilized (5,9-31,8 mIU/L). The patient could manage daily life, was physically active and worked in the garden.

Conclusions

Calcium antagonists could be useful and cost-effective drugs in the treatment of hypoglycemia caused by insulinoma - in this case, the patient has no episodes of serious weakness and unconsciousness since starting treatment with Verapamil.

CLINICOPATHOLOGICAL FEATURES AND OUTCOMES OF GASTROENTEROPANCREATIC NEUROENDOCRINE TUMOURS: 15-YEARS EXPERIENCE AT A TERTIARY REFERRAL HOSPITALS IN LATVIA.

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Objectives

Gastroenteropancreatic neuroendocrine tumours (GEP-NET) are a rare heterogeneous group of neoplasms with variable behaviours. The aim of this study was to describe main characteristics and outcomes of GEP-NET patients followed at tertiary referral hospitals in Latvia over the past 15 years.

Materials and Methods

Patients with confirmed GEP-NET at Riga East Clinical University Hospital and Pauls Stradins Clinical University Hospital between 2006 and 2020 were retrospectively analysed. Data were collected and included by trained study personnel into EUROCRINE, an open-label international Endocrine Surgical registry.

Results

In total, 302 patients were included, among which 62.6% (n=189) were females. The median age at diagnosis was 60 (IQR 71.0-51.5) years. The most frequent primary tumor site was the pancreas 33.4% (n=101), followed by the stomach 23.5% (n=71), small intestine 17.5% (n=53), appendix 7.9% (n=24), colon 7.6% (n=23), rectum 5.6% (n=17), Ca of unknown primary site 4% (n=12) and liver 0.3% (n=1). In 86.4% (n=261) tumours were hormonally non-functional. The main clinical manifestation of non-functional GEP-NET was abdominal pain (45.6%, 119/261). Among those with functioning GEP-NET, 29.3% (12/41) presented with hypoglycaemia and were diagnosed with insulinoma, but 43.9% (18/41) were presented with symptoms related to classical carcinoid syndrome. Distant metastasis occurred in 28.1% (n=85) of patients, of which 81.2% (n=69) had metastasis in the liver. WHO grading was G1 in 41.1% (n=124), G2 in 33.8% (n=102) and G3 in 11.6% (n=35), but in 13.6% (n=41) correct grading was difficult to obtain. Overall, 237 (78.5%) patients underwent endoscopic or surgical resection as a first-line therapy, 230 (97%) with curative intent and seven (3%) for palliative purposes. In 212 (89.5%) patients, resection of the primary tumor was performed, whereas nine (4.2%) patients with a complete resectable primary tumor underwent resection

of liver metastases as well. Meanwhile, for two patients with localised pancreatic NET < 2 cm watch and wait policy was used. The median follow-up period of the entire cohort was 27 (IQR 57-13) months. The OS at the last follow-up was 84.8% (256/302), while the 1- and 3-year overall survival rates were 92.2% and 84.0%, respectively. Moreover, tumor site ($p=0.002$), pathological grading ($p<0.0005$) and presence of metastasis ($p=0.001$) at diagnosis significantly affected overall survival rate.

Conclusions

In our study group approximately one third of GEP-NET occurred in the pancreas and surgery was considered as the main modality of treatment. Tumor site, higher grade and presence of metastases at diagnosis were negative indicators of survival in patients with GEP-NET.

CONTRAST-ENHANCED ULTRASOUND - PROMISING PREOPERATIVE TOOL TO DIFFERENTIATE PARATHYROID ADENOMA AND HYPERPLASIA

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Objectives

Differentiating enlarged parathyroid glands preoperatively may be challenging in conventional B-mode ultrasound. Aim of the prospective study was to evaluate contrast-enhanced ultrasound (CEUS) correlation with morphology and usefulness in patients with primary hyperparathyroidism (pHPT).

Materials and Methods

Consecutive 59 patients with 64 parathyroid lesions and biochemically confirmed pHPT prior to parathyroidectomy were enrolled in the prospective study. B-mode ultrasound, Colour-Doppler (CD), Superb Microvascular Imaging (SMI), Contrast-enhanced ultrasound (SonoVue 2 ml intravenous) were performed with postprocessing of acquired data using VueBox application. Correlation with morphology was evaluated.

Results

Parathyroid adenomas (n-53) were hypoechoic and well defined with increased central echogenicity (82%), peripheral-central vascularization (66%) with feeding vessel (100%), with median size of 10 mm (2-29 mm). Hyperplasias (n-11) were smaller (p=0.007) with tendency for homogenous, markedly more intense enhancement than predominantly peripherally enhanced adenomas. CEUS showed median hypervascularity in early arterial phase - 9s, peak contrast time median value - 15s, median early washout - 29s in both adenomas and hyperplasias. There was a weak association between morphological subtypes of parathyroid adenomas (chief cell, oxyphilic cell and clear water cell) and washout time (Cramer's V 0.33, p=0.125). Multiparametric ultrasound for parathyroid lesions had sensitivity 90% (95% CI 81.24–96.06), specificity 64% (CI 42.52–82.03), PPV 88% (CI 81.22–92.56), NPV 69% (CI 51.58–83.06).

Conclusions

CEUS has high sensitivity for confirmation of parathyroid lesions. Adenomas show more peripheral enhancement while hyperplasias - homogenous enhancement. CEUS could be a promising tool in deciding surgical approaches.

LARYNGEAL REINNERVATION WITH VASCULARIZED LATERAL FEMORAL CUTANEOUS NERVE FLAP FOR VOCAL CORD PARALYSIS

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Objectives

Laryngeal recurrent nerve damage and subsequent vocal cord paralysis remains critical complication after thyroid cancer radical surgery. Speaking and phonation dysfunction decrease quality of life, while respiratory insufficiency and aspiration risk leads to the life-threatening incidents. The aim of the study was to describe a new technique for laryngeal reinnervation using vascularized nerve flap.

Materials and Methods

Vascularized lateral femoral cutaneous nerve (VLFCN) flap was used for laryngeal reinnervation in two cases. All patients were women. Mean age was 49 years. All patients had thyroid cancer ablative surgery less than 6 months before the reinnervation surgery. First patient presented with left side vocal cord paralysis and underwent reinnervation with VLFCN flap. Part of hypoglossal nerve was used as donor motor nerve in the neck. Flap was connected to facial artery and vein. Vascularized nerve was implanted into posterior cricoarytenoid muscle. Nerve length was 5 cm. The second patient presented with bilateral vocal cord paralysis and left side was reinnervated with VLFCN flap, while ansa cervicalis was used to reinnervate right posterior cricoarythenoid muscle. Tracheostomy tube was placed during the surgery.

Results

First patient showed some improvement already two weeks after surgery, which could be explained by the release of the surrounded scar tissue. Three months after surgery, patient had better voice tone, no episodes of aspiration and no choking during physical activities. Moreover, at 2 years of follow-up vocal cord tone was more consistent and patient have maintained more stability without any restrictions during physical activities. Whereas second patient underwent tracheostomy tube evacuation 2 months after surgery. At 1 year of follow-up patient is tube free, have better voice tone and no episodes of aspiration, while some choking still occurs during physical activities.

Conclusions

Vascularized lateral femoral cutaneous nerve flap has showed good early and late results in cases of laryngeal reinnervation for vocal cord paralysis. Vascularized nerve increases the speed and quality of axon regeneration. More cases should be evaluated using this technique, although first results are impressive.

PAPILLARY THYROID CARCINOMA METASTASIS IN CENTRAL AND LATERAL NECK LYMPH NODES

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Objectives

Papillary thyroid carcinoma (PTC) is the most common type of thyroid cancer. Lymph node (LN) metastases are common in PTC. Aim of this study was to determine possible association between tumor size and metastasis in central and lateral LN.

Materials and Methods

Five-year data (2016-2020) from Eurocrine registry of 117 patients who underwent thyroidectomy with LN dissection for PTC were retrospectively analyzed. Patients were divided in two groups - group A one side central LN dissection (n-104, mean age 53.1 ±1.30) and group B one side central and lateral LN dissection (n-13, mean age 57.8±3.72).

Results

In group A mean tumor size was 17.8 ±1.0 mm and in group B 21.5 ±3.2 mm .Tumor size in group A vs B was T1-56.7% vs 38.5%, T2-20.2% vs 23.1%, T3-18.3% vs 30.8%, T4-4.8% vs 7.7%, respectively. In group A central LN metastases were found in 47 (45.2%) and in group B - 9 (69.2%) cases. There was no strong statistically significant difference found between positive central LN in group A and B (p=0.058). Average count of dissected central LN in group A was 6.3 (1-30) with positive 3.2 (1-16). In group B average count of dissected central LN was 8.2 (2-18) with positive 3.7 (1-10). In group B metastatic lateral LN were found in 9 (69.2%) cases. Average count of dissected lateral LN was 10.0 (3-17) with positive 5.2 (1-9). In group B there were 3 (23%) cases with positive lateral LN but negative central LN and vice versa – 3 cases (23%) with positive central and negative lateral LN. One patient (7.7%) had both negative central and lateral LN.

Conclusions

Although papillary thyroid carcinoma has good overall prognosis, possibility of metastases in cervical lymph nodes is high. Larger tumors were associated with higher risk of metastasis in lateral LN. Presence of metastatic LN in lateral neck compartment had no statistically significant association with metastases in central neck compartment, however, p value was relatively low, further studies with larger groups could prove different results.

TRANSAXILLARY GASLESS ENDOSCOPIC HEMITHYROIDECTOMY VERSUS CONVENTIONAL OPEN HEMITHYROIDECTOMY: ONE CENTER EXPERIENCE

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Objectives

Conventional open thyroidectomy is gold standard in thyroid gland diseases treatment. Although progressive surgery methods as endoscopic and robotic technique provides better structure visualization and cosmetical effect. Our study aim is to compare conventional and endoscopic hemithyroidectomy between European population and define learning curve for transaxillary endoscopic gasless hemithyroidectomy.

Materials and Methods

We analysed 155 conventional open (COH) and 65 endoscopic gasless transaxillary hemithyroidectomy (TAH) retrospectively. Patients demographic data, hospital stay, surgery and histological examination details, such as surgery time, resected lobe volume and weight, node diameter, drain placement and drainage duration, complications were compared. Also surgeon learning curve analysis using CUSUM for duration of the surgery was made.

Results

Analysis demonstrates that TAH is orientated to younger female patients with smaller thyroid gland in comparison with COH group. Patients who had been operated by COH, were hospitalized longer in comparison with endoscopic thyroidectomy group patients ($p<0.05$). TAH surgery time is longer (78.05±22.59 minutes) compared with COH (66.64 ±17.23 minutes) ($p<0.05$). Overall complication rate is comparable between groups. Tendency to lower unintentional parathyroidectomy rate in TAH group, when no one parathyroid gland was resected, although without statistical difference between both groups. Statistical analysis in TAH group shown patients whose BMI was over 30 (kg/m2), surgery time was significantly longer with comparision, when BMI was below 30 (kg/m2) (p-0,004). TAH surgeon learning curve dividing patients in 6 groups starting from 10 first to 10 last cases were evaluated. Shortest endoscopic surgery time (64.9±12.45 minutes) reached between 41-50 cases. Cusum analysis shown surgery time decreasing after 30th endoscopic lobectomy case.

Conclusions

Thyroid surgery using a transaxillary approach can be performed safely for selected patients. TAH approach provides excellent cosmetic result and a shorter hospital stay comparing to COH. Endoscopic hemithyroidectomy technique provides better adjacent structures visualization and leads to relatively lower overall complication rate. After thirty cases surgeon

become proficient in transaxillary endoscopic thyroid surgery.

TRANSAXILLARY GASLESS ENDOSCOPIC THYROIDECTOMY VERSUS CONVENTIONAL OPEN THYROIDECTOMY: SYSTEMATIC REVIEW AND META-ANALYSIS

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Background & Aims

Conventional open thyroidectomy is gold standard in thyroid gland diseases treatment. Although progressive surgery methods as endoscopic and robotic technique provides better structure visualization and cosmetical effect. This systematic review and meta-analysis evaluate surgical outcome and safety results of conventional versus endoscopic transaxillary gasless thyroidectomies.

Materials and Methods

A systematic literature search was performed in the following electronic databases: PubMed, Embase, Medline and Cochrane. Surgery outcomes included such as operative time, hospitalization period and level of postoperative pain Complications included postoperative bleeding, hyperparathyroidism, recurrent laryngeal nerve (RLN) palsy, seroma formation. The weighted mean differences (WMDs) or the ORs with corresponding 95% CIs were examined for surgical outcomes and complications. The results were analyzed using fixed- or random-effects models. The heterogeneity was checked by the Cochran Q test and evaluated the extent of inconsistency by the I2 statistic.

Results

Ten studies and 1597 patients were included. All studies found that endoscopic transaxillary thyroidectomies required a longer operative time than conventional technique (WMD 43.69, 95% CI 26.02 to 61.36, $p<0.00001$). Postoperative pain was significantly lower after endoscopic thyroidectomy compared to conventional surgery: on day 1 (WMD -1.28, 95% CI -1.48 to -1.08, $p<0.00001$) and day 7 (WMD -0.91, 95% CI -1.12 to -0.70, $p<0.00001$). No statistical difference were found in complication rates between conventional and endoscopic thyrodectomy approaches.

Conclusion

Endoscopic transaxillary gasless thyroidectomy has disadvantages such as longer surgery time, but is feasible and safe procedure with lower postoperative pain and comparable complication rates to conventional thyroid surgery.

TWO DECADES OF ADRENAL SURGERY

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Objectives

Aim of this study is to analyse advancement of adrenal surgery in period of two decades in single centre.

Materials and Methods

Since 1999 adrenalectomy was performed in 269 patients, with even distribution of cases over decades: 126 (1999-2008) and 143 (2009-2020). Data were analysed regarding surgery type, operation time, morphology, perioperative complications, preoperative and morphological diagnosis accuracy.

Results

Mean patient age was 54.9 (19-83) years, predominantly female - 199 (73.9%) vs 70 (26.1%) male. Hormonally inactive tumors were the main indication for surgery in both decades: 90 (71.4%) and 55 (38.5%) respectively. Hormonal expression prior to operation were: hyperaldosteronism 11 (8.7%) vs 42 (29.4%), pheochromocytoma 18 (14.3%) vs 22 (15.4%), Cushing's syndrome – 2 (1.6%) vs 8 (5.6%) cases. Malignancy was indication in 5 (4.0%) vs 8 (5.6%) cases.

Overall laparoscopic adrenalectomy (LA) was a method of choice performed in 202 (80.2%) cases, open (OA) in 41 (16.2%) cases, 9 (3.6%) operations were converted (CA). LA prevalence tends to increase over the last decade - 92 (73.0%) vs 126 (88.1%) but CA to decrease - 6 (4.8%) vs 3 (2.1%). Mean operation time decreased - 112±42 vs 86±24 min. Morphology revealed benign tumors in 118 (95.9%) and 114 (79.7%) of cases with highest incidence among adrenocortical adenomas 82 (65.1%) and 70 (49.0%) cases. Benign pheochromocytomas found in 23 (18.7%) and 16 (11.2%) respectively. Over years malignant finding in morphology increased from 8 (6.4%) to 29 (20.3%). Preoperative diagnosis became more accurate: correspondence with morphology over decades: 90 (73.2%) vs 120 (83.4%). Perioperative complication rate decreased from 16 (12.7%) to 11 (7.7%). Average hospital stay decreased significantly: 10.8 ±3.5 days in the first decade to 4.7±2.6 days in second.

Conclusions

Adrenal surgery outcome and perioperative complications are associated with learning curve and experience.

Hepato-pancreato-biliary surgery

APPLICATION OF FLUORESCENCE IMAGE GUIDED CHOLANGIOGRAPHY FOR THE ASSESSMENT OF BILIARY ANATOMY IN PATIENTS WITH ACUTE CHOLECYSTITIS.

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Objectives

Bile duct injuries are rare with an incidence of 0.3% to 0.7%, however it can lead to serious consequences. Laparoscopic cholecystectomy (LC) for acute cholecystitis (AC) tends to be difficult even in experienced surgeons hands leading to increased risk of complications. Near-Infrared Fluorescent Cholangiography (NIRF-C) has shown to increase the visualization and identification of extra hepatic biliary ducts (EHBD), thus helping surgeons to identify biliary anatomy in difficult cholecystectomy. The purpose of this study was to assess fluorescence effect for detection of biliary anatomy in patients with AC.

Materials and Methods

Patients with AC who were scheduled for emergency LC using NIRF-C were prospectively included in study. The patients were divided into two groups according to Tokyo Guidelines 2018: Group 1 mild AC; Group 2 moderate AC. Fixed dose (12.5 mg) of Indocyanine green (ICG) was administered intravenously 12 hours before the surgery to avoid strong liver background and visualise EHBD. Fluorescence effect and EHBD identification rate was evaluated both before and after the dissection of anatomical structures according to Critical View of Safety principle.

Results

A total thirty-five patients underwent LC with NIRF-C, 19 females (54%) and 16 males (45%). The mean age was 58 years and average BMI 29 kg/m2. 18 (51%) patients were included in Group 1 and 17 (49%) in Group 2. NIRF-C was successfully applied in all. The fluorescence effect for visualization of EHBD before and after the dissection were as follows - cystic duct (CD), confluence of cystic duct and common bile duct (CD&CBD) and common hepatic duct (CHD) prior to dissection in 86%, 54%, 51% but after the dissection visualization increased to 91%, 71%, 71% of patients, respectively. The comparison of the number of visualized bile duct structures between the groups was done and it revealed:

Group 1 Mild AC: 0 – structures – 1 patient (5.6%)

1 structure – 8 patients (44.4%)

2 structures – 0 patients

3 structures – 9 patients (50%)

Group 2 Moderate AC: 0 structures – 3 patients (17.6%, p=1.1), comparing Group 1

1 structure – 2 patients (11.8%, p=-2.1), comparing Group 1 2 structures – 6 patients

(35.3%, p=2.8), comparing Group 1

3 structures – 6 patients (35.3, p=-0.9), comparing Group 1

The mean operative time was 67 (35-140) minutes and mean hospital stay was 6 (4-18) days. No postoperative complications were reported.

Conclusions

NIRF-C is safe, easy applicable and effective method for real-time visualization of EHBD that improves surgeon's confidence performing LC.

The EHBD visualization rate is influenced by the presence of moderate perivesical inflammation.

BILIARY DUCT STENTING AND STENT OCCLUSION: WHO, WHEN, WHY?

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Objectives

Endoscopic stenting is a foremost therapy in biliary duct strictures with stent occlusion and cholangitis being the most common complications. Since risk factors for stent occlusion are still unknown, we aimed at evaluating effect of stricture etiology on stent patency.

Materials and Methods

We conducted a retrospective study of patients who underwent endoscopic biliary duct stenting in tertiary center in 2016 - 2017. We collected demographic (age, gender) and clinical data (bile duct stricture etiology, presence of cholangitis, common bile duct and gallbladder stones, cholecystectomy, antibiotics, number and diameter of stents placed, days to next stenting and whether the subsequent stent placement was emergent) from hospital records.

Results

Our study comprised 626 (re)stenting episodes with an intent for stent replacement after 3 months. 54,3% of patients were male, average age 63,9±15,6 years. Stentings were grouped according to biliary duct stricture etiology: 22% were due to cholangiocarcinoma, 36,6% - extraductal malignancy, 11,3 - echinococcosis, 30% - other. On average stent was patent for 62 days and 44,4% of following stent placements were emergent. ANOVA revealed significant effect of etiological group on time interval to next stenting ($F(3, 622) = 39,5$, $p<0,001$). Logistic regression showed that CBD stones and cumulative stent diameter had protective effect from stenting being emergent, OR=0,53, CI 0,34 - 0,83, p=0,006 and OR=0,86, CI 0,78-0,94, p=0,002 respectively, whereas stent count increased the risk OR=3,71, CI 1,70-8,08, p=0,001. Cox regression revealed that cholangiocarcinoma and extraductal malignancy increased likelihood of stent replacement HR=1,72, CI 1,38-2,15, $p<0,001$ and HR=1,8, CI 1,51-2,23, $p<0,001$ correspondingly, whereas echinococcosis prolonged stent patency HR=0,6, CI 0,46-0,81, $p<0,001$.

Conclusions

Etiology of bile duct stricture is evidently important in stent patency, echinococcosis being a prolonging factor. Further bile studies are warranted to investigate echinococcosis role in stent occlusion.

BILIARY STENTING PRIOR RADICAL PANCREATODUODENAL RESECTION

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Objectives

Pancreaticoduodenectomy is the only potentially curative treatment for resectable periampullary tumors, often presenting with obstructive jaundice and cholangitis. Since surgery in patients with jaundice and acute cholangitis is associated with increased rate of postoperative complications, preoperative biliary drainage was introduced to improve outcomes. However, recent studies revealed, that overall complication rate was higher in patients with preoperative biliary drainage, compared with patients who proceeded directly into surgery. Our aim was to evaluate and compare 60 days perioperative outcomes of patients with and without biliary stents before pancreatoduodenal resection in our hospital.

Materials and Methods

Retrospective review of patients undergoing pancreatoduodenal resection for periampullary tumors from 2012 to 2018 at the Department of Surgery, Hospital of the Lithuanian University of Health Sciences was performed. Study population, according to endoscopic biliary stenting prior operation was divided into two groups. Patients were reviewed for demographic features, complication rates and outcomes.

Results

During the investigated period 115 patients with median age of 68 years underwent pancreatoduodenal resection due to periampullary tumors. Group I – 41 patients with preoperative biliary stenting (35.6%), Group II – 74 patients without biliary stenting (64.4%). Group I patients developed acute cholangitis in 38 cases (92.8%) compared to 50 in group II (67.5%) ($p<0.01$). Most of the cholangitis in both groups were caused by hospital-acquired pathogenic microorganisms: Enteroccocus supp., Klebsiella Oxytoca, Klebsiella Pneumonia and Citrobacter Freundii. Patients with biliary stents had significantly higher Clavien-Dindo grade 1-2 complication rates compared to control group (83.7% (n=36) vs 50.5% (n=47), $p<0.001$). Postoperative pancreatic fistulas were diagnosed in 8 patients (7%): 2 grade B and 1 grade C in group I and 4 grade B and 1 grade C in group II ($p=0.84$). There was no significant difference on operating time (305.12)44.82) min. vs 302.42(82.14) min., $p=0.58$), hospitalization time (14.0)8.28) days vs 14.42) 12.10) days, $p=0.88$), postoperative bleeding and surgical site infection rates between the two groups. 7 (4.6%) patients died during the first 60 days after the operation: 1 patient in stent group (2.4%) and 6 (8.1%) in control group ($p=0.17$).

Conclusions

Preoperative biliary drainage is associated with increased risk of post-operative complications and nosocomial infection, however it does not affect mortality and

hospitalization time.

COMPARISON OF BLUMGART ANASTOMOSIS WITH BUCHLER ANASTOMOSIS AFTER PANCREATICODUODENECTOMY AT KLAIPEDUS UNIVERSITY HOSPITAL

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Objectives

The aim of the study was to compare the Blumgart anastomosis (BlA) with Buchler anastomosis (BuA) after pancreatoduadenectomy (PD) at Klaipeda university hospital (KUL) regarding the rate of clinically relevant pancreatic fistula and overall complications.

Materials and Methods

We performed retrospective analysis of all pancreatoduadenectomys performed from January 1, 2015 to December 31, 2020, at the Department of Surgery, of Klaipeda university hospital, Lithuania. The patients were divided into two groups and were compared based on the type of pancreatic anastomosis performed. The aim was to determine the occurrence of clinically relevant postoperative pancreatic fistula and to determine whether severe complications occurred.

Results

51 pancreatoduodenectomys were performing during study period for various cases. Study exhibited a survival rate of 90. 2% whereas mortality rate of 9.8% was observed among patients. 23 cases were performed with Blumgard anastomosis (BlA) and 28 cases with Buchler anastomosis (BuA). Postoperative pancreatic fistula (POPF) was observed in 17 cases (33%). 9 (39%) POPF formed in patients with BlA and 8 (28%) POPF with BuA. Grade C POPF was observed in 3 patients of all cohort and only in BuA group. 2 of them were related to Clavien Dindo complication grade V. No deaths were in BlA group.

Conclusions

Study showed that performing PD with BlA is related with less severe complications and could be a more efficacious surgical procedure involving lesser life risk and postoperative complications.

CONVOLUTIONAL NEURAL NETWORK (CNN) MODEL FOR RECOGNITION OF PANCREATIC CANCER

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Objectives

While pancreatic cancer remains one of the leading causes of cancer-related deaths in both men and women, surgery continues to be a treatment of choice in early stages of the disease. Despite advance in state-of-the art imaging techniques, early detection and surgical resectability remains a challenge. Deep learning methods became a power tool for diagnostic CT images analysis. This research presents the application of deep learning methods for conventional radiologic methods while planning a pancreatic resection.

Materials and Methods

Combination of several computed tomography (CT) databases of patients with confirmed pancreatic cancer are analyzed on portal venous phase. The first two databases are open access: dataset from Memorial Sloan Kettering Cancer Center included CT images of 281 patients with pancreatic cancer, and TCIA dataset included CT images of 80 individuals with normal pancreas from the US National Institutes of Health Clinical Center. The third one is from Vilnius University Hospital Santaros Klinikos included 20 patients with pancreatic cancer and 16 individuals with normal pancreas. Data preprocessing has been performed on CT from open access databases: 8796 slices with annotated pancreatic cancer and 18942 slices with normal pancreas were extracted. Data preprocessing has been performed on CT from Vilnius University Hospital Santaros Klinikos, too: 430 slices with annotated pancreatic cancer and 1119 slices with normal pancreas were extracted. Convolutional neural network has been applied on these data, using various complexity of the network.

Results

The first experiment was performed on the open access data and the convolutional neural network has been used. This data was divided into two parts – 70% for training and 30% for validation. Size of images to analyze was set equal to 128x128. Pancreatic cancer classification efficiency on the validation set has been achieved equal to 93%. The second experiment was performed when the training the convolutional neural network has been performed using all chosen slices from open access datasets and validation has been performed using data from Vilnius University Hospital Santaros Klinikos. Size of images to analyze was set equal to 50x50. Pancreatic cancer classification efficiency on the validation set has been achieved equal to 72.24%.

Conclusions

Preliminary results show that CNN can serve as a tool in early disease diagnostics and pancreatic cancer surgery planning. Combination of open access databases and images obtained from our hospital provide opportunity to further improve the performance of CNN, thus to be used in clinical practice. Further studies are needed.

EARLY CONTINUOUS VENO-VENOUS HEMOFILTRATION MAY PREVENT INTRAABDOMINAL HYPERTENSION AND IMPROVE SURVIVAL IN PATIENTS WITH SEVERE ACUTE NECROTIZING PANCREATITIS.

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Objectives

Systemic inflammatory response, the release of cytokines lead to increased vascular permeability, and development of intraabdominal hypertension (IAH). Early recognition, prevention, and treatment of the IAH are essential.

Aim: To determine the role of an early application of continuous veno-venous hemofiltration (CVVH) in achieving negative fluid balance and preventing IAH in the course of necrotizing SAP.

Materials and Methods

Analysis of prospectively collected treatment protocols of patients with necrotizing SAP who were treated in ICU and underwent CVVH during the period from January 2000 to December 2020. Patients were stratified in two groups according to whether CVVH was started within the first 48 hours after admission (Early group) or later (Late group). Transvesical measurement of the intraabdominal pressure was performed. IAH was diagnosed when sustained or repeated intraabdominal pressure (IAP) was ≥ 12 mmHg. The main variables were the dynamics of IAP, fluid balance, and the main outcomes.

Results

239 patients with necrotizing SAP developed IAH and underwent CVVH. Of all, CVVH was performed within 48 hours in 159, and in 80 later than 48 hours from the admission. Negative fluid balance was achieved on day 3 in the Early group (-386.4 ml on average) and day 8 in the Late group (-403.3 ml on average). The median IAP before the commencement of CVVH was similar 18.0 [IQR 22-15] vs. 19.5 [IQR 22-14.8] mmHg, p=0.975 in the Early and Late groups accordingly, however later commencement of CVVH lead to significantly higher maximal IAP during the treatment 23 [IQR 27-16] vs. 18.0 [IQR 20.3-15], p=0.018. ICU (11 [IQR 20.5-7] vs. 13 [IQR 23.8-7.8], p=0.246) and hospital stays (21.5 [IQR 48-15] vs. 24.0 [IQR 42.3-16.3], p=0.246) were similar for Early and Late groups, however early CVVH resulted in significantly lower mortality rate (11.3% vs. 23.8%, p=0.012). No major procedure-related complications were observed.

Conclusions

Early CVVH is a valuable tool in the treatment of necrotizing SAP, prevention of IAH, and could improve survival.

LAPAROSCOPIC COMMON BILE DUCT EXPLORATION FOR PATIENTS WITH CHOLEDOCHOLITHIASIS.

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Objectives

Laparoscopic common bile duct exploration (LCBDE) is one of one stage treatment options for complicated gallstone disease, and in experienced hands it is an effective method as two step approach using ERCP. The aim of this study was to evaluate the effectiveness of LCBDE and to show different approaches for the treatment of common bile duct (CBD) stones.

Materials and Methods

Patients with choledocholithiasis which underwent LCBDE were retrospectively included in study from 2012 to 2019. Patients were stratified in two groups: GroupI - transcystic exploration, GroupII - transductal exploration. A choledochoscope was always used during a transcystic exploration, while a transductal exploration was performed with or without a choledochoscope. Complications caused by gallstones and radiological imaging tactics were analysed in the preoperative period. The severity of acute cholangitis was determined using Tokyo Guidelines 2018. The severity of acute pancreatitis was assessed using revised Atlanta 2012 classification. Intraoperative data such as: intraoperative ultrasound (IOUS) findings, type of exploration, duration of surgery and outcomes were analysed. In the postoperative period, the duration of hospitalization, complications and outcomes were evaluated.

Results

Overall 207 patients (149 female and 58 male) with median age of 62 (IQR=72-49) years underwent LCBDE. GroupI included 118 (57%) patients, GroupII 89 (43%) patients. Acute biliary pancreatitis was diagnosed in 43 patients, 79% of which were mild pancreatitis. A total of 106 cases of acute cholangitis were diagnosed, significantly more patients were in GroupII 60 (67%) comparing to GroupI 46 (39%), $p<0.001$. The majority of patients in both groups underwent transabdominal ultrasound and in 41 (20%) patients choledocholithiasis was diagnosed. Preoperative MRCPG was done only in 54 patients and it confirmed CBD stones in 89%. IOUS was used as an intraoperative diagnostic method in all patients, and it confirmed choledocholithiasis in all patients. During IOUS the diameter of the common bile duct was evaluated, in GroupI it was 9mm (IQR=10-7) and in GroupII 14mm (IQR=18-12), $p<0.001$ respectively. 43 patients in GroupII underwent CBD exploration with and 46 patients without choledochoscope. Median operative time in GroupI was 75 (IQR=115-65) and in GroupII 110 (IQR=135-85) minutes, $p<0.001$. CBD clearance rate in GroupI reached 88.1% but in GroupII 96.6%. Overall conversion rate to open surgery was 2.3% and surgery related complication rate was 6.7%. Median postoperative hospital stay was 4 days. Overall mortality rate was 1%.

Conclusions

One stage LCBDE is highly effective method for one stage management of CBD stones. Transductal CBD exploration can be equally effectively provided with or without choledochoscope.

MANAGEMENT OF CHRONIC PANCREATITIS SURGICAL COMPLICATIONS: A TEN YEAR EXPERIENCE IN RIGA EAST CLINICAL UNIVERSITY HOSPITAL

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Objectives

Chronic pancreatitis (CP) is a multifaceted, progressive fibro-inflammatory disease which leads to endocrine and exocrine insufficiency and chronic pain due to irreversible structural changes in pancreas. Treatment of CP is centred on a conservative approach, however surgery and endoscopy is a cornerstone for the management of surgical complications.

The aim of the study was to evaluate and analyse treatment of CP surgical complications during a ten-year period in Riga East Clinical University Hospital (RECUH).

Materials and Methods

301 patients with CP who underwent surgery were retrospectively included in study between 2010-2020. CP was staged in accordance to M-ANHEIMM criteria. CP surgical complications in relation to type of surgical intervention (open, laparoscopic, endoscopic, endovasal) and overall complication rate and outcomes were analysed. The data has been collected from medical records and analysis was done with Excel 2016 and IBM SPSS Statistics 22.

Results

The average age of a patients was 48.9 years (IQR=15) from which 77.4% (N=233) were men.

Most common symptoms were abdominal pain 83.8% (N=253) followed by 55.8% (N=168) exocrine and 22.6% (N=68) endocrine insufficiency. Pseudocysts were diagnosed in 67.77% (N=204), calcifications 54.5% (N=173), internal fistula 10.6% (N=32), pseudoaneurysms 5.3% (N=16), biliary obstruction 21.9% (N=66) and portal hypertension in 29.9% (N=90) of patients. According to M-ANNHEIM staging second stage CP was diagnosed in 43.9%, first stage 35.2%, third stage 10.3% and forth stage in 4.3% of patients.

Overall, 387 surgical interventions were performed. Open and laparoscopic interventions (resections and internal drainage procedures) comprised of 55.8% (N=216) followed by ultrasound-guided drainage 25.3% (N=76), invasive radiological procedures 10.9% (N=42), endoscopic treatment 6.2% (N=24), pancreatic biopsy 1.3% (N=5), thoracentesis 1.3% (N=5) and other type of operations 4.7% (N=18). Structured analysis of surgical interventions showed that 97 (25%) Frey's procedures were performed, Puestow procedures 5 (1.3%), Beger procedures 7 (1.8%), pancreaticoduodenectomies 5 (1.3%), distal gland resections 15 (3.9%) and drainage of pseudocysts in 66 patients respectively.

Endoscopy and percutaneous transhepatic cholangiography was performed in 6.2% (N=24) and 4.1% (N=16) of patients, however interventional radiology procedures were applied in 6.7% (N=26).

The overall average hospital stay and ICU stay was 15.8 (SD=8.78) and 2.15 (SD=3.39) days respectively. Postoperative complications were observed in 8.6% patients (N=26), from all 57.7% of patients had had postoperative bleeding. Mortality rate was 1.3% (N=4).

38 (12,6%) patients were repeatedly admitted to the hospital during a ten-year period.

Conclusions

Surgical treatment of CP is challenging and multidisciplinary approach and combination of different interventional procedures are required for the achievement of favourable outcomes.

NEW SURGICAL TECHNIQUE VARIANT OF PARTIAL ALPPS -TOURNIQUET ALPPS: CASE REPORT

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ALPPS- associating liver partition and portal vein embolization for staged hepatectomy results in liver regeneration in only 7-9 days. Due to its high morbidity and mortality less aggressive variants were designed. We present case report of 76 years old women with several large liver metastases of small bowel mixed cancer whom the tourniquet ALPPS was applied.

76 years old women underwent jejunal resection due to mixed carcinoma (adenocarcinoma G2+ giant cell carcinoma) of small bowel. After operation, 8 circles of capecitabine were administrated as adjuvant chemotherapy. After 2 years of follow up the CT revealed the metastatic lymph node in the mesenterium of small bowel, and the liver lesion in segment 7 which was named as hemangioma. Relaparatomy and extirpation of metastatic lymph node as well as 13 circles of XELOX as adjuvant chemotherapy was realized. Patient was lost of follow for up to 2 years. She came back due to blunt pain in the right side of her back. CT revealed 2 large metastases in segments 5/6/7 and 4A/8 and calculated future liver remnant (FLR) was insufficient for the right hepatectomy. Right portal vein branch embolization was performed. After 4 weeks the 8% augmentation of FLR was insufficient, so the decision to perform ALPPS procedure was accepted.

New variant of partial ALPPS- Tourniquet ALPPS - was performed. In stage 1, after the mobilzation of liver encirculation with the tapes of right hepatic vein, right hepatic artery, right bile duct and ligation of right portal vein were performed. The tourniquet was placed from the base of the liver to the left of right bile duct end right hepatic vein. Then 1 cm deep liver parenchima transection was performed and the tourniquet was knotted the under ultrasound control tighty enough to completely occlude intrahepatic circulation. On the 7 postoperative day CT scan revealed the 15% augmentation of FLR. Stage 2 was performed on the 9 postoperative day. During stage 2, the tourniquet was used to perform hanging manevrue and liver bipartition was performed following ischemic line produced by the tourniquet.

The postoperative course was uneventful. The patient was discharged on the 10 postoperative day.

Caonclusion:This presented variant of ALPPS is less agressive than original ALPPS and allows to achieve the sufficient augmentation of FLR in almost 7 days.

PERCUTANEOUS TRANSHEPATIC CHOLECYSTOSTOMY IN THE MANAGEMENT OF ACUTE CHOLECYSTITIS.

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Objectives

Percutaneous transhepatic cholecystostomy (PTHC) can be used as one of the treatment methods in patients with moderately severe and severe acute cholecystitis. It can also be used as a step-up approach for high-risk patients with serious comorbidities before definitive surgery. The aim of the study was to share our experience of routinely used PTHC for patients with moderately severe and severe acute cholecystitis at the Riga East Clinical University Hospital.

Materials and Methods

Urgently admitted patients with acute cholecystitis who underwent percutaneous transhepatic cholecystostomy as a definitive treatment or step-up approach to control sepsis before surgery were prospectively included in study between January 2013 and October 2020. The severity of acute cholecystitis was determined using Tokyo Guidelines 2018. Overall health status was assessed using the 'American Society of Anaesthesiologists' (ASA) classification. Outcome analysis included the need for additional surgical intervention, overall hospital stay, complication and mortality rate.

Results

During this period, 6572 patients with acute cholecystitis were treated in the hospital, from all 4229 were treated surgically by open or laparoscopic cholecystectomy and 2079 received conservative treatment. Overall, 342 (5%) patients (190 female and 152 male) with median age of 79 years (IQR=85-73) underwent PTHC. According to ASA classification 40% of patients had ASA III, 46% ASA IV and 9% ASA V at the time of admission. Moderately severe cholecystitis was diagnosed in 255 (75%) and severe cholecystitis in 87 (25%) of patients. 79 (23%) patients were treated in the intensive care unit. In 190 (56%) PTHC was applied within 24 hours of admission. Cholangiography through PTHC drain was performed in 71% of patients and in 56 (16%) common bile duct stones were diagnosed. In 13% cholangiography was not possible because the cystic duct was blocked with a stone. MRCP was performed in 21 patients, confirming choledocholithiasis in 10. However, ERCP was performed only in 46 cases due to choledocholithiasis. For the majority of patients who did not have ERCP during primary hospitalization, it was postponed until stabilisation of general status or lithotomy was done during surgery. 106 patients were discharged from the hospital with a cholecystostomy drain with recommendations for drain removal within 2 weeks on outpatient basis. PCTH as a step-up approach before definitive surgery was applied in 78 (23%) of patients. Laparoscopic cholecystectomy was performed in 34 and open

cholecystectomy in 44 patients. Median hospital stay was 11 days (IQR=15-9). 10 patients developed complications associated with the procedure, 7 patients underwent surgery because of biliary peritonitis and 1 patient because of hemoperitoneum, 1 patient underwent pleural puncture due to right side hydrothorax, 1 asymptomatic patient was treated conservatively due to a small amount of free fluid in the abdominal cavity. Overall mortality rate was 5.8% (20 patients).

Conclusions

PTHC can be used safely and effectively in severely comorbid patients with moderate and severe cholecystitis. This method can be used as a step-up approach to control sepsis before definitive surgical treatment.

PREOPERATIVE PLATELET TO LYMPHOCYTE RATIO AS A PROGNOSTIC FACTOR FOR RESECTABLE PANCREATIC CANCER: A SYSTEMATIC REVIEW AND META-ANALYSIS

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1. Department of Surgery, Medical Academy, Lithuanian University of Health Sciences

Objectives

Recent studies show that various inflammatory markers can have prognostic role in patients with resectable pancreatic cancer. While there are systematic reviews and meta-analyses analyzing importance of other blood markers, prognostic value of preoperative platelet to lymphocyte ratio (PLR) is still controversial. Our aim was to perform systematic review and meta-analysis of PLR as a preoperative prognostic factor for resectable pancreatic cancer.

Materials and Methods

Systematic literature search was conducted for studies, assessing PLR influence as a preoperative prognostic factor in resectable pancreatic cancer patients. Random effects model was applied for pooling hazard ratios (HRs) and 95% confidence intervals (CIs) related to overall (OS) and disease-free survival.

Results

Fourteen articles with 2743 patients were included in the study. According to analysis high PLR had no correlation with decreased OS (HR=1.00; 95% CI=0.99-1.01; P=0.39; I2=83%). Due to high heterogeneity among studies subgroup analysis was performed. Better OS was associated with low PLR in Asian patients, patients with mixed type of operation performed and in patients with preoperative PLR≤150. Low PLR was associated with significantly better disease-free survival (HR=1.60; 95% CI=1.03-2.49; P=0.04).

Conclusions

Platelet to lymphocyte ratio is a predictive factor of better disease-free survival in patients with resectable pancreatic cancer. However, available evidence does not support PLR as a reliable prognostic factor for overall survival.

THE VALUE OF LAPAROSCOPIC ULTRASONOGRAPHY IN PATIENTS WITH SUSPECTED CHOLEDOCHOLITHIASIS

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1. Riga East University Hospital

Objectives

Real-time imaging of the common bile duct during laparoscopic cholecystectomy is frequently required due to the possible choledocholithiasis. We are reporting our 7-year experience of using laparoscopic ultrasonography (LUS) to control choledocholithiasis during laparoscopic cholecystectomy in patients with complicated gallstone disease.

Materials and Methods

Retrospectively collected data of preoperative investigation, intraoperative findings, and postoperative outcomes were assessed in urgently admitted patients with suspected choledocholithiasis.

Results

Overall in 696 patients (198 males, 498 females), laparoscopic ultrasonography was done during laparoscopic cholecystectomy. The mean age of males and females was 59.3 and 54.9 years, p-value = 0.001.

Trans-abdominal ultrasonography (TAUS) and magnetic resonance cholangiopancreatography (MRCP) was done in 652 and 160 patients in preoperative setting from whom choledocholithiasis was detected in 61 (9.4%) and 68 (42.5%) cases. However, during surgery coexisting choledocholithiasis was detected in 332 patients (47.7 %) by LUS. According to the intraoperative data based on LUS, we found that TAUS/MRCP were true positive in 47/57 and true negative in 329/52 cases as well as false positive in 14/11 and false negative in 262/40 cases. Thereby, MRCP shows a positive predictive value of 83.8%, a negative predictive value of 56,5 %, a sensitivity of 58,8 %, and a specificity of 82.5%. Also, we found that the mean size of stones not diagnosed before surgery on MRCP was statistically significantly higher than the size of stones proved by MRCP and LUS, 2.9 versus 5.6 millimeters, respectively, $p < 0.001$. Moreover, the mean size of the common bile duct in patients with proved choledocholithiasis on MRCP was 7.9 and on LUS was 10.3 mm, $p < 0.001$.

During the two-year follow-up period, 28 patients were readmitted due to the suspicion of residual stones, and residual choledocholithiasis was proved in 13 of them, in 10 patients previously diagnosed on LUS, and in 3 patients not diagnosed by LUS during the first admission. That revealed the following diagnostic accuracy of LUS as a positive predictive value of 100 %, a negative predictive value of 99.2 %, a sensitivity of 99.1 %, and a specificity of 100 %.

Conclusions

LUS is a real-time, therefore rational, highly valuable, and safe diagnostic modality in patients with any risk of choledocholithiasis. LUS demonstrates the superiority of diagnostic accuracy of choledocholithiasis over preoperative imaging, especially in cases of small biliary stones.

TRENDS IN INCIDENCE AND MORTALITY OF PRIMARY LIVER CANCER IN LITHUANIA 1998-2015

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Objectives

Background: Recently, reports have suggested that rates of liver cancer have increased for last decades in the developed countries - increasing hepatocellular carcinoma and cholangiocarcinoma rates were reported. Aim of this study was to examine time trends of incidence and mortality rates of liver cancer for the period 1998-2015 in Lithuania by sex, age and histology.

Materials and Methods

We examined the incidence of liver cancer from 1998 through 2015 using data from the Lithuanian Cancer Registry. Age-standardized incidence rates were calculated by sex, age, and histology. Trends were analysed using the Joinpoint Regression Program to estimate the annual percent change.

Results

Results: 3086 primary liver cancer cases were diagnosed and 2922 patients died from liver cancer. Total number of liver cancer cases has changed from 132 in 1998 to 239 in 2015. Liver cancer incidence rates changed during the study period from 5.02/100 000 in 1998 to 10.54/100 000 in the year 2015 in males and from 2.43/100 000 to 6.25/100 000 in females. Annual percentage changes (APC) in the age-standardized rates over this period were 4.5 % for incidence and 3.6% for mortality. Hepatocellular cancer incidence rates were stable from 1998 to 2005 (APC -5.9, $p=0.1$) and later increased by 6.7% per year ($p<0.001$). Intrahepatic ductal carcinoma incidence was increasing by 8.9% per year during all study period. The rise of incidence was observed in all age groups, however in age groups <50 and 70-79 years observed changes were not statistically significant. For mortality significant point of trend change was in 2001 detected – after stable mortality, rates started to increase by 2.4% per year.

Conclusions

Conclusions: Primary liver cancer incidence and mortality increased in both sexes in Lithuania. The rise of incidence was observed in both sexes and both main histology groups. Increasing incidence trend may be related to the prevalence of main risk factors (alcohol consumption, hepatitis B and C infections and diabetes).

ULTRASONOGRAPHY ASSISTED FOCUSED OPEN NECROSECTOMY (FON) IN THE MANAGEMENT OF NECROTISING PANCREATITIS

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Objectives

For a long time period conventional necrectomies were golden standard for the treatment of necrotic pancreatitis. However conventional approach is associated to high complication rate due to the aggressive and traumatic intervention that could be potentially avoided with a less traumatic method. In 2008 a new minimally invasive USS assisted method – focused open necrosectomy (FON) was introduced which in 2013 fully replaced conventional approach in our clinic.

The aim of this study is to describe our experience in the application of FON in the management of necrotising pancreatitis.

Materials and Methods

This was retrospective review which included patients with severe acute necrotizing pancreatitis who received conservative treatment in the early phase of the disease combined with minimally invasive treatment when indicated later, and FON during the late phase of treatment. All patients were treated at Surgical Departments of the Riga East University Hospital Gaiļezers from 2008 to 2020. Data were collected from patient's medical histories. Extent of necrosis, ASA class and sepsis were used to assess patients level of severity before surgery. For data analysis Microsoft excel and IBM SPSS Statistics were used.

Results

This research included 127 participants who underwent FON. 95 (74,8%) were males aged from 29 to 83 years. Mean age – 54,13 years (standard error 1,27). More than a half of patients had ASA class III and IV (65,3%). 48% (61) of patients had severe sepsis before surgery. Time of surgery was in a range from 25 min to 135 min, with a mean time of 64,68 min (Standard error – 2,096). 59,1% (75) didn't need reoperation. 9,4% (12) of patients had 1 reoperation, 18,9% (24) – 2 reoperations. 1 patient (0,8%) underwent overall 8 surgeries to perform complete necrosectomy.

Pancreatocutaneous fistula, intestinal fistula and bleeding were counted as complications related directly to surgery. 23,6% (30) of patients had at least one complication, 3,9% (5) patients had 2 complications. The Most common complication was pancreatocutaneous fistula – it formed in 11,8% (15) patients, second most common - intestinal fistula in 9,4% (12) patients. Bleeding was observed in 6,3% (8) patients.

Mean hospital stay – 45,8 days (range from 8 – 151 day), mean ICU stay – 15,8 days

(range from 1 – 120 days), however in 20,5% (26) ICU was not needed. Mortality rate in this study was 6,3% (8).

Conclusions

The use of FON is associated with small tissue traumatism, short length of surgery, shorter hospital and ICU stay, small amount of repeated surgeries, complication rate and mortality.

Given the above mentioned data this is safe and feasible method for necrosectomy in patients with acute necrotizing pancreatitis.

VIDEO-ASSISTED RETROPERITONEAL DEBRIDEMENT OF INFECTED NECROTIZING PANCREATITIS: THE FIRST EXPERIENCE OF P. STRADINS CLINICAL UNIVERSITY HOSPITAL

Sergejs Sapovalovs [1], **Janis Gardovskis** [1]

1. P. Sradiņa clinical university hospital

Objectives

The main objective of this article was to show the first experience in treating acute necrotizing infected pancreatitis using minimally invasive techniques in our hospital. The strategy chosen by our hospital includes the so-called step-up approach, combining radiological and surgical techniques.

Materials and Methods

Seven patients who underwent this procedure in Pauls Stradins Clinical University Hospital were selected and included in the study. A standardized strategy consisting of CT–guided puncture of necrotic collections, followed by implantation of a navigation drain was used in all cases. Afterwards a minimally invasive technique for draining necrotic collections – video assisted retroperitoneal debridement (VARD) – was performed. In total, 17 VARD operations were performed.

Results

An average of 3 operation per patient were required, which meets the standard of world practice. Four patients were discharged from the hospital without surgical complications but showing the development of pancreatogenic diabetes. One patient died due to a condition unrelated to the underlying disease. One patient died because of progression of the underlying disease, but not associated with surgical treatment. One patient was discharged and continues outpatient treatment.

Conclusions

The VARD technique is a minimally invasive, innovative technique in the treatment of acute necrotizing infected pancreatitis. With appropriate patient preparation and the use of a step-by-step approach, it is possible to achieve significant improvement in patient's condition, in comparison to a conventional or conservative approach.

New trends in surgery

COMPLEX RECONSTRUCTION OF TRACHEAL DEFECT WITH CHIMERIC LATERAL FEMORAL CONDYLE FREE FLAP

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1. Microsurgery Centre of Latvia, REUH, **2.** Gaiļezers, REUH, **3.** Oncology centre of Latvia, REUH

Objectives

Surgical treatment of malignancy or iatrogenic complications of the neck often involve tracheal resection, leaving large tracheal defects. Untreated tracheal defects are unacceptable for patients because they entail aesthetic dissatisfaction and a lower quality of life. The patient can neither produce a sound nor take a bath, and troublesome changing of a cannula is required. Although a large number of different procedures have been used for tracheal replacement, no ideal reconstruction has yet been established. The trachea is a unique and perfectly constructed organ, with rigid support, an epithelial lining, and the ability to clear secretions. The ideal components of the reconstructive tissue would include a lining, rigid support, and external resurfacing. Tracheal reconstruction still remains very challenging even for skilful and experienced reconstructive surgeon due to considerations mentioned above.

Materials and Methods

3 patients with tracheal and neck soft tissue defects underwent complex tracheal reconstruction. Two patients had oncological condition created tracheal defect and one patient had iatrogenic tracheal defect. Reconstructions of tracheal defect with vascularized lateral femoral condyle chimeric free flap were performed in all three cases.

Results

Performed flaps were taken well in all three cases. Wounds healed well in all three cases. All patients were successfully decannulated without dyspnoea. No stenosis of trachea was observed in all three cases.

Conclusions

Complex tracheal lesions are not necessarily inoperable. Tracheal defect reconstruction with vascularized lateral femoral condyle chimeric free flap shows promising results. With careful planning, these defects can be safely reconstructed with good functional outcomes.

ROBOTIC CHOLECYSTECTOMY USING SENHANCE PLATFORM IN KLAIPEDA UNIVERSITY HOSPITAL

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1. Klaipeda University Hospital, **2.** Klapeda University hospital, **3.** klaipeda University hospital

Objectives

In this retrospective study we report the first series of robotic cholecystectomies in Baltic countries.

Materials and Methods

From Nov 2018 to March 2021, 35 robotic cholecystectomies were performed in Klaipėda University Hospital using the Senhance robotic system. Patients were diagnosed with symptomatic gallstone disease and had no life-threatening co-morbidities. We retrospectively investigated patient demographics and pre-, peri- and postoperative data.

Results

Twenty one female and fourteen male patients were included in this study (n = 35). Mean age was 48 years (range 26–74); mean BMI was 26.1 kg/m^2 (range 20.5–37.7). Mean docking time was 14 min (range 6–27), and mean operative time was 81 min (range, 70–150). There were no conversions to standard laparoscopy or open surgery. There were no intra-operative complications. There was one post-operative bleeding from the gallbladder bed and subhepatic hematoma, successfully treated by laparoscopy.

Conclusions

We concluded that robotic cholecystectomy using Senhance platform is safe and feasible.

ROBOTIC INGUINAL HERNIA REPAIR USING SENHANCE PLATFORM IN KLAIPEDA UNIVERSITY HOSPITAL

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1. Klaipeda University Hospital, **2.** Klapeda University hospital, **3.** klaipeda University hospital

Objectives

Recently, it was demonstrated that robotic inguinal hernia repair is safe and feasible. However, robotic inguinal hernia repair was distinguished by lack of benefits for patient (high cost and prolonged operating time). Interestingly that all instruments of the newly available Senhance are resterilizable and standard trocars are used. Therefore, especially during the learning curve, it became feasible to perform smaller routine operations like robotic hernia repair.

Materials and Methods

From November 2018 to March 2020, a total of 26 robotic inguinal hernia repair were performed at Klaipėda University Hospital. Informed consent was obtained for the robotic inguinal hernia repair. We retrospectively reviewed demographic information, clinical presentation, operative records, postoperative complications and postoperative hospital stay. We prospectively collected the operating time, robotic arms docking time and console time in all robotic procedures.

Results

Twenty five men and one woman were operated on inguinal hernia from November 2018 to March 2021 using Senhance platform in Klaipeda university hospital. The mean age of the patients was 49 ± 10.0 years. The BMI of the patients was 23 kg/m2 (range 18.5 – 28.3 kg/m2). There were several patients with comorbidities in investigated group (diabetes mellitus (n = 1), hypertension (n = 5). The operation time of robotic inguinal hernia repair was 76.5 ± 13.1 min (docking time + console time + finishing and suturing time). The docking time and console time was 11 ± 5 min (7-21 min) and 37.4 ± 12.0 (25-80 min), respectively. There were no operative or postoperative complications. There were no conversions to laparoscopic or open surgery.

Conclusions

Robotic inguinal hernia repair was safe and feasible using Senhance robotic platform in our experience

SECONDARY ENDOSCOPIC RESECTIONS ALLOWS CURATIVE RESECTION FOR LOCALLY RECURRENT OR INCOMPLETELY RESECTED EARLY GASTROINTEESTINAL NEOPLASMS (EGIN).

Mr. MASKELIS ROMUALDAS [1]

1. Lithuanian National Cancer Institute

Objectives

To clarify the safety and efficacy of repeat endoscopic operations (secondary endoscopic resections – s-ER) for locally recurrent gastric cancer after incomplete endoscopic resections.

Materials and Methods

We comparing of all patients 2016 – 2018 years database who underwent EO at the National Cancer Institute with locally recurrent EGIN.

In recent years, endoscopic treatment of EGIN such as EMR and ESD have been reported to be as good as those of surgery. Endoscopic resections of EGIN are less invasive and provides early postoperative recovery compared with surgical operations and now it is recognized as the standard therapy for the EGIN with a low risk of lymph node metastasis. In non-curative resection, additional treatment should be considered according to the risks of residual tumor, local recurrence, and lymph node metastasis.

Results

The main answer after the endoscopic resections in EGIN cases is it positive horizontal or interminable margins after the endoscopic interventions as ESD or EMR.

At first, before performing the s-ER it is essential to determine the appropriate are to be resected, and chromoendoscopy (CE), magnifying endoscopy (ME) and magnifying endoscopy with narrow - band imaging (NBI) are currently used for this purpose. The s-ER for a locally recurrent tumor is difficult to perform due to severe fibrosis and ulcer formation, but last time we can found more and more published reports about s-ER, especially second ESD, for residual or locally recurrent EGIN.

The multivariate analysis in literature and our first data allows to expect favorable results in repeated endoscopic operations.

Conclusions

In case of no or very low risk of recurrence, additional endoscopic treatment or simple follow-up without additional surgery may be used as an alternative treatment . The results suggest that s-ESD may be technically feasible and favorable for local control of residual carcinoma.

Upper Gastrointestinal surgery

BILATERAL RETROMUSCULAR RECTUS SHEATH BLOCK CATHETERS USAGE FOR EARLY POSTOPERATIVE ANALGESIA AFTER LAPAROTOMIC GASTRECTOMY.

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Objectives

In early postoperative period, the occurrence of severe pain after open major upper GI surgery is a significant issue. The study was aimed to access the efficiency of rectus sheet block with continuous bupivacaine infusion catheters into retromuscular space in providing an effective pain relief, decreasing opioid consumption and enhancing postoperative recovery.

Aim. Continuous retromuscular rectus sheath infiltration of 0.125% bupivacaine through rectus sheath catheter after laparotomic gastrectomy provide effective postoperative analgesia, significantly reduce opioid consumption and facilitate bowel movement.

Materials and Methods

This prospective case-control cohort experimental study was conducted in Riga East University Hospital (Latvia). 39 patients with laparotomic gastrectomy were divided into two groups – 21 patients in the Block group and 18 patients in the Control group. Only in the Block group, retromuscular catheters in the m. rectus abdominis sheath were placed before fascia closure under the direct supervision of a surgeon on both sides of the incision.

After surgery patients in the Block group received continuous 0.125% (10-12 mg/h) bupivacaine infusion through rectus sheath catheters for 72 h in addition to fentanyl i/v infusion on postoperative day 0, and ketorolac or trimeperidine injection on postoperative day 1-2. Patients in the Control group received only fentanyl i/v infusion on postoperative day 0 and ketorolac or trimeperidine injection on postoperative day 1-2.

Pain intensity was assessed in both groups Visual Analog Scale (VAS) at 24, 48 and 72 hour intervals after surgery at rest and during movement. Postoperative complications, hospital stay, comorbidities, the time taken to start walking after the surgery, bowel movements (time until first stool) were all examined.

Results

The demographic profile of the 2 groups was comparable. Postoperative pain (VAS) at rest was significantly lower in the Block group at the time period 48 hours - median 20 vs. 40 ($p=0.006$) and 72 hours after surgery – median 10 vs. 30 ($p=0.01$). Pain on movement in the Block group was significantly lower in all measurements: at 24 hours ($p=0.006$), at 48 hours ($p<0.001$) and 72 hours postoperatively ($p<0.001$). Fentanyl requirement median range in the postoperative period was significantly lower in the Block group ($p=0.001$). Enteral nutrition, hospital stay postoperatively and the time taken to start actively walking was same in both

groups. There were no complications related to the rectus sheath catheter insertion and bupivacaine infusion. Postoperative pain (VAS) at rest was significantly lower in the Block group at the time period 48 hours - ($p=0.006$) and 72 hours after surgery – ($p=0.01$). Pain on movement in the Block group was significantly lower in all measurements. Enteral nutrition, hospital stay postoperatively and the time taken to start actively walking was same in both groups.

Conclusions

Continuous retromuscular rectus sheath infiltration of 0.125% bupivacaine after laparotomic gastrectomy provide effective postoperative analgesia in early postoperative period, significantly reduce opioid consumption and facilitate bowel movement.

COMPARISON OF SHORT-TERM PERIOPERATIVE OUTCOMES AMONG THE PATIENTS WITH STANDARD INDICATIONS FOR CYTOREDUCTIVE SURGERY WITH HIPEC AND PATIENTS UNDERGOING SURGERY WITH HIPEC FOR LOCALLY ADVANCED GASTRIC CANCER

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Objectives

Peritoneal carcinomatosis is a sign of dismal prognosis in case of many solid organ tumors. Stage III gastric cancer has a five-year survival of 10-15%, while occurrence of peritoneal carcinomatosis results in 6-9 months survival. Accumulating evidence show, that cytoreductive surgery with the hyperthermic intraperitoneal chemotherapy (HIPEC) improves the outcomes of such patients with acceptable morbidity and mortality. In this paper, we analyze the 1st year experience of surgical unit after the introduction of peritoneal carcinomatosis management and HIPEC program, and explore what new perspectives it opens in the management of locally advanced tumors.

Materials and Methods

Peritoneal carcinomatosis is a sign of dismal prognosis in case of many solid organ tumors. Stage III gastric cancer has a five-year survival of 10-15%, while occurrence of peritoneal carcinomatosis results in 6-9 months survival. Accumulating evidence show, that cytoreductive surgery with the hyperthermic intraperitoneal chemotherapy (HIPEC) improves the outcomes of such patients with acceptable morbidity and mortality. In this paper, we analyze the 1st year experience of surgical unit after the introduction of peritoneal carcinomatosis management and HIPEC program, and explore what new perspectives it opens in the management of locally advanced tumors.

Results

In total 22 patients had surgery with HIPEC: 11 patients in standard indication group (pseudomyxoma peritonei, mesothelioma, primary peritoneal serous carcinoma, recurrent ovarian cancer, and recurrent colorectal cancer) and 11 patients in locally advanced gastric cancer group.

Standard group: 90% female, mean age 57 (46-71), mean BMI 27 (19-38), ECOG 1, ASA 3, 65% with comorbidities, PCI 16 (1-37), 63% ascites. All patients had open surgery: 80% second look, 90% curative HIPEC. In 45% cases extended surgery with multivisceral resections. Median OR time 6.8h, LOS 11 days, ICU 2 patients (3 days), significant morbidity 18%, 1 death 60 days postoperatively (PE, ischemic stroke).

Gastric cancer group: 55% female, mean age 47 (26-69), mean BMI 22 (18-26), ECOG 0, ASA 3, 82% no known comorbidities, PCI 3 (0-11), 63% had no carcinomatosis outside

stomach), stage 3b-4 91% (10), 18% ascites. Six (55%) out of 11 patients laparoscopic surgery. Primary surgery in 10 cases (91%), 1 (9%) second look for local recurrence: 55% prophylactic, 36% curative, 9% palliative HIPEC. In 45% cases extended surgery with multivisceral resections. Median OR time 5.7h, LOS 10 days, ICU 0 patients, no significant morbidity.

Conclusions

Peritoneal carcinomatosis management and HIPEC program could be safely introduced in the surgical unit with an established surgical oncology expertise and multidisciplinary team. It is likely to increase overall turnover of patients requiring complex, often multivisceral surgery without significantly affecting established fast track surgery and postoperative recovery routines, perioperative morbidity, mortality, hospital stay. It opens possibilities for new combined treatment strategies, i.e. laparoscopic gastrectomy with minimally invasive prophylactic HIPEC for locally advanced gastric cancer. However, the effects on disease free survival, overall survival and quality of life need to be carefully assessed for this group of patients before recommending it as a standard treatment.

HISTOLOGIC LYMPH NODES REGRESSION AFTER PREOPERATIVE CHEMOTHERAPY AS PROGNOSTIC FACTOR IN NON-METASTATIC ADVANCED GASTRIC ADENOCARCINOMA

Augustinas Bausys [1], **Veslava Senina** [2], **Martynas Luksta** [3], **Bernardas Bausys** [1], **Klaudija Bickaite** [1], **Andrius Rybakovas** [4], **Arvydas Laurinavicius** [2], **Tomas Poskus** [4], **Dmitrij Seinin** [2], **Rimantas Bausys** [5], **Kestutis Strupas** [3]

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Objectives

The study aims to evaluate the lymph node (LN) response to preoperative chemotherapy and its impact on long-term outcomes in advanced gastric cancer (AGC).

Materials and Methods

Histological specimens retrieved at gastrectomy from patients who received preoperative chemotherapy were evaluated. LN regression was graded by the adapted tumor regression grading system proposed by Becker. Patients were classified as node-negative (lnNEG) in the case of all negative LN without evidence of previous tumor involvement. Patients with LN metastasis were classified as nodal responders (lnR) in case of a regression score 1a-2 was detected in the LN. Nodal non-responders (lnNR) had a regression score of 3 in all of the metastatic nodes. Survival was compared using Kaplan-Meier and Cox regression analysis.

Results

Among 87 patients included in the final analysis 29.9 % were lnNEG, 21.8 % were lnR and 48.3 % were lnNR. Kaplan-Meier curves showed a survival benefit for lnR over lnNR ($p=0.03$), while the survival of lnR and lnNEG patients was similar. Cox regression confirmed nodal response to be associated with decreased odds for death in univariate (HR: 0.33; 95 % CI 0.11-0.96, $p=0.04$) and multivariable (HR 0.37; 95 CI% 0.14-0.99, $p=0.04$) analysis.

Conclusions

Histologic regression of LN metastasis after preoperative chemotherapy predicts the increased survival of patients with non-metastatic resectable AGC.

JEJUNUM EPITHELIOID ANGIOSARCOMA IN PATIENT WITH HEREDITARY HEMORRHAGIC TELANGIECTASIA.

Jevgenijs Demicevs [1], **Aleksejs Kaminskis** [1], **Harals Plaudis** [1]

1. Riga East Clinical university hospital

Introduction:

Angiosarcoma arises from vascular endothelial and represents less than 1% of all soft-tissue sarcomas. Angiosarcoma of gastrointestinal tract is very rare and is described mostly in individual case reports or small case series. Hereditary hemorrhagic telangiectasia (HHT) is a rare autosomal dominant disorder that causes vascular dysplasia by affecting blood vessels.

Case report:

A 74-year-old female was admitted to emergency department in November 2020 due to vertigo, increasing weakness, fatigue, palpitations that increased with physical activities. Patient had medical history of primary arterial hypertension grade II, chronic heart failure II functional class, myocardial infarction with percutaneous coronary intervention with drug eluting stent in May 2020, iron deficiency anemia for two years with not known site of blood loss. Patient was using clopidogrel, omeprazole, ramipril and ivabradine as daily medications.

On admission hypochromic microcytic anemia was observed with hemoglobin level 5,79 g/dL. She was admitted to gastroenterology department for blood component transfusion and additional investigation. Patient had positive fecal occult blood test. Esophagogastroduodenoscopy and colonoscopy failed to reveal site of blood loss. Computed tomography with contrast media revealed hypervascular tumor in proximal jejunum, with no local or distant metastases. After repeated hemotransfusions patients was considered for open surgery. After laparotomy and revision of abdominal cavity exophytic tumor was found in proximal jejunum, approximately 5 cm from Treitz ligament. Tumor was mobile and not connected to surrounding tissues. No specific lymph nodes were observed in mesentery. Mobilization of lower horizontal part of duodenum was performed and jejunum segment was resected (5 cm proximally and 20 cm distally from the tumor) including mesenteric lymph nodes, end-to-side anastomosis was performed. Pathohistological examination of resected bowel revealed epithelioid angiosarcoma. Bowel walls around tumor had signs of hereditary hemorrhagic telangiectasia such as angiomatosis, cavernous hemangiomas, and varicose veins in submucosa. Tumor was classified as p T 2 N 0 M 0 L-V+R 0 G 3

Postoperative course was uneventful, and she was discharged from the hospital on 5th postoperative day.

Conclusion

Connection between hereditary hemorrhagic telangiectasia of gastrointestinal tract and angiosarcoma is not described in scientific literature. Combination of hereditary hemorrhagic telangiectasia isolated lesion in small intestine and angiosarcoma arising from can be one of the causes of gastrointestinal tract bleeding.

MANAGEMENT OF DUODENAL STUMP FISTULA AFTER GASTRIC RESECTION – LATE AND SEVERE CASCADE OF COMPLICATIONS

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1. Liepaja regional hospital

Objectives:

Duodenal stump fistula (DSF) remains a serious and life-threatening complication after gastric resection or gastrectomy. DSF is related to high mortality (16–20%) and morbidity (75%) rates. DSF-related morbidity always leads to longer hospitalization time due to generalised or local complications such as wound infections, intra-abdominal abscesses, severe malnutrition, fluid and electrolyte disorders, diffuse peritonitis etc.

Materials and Methods:

Case: A 59 year old male presented with dysuria and painful lower abdomen, hyperthermia. Emergency care unit examination showed acute abdomen with positive peritoneal signs. Patient had had gastric resection, D2 lymph dissection due to malignancy three months prior.

Results

Eventually a subdiaphragmatic abscess was found during exploratory laparotomy, which was then drained with three silicone drains. POD 5 relaparotomy revealed duodenal stump necrosis with pancreatic necrotic substance and a.colica dexter thrombosis, which lead to right hemicolectomy with ileostomy. Duodenal stump fistula drained with foley catheter, which later spontaneously closed.

Conclusions

DSF is a rare but potentially lethal complication after gastrectomy or gastric resection due to gastric cancer. Early DSF diagnosis is crucial in reducing DSF-related morbidity and mortality. Endoscopic or percutaneous treatments are the first choice. Surgery becomes mandatory in a rapidly deteriorating patient, with duodenostomy being the most effective surgical procedure.

OUTCOMES OF USING NEW BIOSYNTHETIC PHASIX MESH IN LARGE HIATAL HERNIA REPAIR SURGERY

Katrīna Deja Mārtinsone [1], **Igors Ivanovs** [1]

1. Riga East University Hospital, University of Latvia

Objectives

Since patients with large and symptomatic hiatal hernias require surgical treatment for gastroesophageal reflux symptom release and better quality of life, therefore this problem is of an outstanding importance. The research regarding hiatal hernia repair surgeries using a new slowly resorbable biosynthetic mesh Phasix is still scarce.

The current study aimed to compare gastroesophageal reflux disease symptoms before and after hiatal hernia repair surgery using GERD-Health Related Quality of Life Questionnaire (GERD-HRQL) for patients in whom hernia repair operation was done using a new slowly resorbable biosynthetic mesh Phasix.

Materials and Methods

Altogether 10 patients were enrolled in the study and were treated surgically for their hiatal hernias using a new slowly resorbable biosynthetic mesh Phasix. Surgeries were performed from 2018 to 2020 in Riga East University Hospital.

Statistical analysis was performed using IBM SPSS Statistics 23.

Results

Two of all patients were male, eight were female. Age distribution was from 42 years of age to 81 years of age (median years of age 69; Q155, Q376). One patient had hiatal hernia I, seven patients had hiatal hernia III and two patients had hiatal hernia IV. Eight hiatal hernia surgeries using Phasix mesh were done laparoscopically, whereas two were done using upper midline laparotomy incision. For all patients, fundoplication was done modo Toupet. Most patients before surgery had noticeable symptoms or symptoms that were incapacitating them in their daily activities with a median score of 3.00 (Q1 3.00; Q3 4.00) and after surgery with no or minimal symptoms with a median score 1.00 (Q10.00; Q32.00). The total median score of the questionnaire before surgery was 29.50 (Q1 22.00; Q3 42.75) and after surgery 6.50 (Q10.00; Q3 11,25). Median score of regurgitation symptoms before surgery was 13.50 (Q1 8.75; Q3 21.25) and after 0.00 (Q10.00; Q33.25). All patients after surgery were satisfied with their present condition, but before surgery one patient had a neutral opinion, and all the others were dissatisfied.

Conclusions

The approach of using slowly resorbable biosynthetic mesh Phasix in hiatal hernia repair surgery proved to be a sufficient method in improving patients' GERD symptoms and can be used in further surgeries.

SHORT AND LONG-TERM OUTCOMES IN PATIENTS WITH GASTRIC STUMP CANCER

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Objectives

We aimed to clarify the differences between regular gastric cancer and gastric stump carcinoma (GSC) that has developed in gastric stump 5 years following surgical treatment. We present a single institution 10-year experience of the patients with GSC.

Materials and Methods

Medical records of 41 patient cohort with GSC who underwent surgery National Cancer Institute (NCI) between January 2005 and December 2014 were analyzed prospectively. These patients were compared with 82 cases of primary gastric carcinoma. Demographic, clinicopathological characteristics, surgical treatment and short and long-term results were evaluated and compared between these two groups. This group was matched by sex, age, cancer stage with patients who underwent primary resection for cancer.

Results

29 of GSC patients were males (70.7%) and 12 females (29.3%). Mean age was 68.5 years (SD±6.983, from 49 till 80). Primary distal gastric resection was made due to: gastric peptic ulcer in 27 (65.85%) patients, other medical conditions included stomach carcinoma - 10 (24.39%), other – four (9.76%). Average interval between primal resection and GSC diagnosis was 24.4 years (SD±12.95, from 5 till 50). There were no significant differences after we compared odds ratio for survival and complications. There were no significant differences in 1 and 5 years survival groups.

Conclusions

Case matched study revealed no significant differences among GSC and primary gastric cancer course.

SINGLE ANASTOMOSIS PLICATION ILEAL (SAPI) BYPASS IN THE TREATMENT OF OBESITY – 1-YEAR RESULTS

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Objectives

Laparoscopic single anastomosis plication ileal (SAPI) bypass is a novel bariatric procedure. Few studies have presented early or intermediate results. The aim of this prospective study was to investigate early results after SAPI Bypass.

Materials and Methods

Between May 2019 and March 2020, 47 patients underwent SAPI bipartition (laparoscopic gastric greater curvature plication and handsewn gastroileal anastomosis 300 cm from caecum) and were followed up to 1 year after operation. Demographics, comorbidities, complications, and percentage of excess body mass index loss (%EBMIL) were analyzed.

Results

Forty-two women and 5 men with an average age of 45.8 ± 11.5 years and preoperative BMI of 41.9 ± 4.5 underwent SAPI Bypass. Average operation time was 99.3 ± 18.8 min. Fifteen patients had additional gastrofundoplication and 7 had only cruroplasty. Average hospital stays 2.5 ± 0.9 days. Postoperative complications rate - 4.3 % (2 patients), bleeding from gastroileal anastomosis, treated conservatively. Follow-up rate was 93.6 % after 1 year. Average %EBMIL after 1 month was 26.15 ± 9.11, 56.89 ± 16.54 after 6 months, and 63.81 ± 22.9 after 1 year. Preoperatively GERD was present in 44.7 % of patients. Prevalence of GERD 1 year after operation was 23.4 %. Remission rate of type 2 diabetes mellitus and hypertension were 54.5 % and 62.5 %, respectively.

Conclusions

Early results after SAPI Bypass is comparable to the results achieved by other weight loss surgery. Long-term follow-up data are needed to define the role of SAPI Bypass in the treatment of morbid obesity.

THE EFFECT OF GASTRIC PLICATION ON OBESITY AND DIABETES MELLITUS TYPE 2: A SYSTEMATIC REVIEW AND META-ANALYSIS

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1. Department of Surgery, Medical Academy, Lithuanian University of Health Sciences

Objectives

All the bariatric surgeries evolved greatly over the past decades and laparoscopic greater curvature plication (LGCP) is one of the quite recently introduced techniques lacking systematic evaluation. Thus the aim of this study was to compare and summarize the current data in the literature in regards to the effect of gastric plication on obesity and diabetes mellitus type 2.

Materials and Methods

The systematic review and meta-analysis was performed according to the PRISMA guidelines and registered at PROSPERO under the registration number: CRD42018114314.The literature in English and German was searched using the MEDLINE (PubMed) and BJS databases for studies published in the last 10 years. A meta-analysis was performed focusing on the effects of this operation of weight loss, glycaemia control and improvement of comorbidities.

Results

Mean preoperative BMI ranged from 34.42 to 46.3 kg/m2. Most of the patients were female. The operation time was in a range from 50 to 192.23 minutes. Mean follow up was from one month till 12 years, with most studies having a follow up of less than 2 years. The postoperative BMI ranged from 28.59 -38, with reported excess weight loss (EWL%) ranging from 20-70%. HbA1c values decreased to up to 5.1% after surgery, ranging from 5.1 -7.5%.

Conclusions

Despite the quality of most of the included studies being low, present meta-analysis revealed that, in the short term, gastric plication is an effective measure for weight loss, while the effect on diabetes mellitus type 2 is statistically not significant.

TIME INTERVAL BETWEEN NEOADJUVANT CHEMOTHERAPY AND GASTRECTOMY IMPACT ON SHORT- AND LONG-TERM OUTCOMES IN PATIENTS WITH ADVANCED GASTRIC CANCER

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Objectives

The optimal time between neoadjuvant chemotherapy (NAC) and gastrectomy for gastric cancer (GC) remains unknown. This study aimed to investigate the association between time-to-surgery (TTS) interval and major pathological response (mPR).

Materials and Methods

A total of 280 consecutive GC patients undergoing NAC followed by gastrectomy between 2014 and 2018 were retrospectively analyzed by the use of prospectively collected databases from 3 major GC treatment centers in Lithuania and Estonia. Based on TTS they were grouped into 3 interval categories: Early surgery group (ESG): ≤ 30 days (n=70); Standard surgery group (SSG): 31-43 days (n=138); Delayed surgery group (DSG): ≥44 days (n=72). The primary outcome of the study was mPR rates. Secondary end-points were: postoperative morbidity, mortality, oncological safety, measured as the number of resected lymph nodes and radicality, and long-term outcomes.

Results

The mPR rate in the ESG (32.9 %) was significantly higher compared to SSG (20.3 %) and DSG (16.7 %) (p=0.047). Further, after adjusting for patient, tumor, and treatment characteristics, the odds to achieve mPR were 2-fold higher for patients undergoing early surgery (OR (95% CI): 2.09 (1.01-4.34), p=0.047). Overall morbidity, severe complications, 30 days mortality, R0 resection, and retrieval of at least 15 lymph nodes rates were similar across the study groups. As well, the long-term outcomes were not different between the study groups.

Conclusions

This study suggests that an interval of <30 days between the end of NAC and gastrectomy is associated with higher mPR rates, the same oncological safety of surgery, and similar morbidity and mortality.

UPPER GASTROINTESTINAL QUALITY OF LIFE BEFORE AND AFTER LAPAROSCOPIC HELLER MYOTOMY WITH ANTERIOR FUNDOPLICATION.

Anna Marija Lescinska [1], **Igors Ivanovs** [1]

1. Riga East University Hospital; University of Latvia

Objectives

The aim of the study is to access the short-term efficacy and quality of life (QoL) of patients with achalasia after laparoscopic Heller myotomy and Dor fundoplication.

Materials and Methods

Prospective case-controlled study was done in Riga East University Hospital (Latvia). Fifteen achalasia patients underwent laparoscopic Heller myotomy and Dor fundoplication from July 2016 to June 2020. The data on clinical evaluation and QoL before therapy and 6 months after operation was collected and analyzed. Eckard clinical scoring system and Gastrointestinal Quality of Life Index (GIQLI) scores were used. A standardized quality of life assessment questionnaire which contained 36 questions with 5 - point Lickert scale (0- 1- 2- 3- 4), each with a score of 0 - 4 points was used. Calculation of the score: most desirable option - 4 points, least desirable option - 0 points; GIQLI score: sum of the points. Global score: 0 - 144 points; higher score means better QoL; normal = 125 points.

Results

All the fifteen patients underwent laparoscopic Heller myotomy and anterior fundoplication successfully. One patient was excluded from the study because of mortality, which was not due to the operation. By comparing the data of the preoperative and 6 months postoperative period after Heller myotomy, we found that the mean Eckardt score decreased from 2,125 to 0,285 ($p<0,05$) and postoperative QoL scores were higher than those of preoperative. There were no complications. 10 out of 15 patients noted major improvement in emotional and social factors such as coping with stress, nervousness and managing daily activities. 60% remarked not only total absence of gastrointestinal symptoms, but also improvement in physical factors. 53% had 6 months follow up GIQLI scores more than two times higher than those of preoperative. All patients had normal or above normal GIQLI score (range: 127 – 139). None of the patients had the intensity of any of the most common symptoms of achalasia more than mild.

Conclusions

Laparoscopic Heller myotomy with Dor fundoplication is safe and effective method for treating achalasia in the short-term, it can relieve clinic symptoms as well as improve patients' QoL.

Miscellaneous

15 YEARS OF TREATMENT OF THORACIC OUTLET SYNDROME: AN EXPERIENCE OF SINGLE INSTITUTION

Martins Kapickis [1], **Uldis Krustins** [1], **Iveta Beinarovica** [1]

1. Centre of Microsurgery of Latvia

Objectives

Thoracic outlet syndrome (TOS) is a complex pathology that refers to the compression of the neurovascular structures traversing the superior aperture of the chest. Thoracic outlet syndrome is one of the most misdiagnosed and controversial conditions. This report highlights changes in treatment approaches and results during the last 15 years.

Materials and Methods

Materials and Methods: Since 2006 we surgically treated 70 patients with symptoms of neurogenic and combined thoracic outlet syndrome. Our diagnostic and treatment approach to these patients has changed substantially during these 15 years. In contrast to our earlier practice, most patients today are treated by the supraclavicular approach. We have added pectoralis minor myotomy to our surgical approach as well. The ultrasound-guided scalene block is one important diagnostic and prognostic tool. Our ergotherapy protocol includes at least 6 months of nerve stretch and floss exercises as opposed to earlier protocols.

Results

Results: in 2007 we reported that 66 % of the patients improved. In 2013, we reported that 73% of patients had overall improvement. Our current cumulative data, which shall be presented, are much less optimistic.

Conclusions

Conclusions: During 15 years period, surgical management of TOS patients, preoperative evaluation as well as conservative treatment has changed substantially. Our surgical approach is leaning towards less extensive dissection and may include scalenectomy alone.

A QUESTIONNAIRE-BASED CROSS-SECTIONAL STUDY: ADAPTATION AND VALIDATION OF CAROLINAS COMFORT SCALE LITHUANIAN VERSION

Audrius Parseliunas [1], **Saulius Paskauskas** [1], **Jovydas Vaitekunas** [1]

1. Lithuanian University of Health Sciences

Objectives

Recurrence rates following hernia surgery became low and tolerable after introduction of meshes. Quality of life (QoL) assessment has become one of the most important outcomes in hernia surgery. The Carolinas Comfort Scale (CCS) is a disease specific QoL questionnaire for patients who underwent hernia repair with mesh. It is translated into more than 20 languages and used in more than 40 countries. The aim of presented questionnaire-based cross-sectional study was to create a Lithuanian version of CCS, adapt and validate it for patients who have undergone inguinal hernia repair.

Materials and Methods

A Lithuanian version of CCS was created by translating the original in accordance to guidelines. A Lithuanian version of CCS as well as SF-36 was provided to the patients who underwent inguinal hernia repair using mesh at 1 week and 4 weeks following surgery. The statistical analysis was performed to assess the main validation characteristics of CCS. A significance level of $p < 0.05$ was used.

Results

A total of 168 patients participated in this study. The response rate was 97.6% (164/168) and 97.0% (163/168), “full complete” rate was (150/164) 91.5 % and (138/163) 84.7% of participants at 1 week and 4 weeks respectively. The CCS showed an excellent internal consistency, with a Cronbach’s α coefficient of 0.954 and no significant changes were observed when different variables were deleted. In the reliability (test- retest) analysis correlation coefficients between the two separate administrations ranged from 0.363 to 0.585, showing sufficient coherence despite fast dynamics of the rehabilitation process. In the construct validity analysis, all correlations between the different domains of the SF-36 and the total CCS score were significant. Strongest correlations were found in the domains bodily pain and physical functioning (-0.646 and -0.592) and the weakest- in mental health (-0.247) respectively. The mean scores of all CCS domains and total score for satisfied patients were significant lower ($p<0.001$) than those for dissatisfied patients.

Conclusions

The results of the presented study suggest that a Lithuanian version of CCS is a reliable and valid for quality of life assessment after inguinal hernia repair with mesh. We suggest to use CCS as a standardized tool for the evaluation and comparison of QoL outcomes following inguinal hernia surgery in daily clinical and research practice between surgery centers in local and international context.

ARTHROSCOPICALLY ASSISTED TREATMENT OF DISTAL RADIUS FRACTURES: 10 YEAR EXPERIENCE OF THE SINGLE CENTRE.

Mr. Uldis Krustins [1], **Mr. Janis Krustins** [1], **Mr. Vadims Nefjodovs** [1], **Mrs. Diana Bringina** [1], **Mrs. Aija Jaudzema** [2]

1. Microsurgery Centre Of Latvia, **2.** Riga East University hospital

Objectives

The increasing incidence of distal radial fractures (DRF) may be attributed to an ageing population as well as the growing participation in outdoor pursuits of the younger population which leads to high velocity accidents. From 32% to 44% of these fractures nowadays are comminuted articular fractures.

This report demonstrates the results of two long term studies carried out in our unit. The first study compared results of the treatment of the articular distal radius fractures with volar locking plates (VLP) with and without using artrhroscopy. The second study compared results of the DRF treatment with two different arthroscopically assisted treatment methods.

Materials and Methods

The first was a retrospective study which included 70 patients with intra-articular DRFs treated using an arthroscopically assisted approach with volar locking plates or using conventional method of fixation. The second was a prospective cohort study that included 63 patients with intra-articular DRFs who were treated using an arthroscopically assisted approach with either VLP or external fixator (EF) and K-wires.

Postoperative analysis was carried out using X-ray assessment, clinical data, patient-rated wrist evaluation (PRWE) score, Gartland and Werley score, Modern Activity Subjective Survey of 2007 (MASS07) score, range of motion, grip, pinch and tripod pinch assessment at 1, 3, 6 and 12 months postoperatively. Long-term results of the studies were assessed 3 to 5 years after the primary surgeries. The first visit to the same hand therapist was scheduled for all patients 2 weeks after the surgery. All patients were instructed to perform additional exercises at

home for a minimum of 30 minutes per day and visit a hand therapist on a weekly basis.

Results

Average time of surgeries in the arthroscopic group was longer, but incidence of additional soft tissue injuries or joint surface incongruities and consequent surgical manipulations was signifficantly higher. The clinical dynamometric and goniometric parameters improved evenly over the period of 12 months in both studies. Patients treated with arthroscopy had slightly lower PRWE and MASS07 scores and higher Gartland & Werley scores in long-term period. Post-operative complication rate was higher in the "no arthroscopy" group and in the arthroscopy group with external fixation and K-wires compared to arthroscopy group and volar locking plates

Conclusions

Arthroscopic evaluation allows to determine associated soft tissue lesions and to find malposition of the intraarticular fracture fragments which cannot be determined fluoroscopically and creates preconditions for better functional results.

Furthermore, patients in the ”no arthroscopy” group had more arthritic or sclerotic changes of the distal radius joint surface in the long-term period.

The outcomes of the second study do not establish absolute evidence for preference of one fixation method over the other. There was an increased complication rate with the external fixator and K-wire method. In our arms, arthroscopically controlled fixation of the articular distal radius fractures with volar locking plates is the method of the choice, excluding situations when plate fixation technically is impossible.

CARPAL TUNNEL SYNDROME

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1. The Microsurgery Centre

Objectives

This paper summarises our knowledge and experience in the treatment of carpal tunnel syndrome. We know that carpal tunnel syndrome (CTS) is the most common compressive neuropathy in the upper extremity. Accurate diagnostic criteria, the selection of treatment strategies and outcomes data have been inconsistent despite the prevalence of the condition. There is evidence that local corticosteroid injection is safe and effective for many patients, thereby avoiding or deferring surgical decompression. Nerve conduction studies should be performed in patients presenting with possible carpal tunnel syndrome to assist diagnosis, and may need to be repeated at intervals in those managed conservatively. Doctors use both non-surgical and surgical treatments when addressing CTS. Non-surgical treatments include wrist splinting, change of working position, medications.

Materials and Methods

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Results

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Conclusions

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COMPARISON OF LICHTENSTEIN INGUINAL HERNIOPLASTY AND TRANSABDOMINAL PREPERITONEAL HERNIA REPAIR WITH SELF-GRIPPING MESH BY LONG-TERM OUTCOMES AND QUALITY OF LIFE.

Glebs Grinovs [1], **Igors Ivanovs** [2]

1. University of Latvia, **2.** Riga East University Hospital, University of Latvia

Objectives

The aim of this study was to compare long term (3 years postoperatively) outcomes and quality of life after Lichtenstein hernioplasty and Transabdominal preperitoneal inguinal hernioplasty with self-gripping mesh.

Materials and Methods

A prospective case control study was performed at Riga East University hospital (Latvia) 2016-2020. One hundred and six patients were allocated into two groups: 51 patients in the LICHT group and 55 patients in the TAPP group. In the LICHT group Lichtenstein hernioplasty with polypropylene mesh was performed, in the TAPP group Transabdominal preperitoneal hernioplasty with polypropylene self-fixating Progrip mesh without additional fixation was done. Follow-up was done at 3 years after surgery by phone and if necessary, by visit. Complications, discomfort, pain, recurrence and satisfaction with the operation were assessed.

Results

Ultimately, 99 patients (48 in the Open group and 51 in the TAPP group) were included in the study, representing 93% of the selected patients during the study period. Both groups were comparable by body mass index, gender, hernia size. None of patients had postoperative complications or recurrence in both groups. Both groups were comparable in terms of pain in rest: LICHT 3(6.2%) patients vs. TAPP 0(0%) (p=0.110) and pain on movement LICHT 5 (10.4%) vs. TAPP 5(9.8%) (p=0.310). Significantly more patients had discomfort during physical activity in LICHT group 18(37.5%) as compared to TAPP group 7(13.7%) (p=0.007). Significantly more patients had sensitivity disorders in operation area in LICHT group 5(10.4%) vs. TAPP 0(0%) (p=0.024). Maximal aesthetic satisfaction (10 points of 10 possible) with the operation was higher in TAPP group 43(84.3%) patients as compared to LICHT group 30(62.5%) patients (p=0.002). Maximal overall satisfaction with the operation also was significantly higher in TAPP group 44(86.3%) patients vs. 26(54.2%) patients in LICHT group(p=0.003).

Conclusions

Both Lichtenstein and TAPP inguinal hernioplasty has comparable long-term results in terms of complication, recurrency rate and pain in rest. Patients after TAPP have less discomfort

during movement and less daily physical activity restriction. Satisfaction with the operation is higher after TAPP hernioplasty as compared to Lichtenstein hernioplasty.

DIVERSE GASTRIC AND OVARIAN CANCER CELL RESPONSE TO HYPETHERMIC CHEMOTHERAPY TREATMENT IN EXPERIMENTAL SETTING

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Objectives

Advanced gastric and ovarian neoplasms reduce life expectancy and deteriorate the quality of life. Hyperthermic intraperitoneal chemotherapy (HIPEC) potentially could improve survival; however, its effectiveness is highly variable and dependent on the tumor type. Number of clinical studies have been performed to investigate the results of HIPEC treatment, but there is a shortage of in vitro and translational studies that could give more insights into patient selection as well as technical aspects of the procedure. The aim of this study is to compare gastric and ovarian cancer cell response to hyperthermia and cisplatin treatment in experimental model.

Materials and Methods

OVCAR-3 (ovarian cancer) and AGS (gastric cancer) cells were exposed to cisplatin alone or combining with various temperature regimens (37 0C to 45 0C). Treatment lasted for one hour. To evaluate cell viability, MTT metabolic activity assay was used. Mass spectrometry was used to determine intracellular cisplatin concentration. Flow cytometry analyzed cellular apoptosis. Isobolograms were used to identify the relation of combined cisplatin and hyperthermia treatment.

Results

Hyperthermia increased intracellular cisplatin concentration in AGS cells, while in OVCAR-3 no significant change was observed. Increasing temperature reduced viability of cisplatin treated cells. At 41 0C it dropped by 8 % and 48 % in AGS and OVCAR-3 cells correspondingly. Interestingly, at 42 0C viability activation peaks were observed. As compared to 41 0C, AGS viability was increased by 47 % and OVCAR-3 by 23 %. Higher temperatures constantly decreased viability rates in both cell lines. Isobolograms showed antagonistic hyperthermia and temperature effect to both cell lines. For AGS, cisplatin caused an increase of apoptosis rate by 1.9-fold in hyperthermia only. No significant change was observed in normothermia. Cisplatin treatment increased OVCAR-3 apoptosis rates in normothermia and hyperthermia, by 7.2-fold and 6-fold.

Conclusions

Different cell lines react inconsistently to simulated HIPEC treatment. Cisplatin concentration and temperature regimen should be considered before treating gastric or ovarian cancer cells in particular.

FULL THICKNESS ABDOMINAL WALL RECONSTRUCTION WITH INNERVATED TENSOR FASCIA LATA MYOCUTANEUS FLAP: A CASE REPORT

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Introduction. Full thickness abdominal wall defects present many challenges to the surgeon. Many defects can be closed with local tissues and a new set of complexity arises when defects are larger. When there is large midline defect and component separation is not feasible or rectus abdominis muscle with its fascia is not available free flap reconstruction is necessary. In this case report authors present a patient where innervated free tensor fascia lata (TFL) myocutaneus flap is used for repair of full thickness abdominal wall defect.

Case report. 41 year old presented to outpatient clinic with large central abdominal wall defect and hernia. Abdominal contents were covered only by split thickness skin graft. Previously 4 years ago patient had suffered multiple stabbed wounds. Subsequently infection and abdominal compartment syndrome had developed. Multiple surgeries with debridement and negative pressure wound therapy with split thickness skin graft was utilized to close abdominal cavity.

Innervated TFL flap was chosen because of reliable anatomy and possibility to harvest additional iliotibial band for reinforcement of abdominal wall on top of surgical mesh. After debridement and removal of split thickness skin that was closely attached to intestinal wall 15 x 20 cm defect was apparent. Synthetic mesh was used to reapproximate abdominal fascia and provide mechanical support. TFL flap and iliotibial band was based on ascending vessels from lateral circumflex femoral artery. Also motor nerve was meticulously dissected and included in flap. For recipient vessels right side deep inferior epigastric artery and two veins was chosen. One of remaining rectus abdominis motor nerves was also dissected and anastomosed with TFL motor nerve. Donor site was closed with split thickness skin graft. All wounds healed uneventfully. During post-operative period abdominal bandage for 6 weeks and then additional 3 months during exercise was applied. After one year follow up clinically evident movement of TFL muscle is present when patient contracts rectus abdominis muscle. No hernia is apparent, and patient is pleased with result functionally and aesthetically.

Conclusion. TFL myocutaneus flap can be successfully used for reconstruction of full thickness abdominal defects. Additional innervation of flap prevents muscle atrophy and possibly improves structural integrity that might lessen risk for hernia formation.

GIANT INCISIONAL HERNIA OF THE ABDOMINAL REGION

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Incisional hernias are one of the most common complications after major abdominal surgery and their repair is a common surgical procedure with its challenges [1, 2]. The rate of incisional hernias occurrence is highly variable depending on a variety of surgical and patient factors and has been quoted to be between 5% and 20%. Risk factors for incisional hernia's development include patient factors such as increasing age, obesity, diabetes, postoperative wound infections and laparotomies [1,3]. Surgical repair approach depends on the size of the hernia, surgeon's experience, patient's comorbidities. For giant incisional hernias it is recommended to perform open hernioplasty using mesh in sublay position technique, as it is shown to result in the lowest recurrence rates [1].

The main reason for writing this case report is the size of this giant hernia and the complexity of surgery, which leads us to share our experience with fellow colleagues.

Results: A 58-year-old man was presented at our hospital with an incisional hernia in the abdominal region. Patient underwent open pancreatectomy two years ago. Hence the incisional hernia tended to increase in size a few months after the previous surgery. This led to diverse side effects, such as difficulty in breathing, polyuria, decrease in physical activity. Furthermore, severe psychological damage was exposed, such as embarrassment, fear of public exposure. Moreover, various physical activities related to the expansion of hernia led to skin stretching, which resulted in chronic skin wounds and. Upon physical examination, the hernia had a smooth surface, the center of the hernia contained an open wound with encompassing swelling, there were some dilated veins around the wound, additionally the hernia sac was about 22 cm in diameter. Abdominal CT scan displayed that the hernia is incarcerated and the sac protrudes beyond the abdominal wall trapping both large and small intestines. Consequently intestines were a few centimetres away from breaking outside of the body. An open hernioplasty was performed, using a two-layer 20x30 cm mesh and the sublay technique. An incision of the middle-upper laparotomy was made to the hernial sac (15x15cm). It has been distributed and removed, the peritoneal cavity was revised and there were no signs of pathology. Mesh was fixed to the inner abdominal wall along its perimeter by a continuous polypropylene thread. The abdominal cavity was sutured by fixing the rectus abdominis muscle to the mesh surface and then suturing the subcutaneous layer and skin with

continuous adaptive sutures. The subcutaneous drainage was performed with two drains.

The
patient recovered completely and no signs of recurrence were noticed after the surgery.
Conclusions: Incisional hernias are one of the most common complications after major abdominal surgery and the preference of surgical repair technique for giant incisional hernias'
depends on the size of the hernia, patient's comorbidities and surgeon's experience.
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LAPAROSCOPIC TREATMENT OF EARLY POSTOPERATIVE ILEUS AFTER OPEN UMBILICAL HERNIA REPAIR WITH MESH.

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1. Riga East Clinical University Hospital

Aim. The case report demonstrates a successful laparoscopic treatment of early postoperative small bowel obstruction after open strangulated umbilical hernia repair with mesh.

Case report. An 86-year-old female was admitted to the hospital due to abdominal pain for 2 days localised in the umbilical region. The patient has had umbilical hernia for about 20 years. On objective examination a painful, irreponible hernia budge 15 cm diameter in umbilical region was presented. A diagnose of strangulated umbilical hernia was set and emergency operative therapy was performed. During open hernio-laparotomy strangulated greater omentum was resected and herniorrhaphy with sublay polypropylene mesh was performed. After operation patient was transferred to surgical department. On the third postoperative day the patient showed symptoms of bowel obstruction, confirmed by computed tomography, an emergency laparoscopy proceeded. It revealed small intestine loop fixation to the mesh through the peritoneal defect. While separating the intestine a defect in bowel wall was found and sutured laparoscopically. Postoperative period was uneventful. Patient was discharged from the hospital on the 8th postoperative day.

Conclusion. Laparoscopic treatment after open hernia surgery is an alternative access for redo surgery in early postoperative period. It provides acceptable results even in contaminated area without needs to reopen surgical wound.

ONE-YEAR EXPERIENCE OF USING EARLY DEBRIDEMENT AND SKIN GRAFTING IN PATIENTS WITH THERMAL TRAUMA AT REPUBLIC BURN CENTER

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Objectives

Thermal injuries are frequent and can be associated with relevant morbidity and mortality in severe cases. Early surgical debridement of nonviable tissue within 48 hours of burn injury is the standard of care (SOC) all over the world for burns extending into and beyond the deep dermis. Surgical debridement of burn wounds involves tangential excision or dermabrasion of the burn eschar to the plane of punctate bleeding, the indicator of viable dermis. Republic burns center is the only place in Latvia where early debridement method has been implemented into clinical practice since December 2019. Before 2019 SOC for thermal burns was delayed debridement minimum 5-7 days after burn, it clear that during that time infection risk and acute as well as delayed complication (e.g. contractures of the skin) risks are high. Early debridement technique advantage is very fast – nonviable tissue - possible source of infection removal.

Materials and Methods

New burn wound treatment method by early debridement and immediate skin grafting in adult patients with IIb-III degree thermal trauma.

31 patient with IIb-III degree burns were included in study from 01.01.2020 until 31.12.2020 that took place in Republic burn center. Main inclusion criteria was time from thermal trauma until hospitalization, patients must have been hospitalized within first 24 hours after burn. All patients were surgically treated by early burn debridement surgery on 2nd or 3rd hospitalization day.

Results

The mean age of patients was 53,8 (27-83) years. Median length of hospital stay was 28 days (7-230) days. The percentage of the total body surface area burned were in range from 3% until 45%. 17 of 31 patients had diagnosis - Burns of multiple regions, at least one burn of third degree. Only 2 patients needed other consecutive tissue reconstruction surgeries. One patient was operated 12 times after burn early debridement, including delayed necrotomies and knee region full thickness skin grafting. 5 patients died during treatment. Exitus letalis in 1 patient was due to large TBSA 45%, 1 patient with sever inhalation trauma and 3 patients due to decompensation of comorbidities.

Conclusions

In our clinical practice we observe reduction of hospital stay time after early debridement as well during this year we did not register any adverse effect of such surgery timing. We will continue burn early debridement surgeries and collect more data for further studies.

OPEN ABDOMEN VACUUM-ASSISTED WOUND CLOSURE WITH MESH-MEDIATED FASCIAL TRACTION IN PATIENT WITH ACUTE PERFORATIVE APPENDICITIS, SEPSIS, DIFFUSE PURULENT PERITONITIS, MULTIPLE INTESTINAL ABSCESSES, ILEUS, HIGH EJECTION JEJUNUM FISTULA.

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1. Riga East Clinical University Hospital

Summary. The case report demonstrates a successful case of complicated late closure of the 4th grade open abdomen whose treatment often results in difficulties. Highest closure rates are seen with the vacuum-assisted wound closure (VAC) technique. The VAC technique combined with mesh-mediated traction of the fasciae (VACM) resulted in a higher fascial closure rate and lower hernia rate than methods that did not provide fascial traction.

Case report. A 39-year-old male presents peritonitis, ileus and a history of abdominal pain and febrile temperature for the past two weeks. The CT showed multiple intestinal abscesses, ileus and perforative appendicitis. Emergency laparotomy was performed with sanation of the abdominal cavity, drainage of the abscesses and closing the abdomen using VAC. On the 3rd postoperative day enteric content appeared in the VAC system. The relaparotomy was made sanation of the abdominal cavity, packing the intestinal fistula with tampons and drainage, and closing the abdomen with VAC. After surgery, a jejunal fistula with the output of 1800 ml of enteric content was formed. A control CT-scan revealed proximal small intestine fistula with multiple intestinal abscesses. Three days later the third operation was made: sanation of the abdominal cavity, appendectomy, drainage and packing of the jejunum fistula. The wound was closed with VAC and mesh-mediated facial traction was applied. The next day jejunum fistula output decreased from 1600ml to 400 ml. The fourth operation were three days later. The mesh was opened in the midline and after exploration and sanation of the abdominal cavity, the mesh halves were resutured together with tightening of the mesh and re-approximation of the fascial edges. The VAC system was applied. In the following days fistula output lowered from 400 to 100ml. Three days later, the fifth operation was performed with abdominal sanation and VACM. Next day the fistula output reduced to ~20-50ml. The last operation was a week after – the VACM system and drainage was removed and fascial closure was performed with continuous PDS thread. A week later the patient was discharged. The fistula closed. The wound healed primary. Total length of hospitalization – 26 days.

Discussion. Prolonged open abdomen treatment often results in difficulties in primary fascial closing of the abdomen. One study comparing fascial closure with and without fascial traction showed that VACM group managed to close the fascia in 78% of cases compared to 44% of VACs. Later, 10% of patients in the VACM group had hernias compared to 47% in the VAC

group. Vacuum-assisted wound closure with mesh-mediated continuous fascial traction should be suggested as the preferred technique for primary fascial closure in prolonged open abdomen therapy.

RECONSTRUCTION OF SOFT TISSUE DEFECT WITH VASCULARIZED FLAPS IN ADVANCED SKIN CANCER CASES

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Objectives

Skin cancer is common type of cancer affecting people worldwide, with still large proportion of patients diagnosed with disease in advanced stage. While simple tumour excision with primary closure is standard procedure in early stages, advances stages requires soft tissue reconstruction. Due to local rotated or free vascularised tissue transfers, radical cancer treatment and immediate reconstruction are feasible as a one-stage procedure. The aim of this study is to evaluate retrospectively our experience with local and free flap reconstruction of soft tissue defects for patients with skin malignancies in advanced stages

Materials and Methods

In study included 96 patients with skin cancers. All patients underwent tumour excision with soft tissue reconstruction as one stage surgery. Reconstruction with free flap was performed in 12 cases, but reconstruction with rotated flap was performed in 82 cases

Results

Flap survival rate was 100%. Marginal necrosis was observed in two cases. Seroma, which was treated conservatively was present in three cases. Healing by secondary intension on flap donor site was problem in three cases

Conclusions

The application of the best possible reconstruction method that contributes to the fulfillment of expectations and provision of a good functional and aesthetical result is enabled by setting proper, realistic reconstruction goals. Reconstruction with flaps for soft tissue defects is a safe method. However patients general condition, comorbidities and nutrition have huge impact on reconstruction results.

RISK FACTORS PREDICTING POSTOPERATIVE PAIN AFTER LAPAROSCOPIC/ENDOSCOPIC INGUINAL HERNIA REPAIR

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Objectives

Laparoscopic inguinal hernia repair (TAPP or TEP) is a more relevant method compared with open surgery due to less postoperative pain and faster recovery. However, there is a lack of clinical studies that evaluates the predicting factors for postoperative pain after TAPP and TEP surgeries.

The aim of this study was to identify the independent risk factors predicting pain after laparoscopic/endoscopic inguinal hernia repair.

Materials and Methods

A prospective, randomized clinical trial is carried out by dividing patients into two groups (TAPP and TEP) depending on the type of inguinal hernia surgery. The study included 94 patients hospitalized for primary inguinal hernia repair. Postoperative pain was evaluated 3, 6, 9 hours after the operation according VAS. Analgesics were prescribed only when the pain was greater than 3 points according VAS 3 hours after surgery.

Results

The average patient's age was 56.3 ± 14.1 y. Mean postoperative stay was 1.1 ± 0.5 days. The most common preoperative symptom was bulging in the groin area (41.5 %). Mean pain score (VAS) 3 hours after surgery was 3.4±1.4 in TAPP group vs 1.8±0.9 in TEP group ($p=0.041$)

Multivariable logistic regression analysis pointed out that TAPP surgery (OR 3.8; $p<0.01$), smoking (OR 1.8; $p<0.05$), duration of surgery >70min (OR 3.4; $p<0.05$) and hernia defect size >3cm (OR 1.4; $p<0.05$) are independent risk factors predicting postoperative pain after laparoscopic/endoscopic inguinal hernia repair.

Conclusions

TAPP surgery years has 3.8 times higher risk, opertion time >70 min has 3.4 higher risk, smoking – 1.8 higher risk and hernia defect size >3cm - 1.4 higher risk of postoperative pain after laparoscopic/endoscopic inguinal hernia repair.

SUBCUTANEOUS EMPHYSEMA, PNEUMOMEDIASTINUM AND PNEUMOTHORAX AS A COMPLICATION AFTER LAPAROSCOPIC INGUINAL HERNIA SURGERY (TEP - TOTALLY EXTRAPERITONEAL PROCEDURE).

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Introduction.

Laparoscopic extraperitoneal inguinal hernia repair (TEP procedure)) has been gaining ground recently and is an acceptable choice of surgical method for groin correction. The incidence of recurrences after laparoscopic surgery is about 1% and after open surgery 0.6-1.4% (1; 2). Certain complications are possible with both methods, but the overall rate of complications is similar. Pneumomediastinum, pneumothorax, and subcutaneous pneumonia are extremely rare complications after laparoscopic surgery (6).

Case description

A 54-year-old man arrived at the Department of Day Surgery as an elective patient due to right indirect inguinal hernia for operative treatment, planned laparoscopic surgery (TEP). A completely healthy male patient before. No concomitant diseases.

Objectively: a hernia reproduced on the right, passable by 2 fingers.

Portable implantation of inguinal plastic - laryngeal anesthesia for optics and instruments to the preperitoneal patient performed by the TEP method performed on the patient. It is an indirect hernia on the right. Hernia sac released. Made TEP hernioplasty with Bard 3D 10 * 15cm mesh, fixed to Cooper's ligament with resorbable tackers. Hemostasis controlled. Pneumoperitoneaum evacuated. Wounds closed.

Intravenous anesthesia (propophol + remiphentanyl). The first 15 minutes went smoothly, but then the ventilation pressures needed to ensure respiratory volume gradually increased, and air leakage, hypercapnia, and slowly a decrease in SpO2 occurred alongside the throat mask. The standard (1st generation) LMA was replaced with an iGel effect. Manual ventilation with a mask was also difficult - high back pressure; required great emphasis to ensure volume. The patient was relaxed by this time, but had no effect. The trachea was intubated. Deep oxygenation and ventilation disturbed - FiO2 required 90% to ensure ~ 90% SpO2, See 10 + 25 cmH2O ventilation pressures for 500 mL. The auscultation heard a two-sided, very quiet breath. For possible bronchospasm, salbutamol was administered intratracheally, sevoflurane was added to TIVA without effect. When viewed from the chest with ultrasound, there was a lack of bilateral pleural slip and a so-called barcode sign - bilateral pneumothorax?

Since the circulatory disorder never occurred, i.e. surgeons did not appear to become tense, surgeons were able to discontinue surgery and stop CO2 insufflation. Ventilation did not

improve immediately. Examination of the patient revealed marked emphysema of the abdomen, around the chest. By ventilating with high pressure, the lung was gradually recruited and the regimen could be relaxed; oxygenation also improved, sufficient for extubation for a few minutes. After extubation, the need for supplemental oxygen remained, but ventilation was otherwise in order and the patient had no complaints about breathing.

Chest X-ray after operation - an apical pneumothorax up to 1.3 cm on the right. Air in the mediastinum as well as in the subcutaneous tissue on both sides and in the right neck area.

However, the patient was left to the abdominal surgery department for the monitoring. On the first postop.day, the patient complains of slight pain in the chest area. There are no signs of respiratory failure.

The patient in good general condition was allowed on the first postoperative day.

SURGICAL WOUND DEHISCENCE FOLLOWING MIDLINE LAPAROTOMY CLOSURE: DOES RETENTION SUTURE HELP TO REDUCE DEHISCENCE RATE?

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Objectives

1) To evaluate the rate of wound dehiscence following midline laparotomy closure

2) To analyze risk factors for surgical wound dehiscence

3) To determine whether retention sutures have effect on the rate of surgical wound dehiscence

Materials and Methods

A prospective study of patients who underwent elective midline laparotomy in the Department of Surgery of Lithuanian University of Health Sciences was performed. Risk factors for dehiscence were evaluated preoperatively and postoperatively. Patients were determined to be “low risk” (0-2 risk factors) or “high risk” (>2 risk factors). Low and high risk patient were divided into groups by whether additional retention sutures (RS) were applied (RS+) or not (RS-). Midline abdominal incisions were sutured according to European Hernia Society guidelines. PDS CTX 1-0 slowly-absorbable monofilament suture with 48 mm 1/2 circle needle was used for abdominal closure. Same type of monofilament was used for RS. Wound dehiscence was evaluated during sonography of surgical wound area. Student’s t-test was used to compare parametric, $\chi 2$ test and Mann-Whitney U test – nonparametric variables between groups. Logistic regression analysis was used to determine independent risk factors for dehiscence.

Results

185 patients underwent elective midline laparotomy for various causes. The mean age of patients was 61.68±16.10 years. Preoperative risk factors for dehiscence were evaluated by analyzing patients’ medical history. Postoperative risk factors were assessed during patients’ hospital stay. We have determined that uremia ($p=0.028$), chronic obstructive pulmonary disease ($p=0.035$), hypoalbuminemia ($p=0.013$), hemoglobin <100 g/l ($p=0.002$), intra-abdominal abscess ($p=0.001$), jaundice ($p=0.020$), surgical site infection ($p<0.001$) and anastomotic leak ($p<0.001$) were independent risk factors for wound dehiscence. 89 patients were “low risk”, with RS applied to 30 patients (33.7%). 96 patients were “high risk”, with RS applied to 62 patients (64.6%). RS+ and RS- groups were similar by gender distribution, age and number of independent preoperative and postoperative risk factors. Overall wound dehiscence rate was 4.32% with all of the occurrences for high risk patients. Dehiscence was observed for 2 patients (5.88%) RS- and for 6 patients (9.68%) in RS+ groups. Difference between these groups was not significant ($p=0.520$).

Conclusions

Overall wound dehiscence rate was 4.32 % in our study with all occurrences in high risk group. We have determined that use of retention sutures had no effect on the rate of wound dehiscence in neither low nor high risk groups.

USE OF 3D PRINTING TECHNOLOGY FOR CHEST WALL RECONSTRUCTION AS PART OF PERSONALIZED STERNAL CHONDROSARCOMA TREATMENT.

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Introduction

Primary tumors of the sternum are rare and account for 0.5% of all primary bone tumors. A chondrosarcoma is the most common primary malignant tumor of the chest wall. Depending on the grade of the tumor, surgical resection is the main treatment option. In sternum resection the most challenging part is reconstruction. Chest wall is rigid yet dynamic structure and sternum bone with costosternal joints has very heterogenous shape that is hard to replicate. Nowadays with 3D printing technologies it is possible to make exact replica of different body parts. 3D printing is promising yet not widely available due to technical pitfalls, limited availability and high costs. The authors report a successful surgery for primary sternal chondrosarcoma, which was treated with subtotal sternectomy and sternal reconstruction using 3D printing technology.

Case presentation

A 25-year-old women with no relevant past medical history presented with a 2x3 cm visible and palpable mass of upper sternum. CT scan showed tumor of manubrium (26 mm Ø). She underwent core biopsy revealing chondrosarcoma. Patient received neoadjuvant radiotherapy with minor complaints of radiation esophagitis and anterior chest wall skin burn. After symptoms subsided patient was scheduled for sternal resection. For better functional and cosmetic results authors considered use of 3D technology for sternal reconstruction. Prior to surgery 3D model of patient`s sternum was created and printed in order to create silicone mold for methyl-methacrylate bone cement application during reconstruction. Silicone mold was prepared prior to surgery divided into anterior and posterior parts and sterilized.

Description of procedure:

Combined midline and cervicotomy T-shaped skin incision was made. Previous core biopsy site was excised. Parasternal and paraclavicular parts of pectoralis major muscles were dissected and mobilized. En bloc resection of manubrium and upper part of corpus was performed, approximately 3-cm long pieces of cartilage from the 2nd to 4th ribs were removed bilaterally. Sternoclavicular joints were partially preserved. Opposite costal ends were sutured with non-absorbable braided sutures to stabilize anterior chest wall and give extra support to sternal implant. Wet and cold gauze was applied above pericardial fat to protect underlying tissue from heat emitted during methyl-methacrylate hardening. Anterior and posterior parts of silicone mold were inserted, joined and secured around remaining

sternum and rib cartilages. 30 mL of methyl-methacrylate were prepared in syringe and injected into the mold through small orifice in the upper part of the mold. After hardening of cement silicone templates and gauze were easily removed. Additional 5 mL of methyl-methacrylate were prepared to fill in the gaps and correct minor imperfections. Pectoralis muscles were sutured together over the sternal implant. J-VAC drain was inserted under and over the implant. Patient was extubated in the operating room. Postoperative period was uneventful and patient was discharged on 5th postoperative day. One month after surgery control CT scan showed adequate position of implant and satisfactory tissue healing. Patient was happy with cosmetic and functional result, she is currently scheduled for follow-up with oncologist.

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