SURGERY AND ORTHOPEDICS

PLENARY LECTURE

EFFECTIVE TREATMENT OF PERITONEAL MALIGNANCIES USING CYTOREDUCTIVE SURGERY (CRS) AND HYPERTHERMIC INTRAPERITONEAL CHEMIOTHERAPY (HIPEC)

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Summary

The combination of CRS and HIPEC is a treatment with established benefits in patients with limited dissemination of peritoneal carcinosis (PC) in different types of cancer. It consists of complete removal of all visible cancer sites in the abdominal cavity and pelvis following by circulation of heated solution containing certain chemotherapy drugs. The aim of the current study is to summarize current literature data for the treatment of peritoneal carcinosis of different origin using CRS and HIPEC and to present initial results of the method used in an unprofilled surgical unit. For the period of two and a half years (01.03.2017-01.03.2019) we have carried out 91 combined procedures CRS-HIPEC and 40 palliative HIPECs (main method for treating diuretic drugs resistant malignant ascites). Patients with good performance status, low PCI and lack of extraperitoneal involvement, in which complete CRS is possible, have the greatest benefit of this treatment (40% 5-year survival)

Key words: cytoreductive surgery, intraperitoneal chemotherapy, hypertermia

ORAL PRESENTATIONS

3D-BIOPRINTING IN ONCOLOGY – NEW PERSPECTIVES

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Summary

The 3D-bioprinting technology allows creating 3D objects by layering synthetic or biological materials under computer control using an automated machine, thus preserving cell function and viability. The aim of this study was to set an original protocol for generating 3D organoids from colorectal cancer (CRC) tissues and studying their morphology and viability as a prerequisite for individualizing the therapy in oncology. CRC tissue and its distal normal counterpart were obtained from 20 patients diagnosed with CRC. After tissue disintegration and in vitro cultivation, cells were examined for viability and morphology, then mixed with bioinks and printed via the Cellink BioX printer. The organoids were sectioned and studied immunohistochemically. An original protocol for CRC tissue bioprinting was set up. Cultured cells

showed good viability and served as a substantial source for further printing of organoids, in which patches of tumour cells were observed. Their morphology and immunohistochemical profile corresponded to adenocarcinoma cells. The preliminary results showed that bioprinting CRC is a reliable approach which opens future perspectives for individualizing the therapy in CRC.

Key words: 3D-bioprinting, 3D organoids, colorectal cancer

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PAINKILLERS REDUCTION AFTER FOCUSED ULTRASOUND SURGERY IN ADVANCED PANCREATIC CANCER PATIENTS

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Summary

Our objective was to study the use of focused ultrasound surgery (FUS) for pain relief and evaluation of the painkillers reduction as palliation treatment of advanced pancreatic cancer patients. A single-centre prospective study was conducted from February 2013 to June 2018 at the HIFU department, St. Marina University Hospital – Pleven. Forty-seven advanced pancreatic cancer patients met the inclusion criteria and were treated by FUS. The mean age of the patients was 58.5 years. Visual Analog Scale (VAS) was used to measure the level pain before FUS and 1, 3, 6 and 12 months after FUS. The use of analgesics before and after FUS was evaluated. Parameters of FUS of patients with advanced pancreatic cancer were: sonication time /sec/ (mean±SD) 694 +/- 338.2 and average power /W/ 262 +/-74.8. First hyperechogenic /greyscale/ changes were seen at a mean time of 366.5 sec during FUS. No severe complications occurred. At least two cycles of chemotherapy were made in 42 of the patients. Mean VAS for pain decreased from 6.4 to 3.6 after FUS. The use of oral opioids and NSAIDs by the patients decreased in the first month after FUS (p=0.001). FUS is a safe and feasible method for treating advanced pancreatic cancer patients. FUS seems to be the right choice for pain relief and decreased use of painkillers in advanced cancer patients. Randomized trials are needed to substantiate this thesis.

Key words: focused ultrasound surgery, pancreatic cancer, analgesics

SURGICAL TREATMENT OF MASSIVE PULMONARY EMBOLISM

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Summary

We present a retrospective analysis of an aggressive cardio-surgical approach used in our institution for the treatment of massive pulmonary embolism (MPE). The study aimed to evaluate the results of our surgical approach and compare

it to other treatment methods. Between February 2017 and May 2019, 19 patients underwent emergency surgical embolectomy for MPE. The diagnosis was made using contrast computed tomography of the chest and transthoracic echocardiography, followed by immediate surgical intervention. Surgery was performed on a beating heart with cardiopulmonary bypass (CPB), without cardioplegia and deep hypothermic circulatory arrest (DHCA). All of the patients were transferred from the emergency ward with a leading clinical sign –severe dyspnea of sudden onset, elevated D-Dimer levels and ECG pattern suggesting right ventricular burden. In 84% of patients, untreated, deep venous thrombosis (DVT) was found, and 47 % reported a recent surgical procedure. Most of the patients had multiple comorbidities with obesity and diabetes, and arterial hypertension was most common. Preoperatively, 6 (26%) of the 19 patients were in a cardiogenic shock, and 3 (11%) of 19 had survived cardiac arrest before admission. According to the literature, the mortality for surgical treatment of MPE, without circulatory arrest ranges between 8% and 36%. The mortality rate in our centre is comparable to the other centers –21 % (4 patients). Surgical treatment of MPE with CPB on a beating heart without DHCA is a surgical method of choice, providing comparable results. Prevention of cardiogenic shock and cardiac arrest in patients with MPE improves the results of surgical treatment.

Key words: massive pulmonary embolism, surgical treatment, cardiopulmonary bypass

PRIMARY RESULTS ANALYSIS OF TRANSCATHETER AORTIC VALVE IMPLANTATION (TAVI) IN HEART AND BRAIN HOSPITAL – PLEVEN

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Summary

This study aimed to analyze the primary results of TAVI implantations in the Cardiac Surgery Unit of Heart and Brain Hospital – Pleven. Between 07.10.2018 and 25.03.2019, seven TAVI procedures were performed, with implants and delivery systems of Abbott and Medtronic. The mean age of the patients was 75 years. All patients were considered as high-risk bearers for open surgery. The mean values of transvalvular gradients were 95 for peak and 53 for mean gradient, respectively. All patients had symptoms of heart failure. The mean ejection fraction of the left ventricle was 50% measured by Simpson's formula. The hemodynamic profile of the implanted valve, the presence of significant residual paravalvular leaks, the need for permanent pacemaker implantation, cerebral complications, alteration of EF, and peripheral vascular complications were all taken into consideration. There was a significant reduction of transvalvular gradient values: 59 for peak and 15 for mean gradient, respectively. Mean postprocedural EF was altered to 55% on the second postoperative week. Five of the seven patients reported improvement in NYHA functional class. The distribution of periprocedural complications was as follows: permanent pacemaker implantation – 1; cerebral complications – 0; significant paravalvular leaks – 0/ insignificant – 2; peripheral vascular complications – 3 (one dissection of ipsilateral iliac artery and two contralateral hematomas); the need of hemotransfusion - one patient with 3 ER units. Despite the imperfections of the currently available implants and delivery systems, this method has its place in the treatment of polymorbid and high-risk patients. The appropriate evaluation of risks and benefits must be made by a team of a cardiac surgeon, a cardiologist and an anesthesiologist, before deciding on the best treatment.

Key words: TAVI, TAVR, primary results

SURGICAL TREATMENT OF ADULT CONGENITAL HEART DISEASE

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Summary
Adult congenital heart disease (ACHD) patients are a group of adolescents and adults who have survived the heart conditions they were born with. Our study aimed to establish the hospital stay and early postoperative mortality in the surgical treatment of adult patients with congenital heart disease (CHD). From February 2017 to May 2019, eighteen patients with different types of CHD were treated. The age of patients in our study group ranged from 21 to 76 years and included ten men and eight women. Patients with atrial septal defect (ASD) were the largest group (13), other cases included VSD, TOF, AVSD, and coronary-arteriovenous fistula. The patients were admitted with worsening of their clinical condition and different degrees of heart failure. They had been on medication therapy for years, and one of them had a history of a previous surgical procedure. All patients underwent surgical repair using **Cardiopulmonary bypass (CPB)**. Various techniques were used to repair the congenital defect and concomitant heart conditions. The mean hospital stay was 12 days (range 8-23 days), while the mean ICU stay was three days (range 1-8 days). In 94% of the patients, we achieved a good outcome with the reduction of symptoms and hospital discharge. Only one patient died during the postoperative period. We could conclude that the surgical treatment in ACHD has an overall good result with slightly prolonged hospital stay and a low mortality rate in the early postoperative period.
Key words: congenital heart disease, adults, heart disease

OUR EXPERIENCE WITH THE MANAGEMENT OF COLORECTAL ANASTOMOSIS LEAKAGE

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Summary
Anastomotic leakage remains the most common life-threatening major complication after colorectal surgery. We aimed to analyze the management of patients with anastomotic insufficiency following colorectal surgery. Between June 1, 2008, and April 30, 2018, a total of 1668 patients, 1006 males and 662 females, underwent open or laparoscopic resections with primary anastomosis for colorectal cancer. There was anastomotic leakage in 44 patients 2.64%, 31 males and 13 females (mean 67.3 years). Colorectal anastomotic insufficiency was most

common: 33 patients (in 75% of the cases), followed by ileocolic and colocolic leakage in four patients each. The diagnosis was based on drainage examination, computed tomography with or without contrast enhancement, reoperation, and contrast enema. Leakage was most common in rectal surgery when double stapling was used, and a protective stoma was not constructed. Hospital stays correlated with the anastomotic leakage severity. It was 12 days (range 9-20) in grade A, 15 days (range, 12-43) in grade B requiring active therapeutic intervention, and 27 days (range, 18-44) in grade C necessitating relaparotomy. Drainage lavage, passage interruption, transversostoma and ileostoma were successfully applied for anastomotic leakage. Reoperations were statistically significantly more common in anastomotic insufficiency than in the rest patients (61.36% versus 4.37%; t=7.745; p<0.001). Anastomosis preservation employing protective stoma and drainage lavage was a more effective management strategy when controlling the peritoneal sepsis inflicted by the insufficiency of both intra- and extraperitoneal colorectal anastomosis.

Key words: colorectal cancer surgery, colorectal anastomosis, anastomotic insufficiency, diagnosis, management

GIANT RETROPERITONEAL LIPOSARCOMA - TREATMENT AND RESULTS: A CASE REPORT

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Summary

Retroperitoneal liposarcomas are rare mesenchymal tumours and represent less than one per cent of all malignant neoplasms. Due to the anatomical spaces of the retroperitoneum, they often reach gigantic proportions. Retroperitoneal liposarcomas account for 10-15% of all soft tissue sarcomas. They remain long asymptomatic. Ultrasound, CT and MRI are the tools for diagnosis and follow-up in the postoperative period. The complete surgical resection is the primary method of treatment, and the large sizes are a challenge for every surgeon, as it is often necessary to resect adjacent infiltrated organs. We present a clinical case of a 69-year-old patient with a giant retroperitoneal liposarcoma with all of the imaging findings and surgical steps to achieve control of the disease and prolonged asymptomatic periods and survival. The patient we operated in June 2014 was with a giant retroperitoneal liposarcoma sized 35 cm and weighing 9.5 kg. We performed right hemicolectomy with two more operations afterwards because of local recurrences. Chemotherapy and radiotherapy were also applied. The follow-up CT scan (April 2019) did not detect recurrences. According to the literature, 50-100% of liposarcomas recur from residual tissue after surgery, justifying aggressive surgical behaviour in an attempt to achieve relapse-free periods and more prolonged survival. Chemotherapy and radiotherapy are not used as a standard adjuvant treatment and are applied in selected cases, such as our patient. The main prognostic factor is complete resection, not the size of the tumour. Our therapeutic behaviour and results fully correspond to the world experience and available publications. We believe that the benefits of active surgical intervention to achieve disease control and prolonged survival are confirmed, despite the often gigantic dimensions that retroperitoneal

liposarcomas reach. We believe that the additional impact of adjuvant chemotherapy and radiotherapy contributes to achieving the therapeutic goal after discussion and assessment of each patient.

Key words: giant retroperitoneal liposarcoma, retroperitoneum

FULLY ROBOTIC SINGLE-DOCKING TECHNIQUE FOR SURGICAL TREATMENT OF RECTAL CANCER: IMPLEMENTATION AND CLINICAL RESULTS

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Summary

At present, the standard surgical treatment of rectal cancer is partial or total mesorectal excision (PME/TME). Laparoscopic surgery is successfully performed in cases of rectal cancer but has some technical limitations which can lead to a high conversion rate and steep learning curve. The da Vinci robotic system was created for precise dissection in narrow spaces like the pelvis. The three-dimensional view of the operative field, instruments with a high level of mobility, recreating the wrist`s movements, a filter for the physiological tremor and better ergonomics are a part of the advantages of robotic surgery over laparoscopic surgery. This is the reason for many authors to believe that robotic surgery can overcome the limitations of conventional laparoscopic surgery in the treatment of rectal cancer. Our study aimed to present our early clinical results after implementation of robotic surgery for the treatment of rectal cancer in Bulgaria. In a prospective trial for four years, 25 patients with rectal cancer, selected for robotic resection were analysed. All procedures were performed employing a fully robotic, single-docking technique. The intraoperative and early clinical results as operative time(OT), blood loss, intraoperative complications (IOC), length of hospital stay (LOS), conversion rate, bowel function recovery, as well as postoperative morbidity, mortality, specimen quality and resection margins, were analysed. In all cases of mid or low rectal cancer, TME was performed. In cases of high rectal cancer, we performed only PME. Conversion was registered in six patients. The blood loss was 100 ml. A major intraoperative complication was registered in one patient, where injury of the ureter occurred. The average LOS was seven days. No postoperative mortality was observed. The quality of TME was complete in 21 patients. No positive resection margins were observed. The fully robotic, single-docking technique is a safe and feasible procedure for performing PME/TME for rectal cancer. More randomized trials are necessary for establishing the benefits of this technique and compare it to conventional laparoscopic surgery.

Key words: rectal cancer, robotic surgery, minimally invasive technique

TRANSANAL TOTAL MESORECTAL EXCISION FOR RECTAL CANCER: OUR FIRST EXPERIENCE

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Summary
Rectal cancer surgery has changed a lot in the last decade. Total mesorectal excision (TME) is nowadays the golden standard for rectal cancer surgery. Transanal total mesorectal excision (TaTME) is a novel approach that could solve some difficulties in the distal rectum mobilization, thus improving the quality of the surgery and probably the oncological results. We present the first patient that we treated with TaTME. A 57-year-old male patient presented to our clinic with low rectal cancer. Whole-body CT showed no distant metastases. MRI showed T3N1 rectal cancer and the patient was referred to neoadjuvant chemoradiation therapy. Eight weeks after the end of radiation therapy, we performed TaTME for intersphincteric abdominoperineal excision. The two teams worked simultaneously. The transanal team started with open intersphincteric dissection, and then the GelPoint was attached. The operative time was 305min. Handsewn end-to-end anastomosis was performed, and protective ileostomy was performed. The length of the specimen was 36cm ex vivo, the quality of the specimen – assessed as complete. Tumour height was 1cm from the anorectal junction. Histopathology showed pT2N0M0 rectal cancer with clear circumferential resection margin as well as proximal and distal margins. Ileostomy reversal was performed two months later. No adjuvant therapy was needed. The patient was disease-free at follow-up six months later and was added to the international TaTME registry. TaTME is a promising surgical procedure for rectal cancer patients. Results from large international randomized clinical trials are awaited.
Keywords: TaTME, rectal cancer, laparoscopy

INTRAOPERATIVE NAVIGATION WITH INDOCYANINE GREEN IN COLON CANCER SURGERY: A REPORT ON TWO CASES

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Summary
Anastomotic leaks remain a constant, challenging and hardly predictable complication in colorectal surgery, rating up to 10%. Many different techniques and devices are used to reduce the incidence. Intraoperative navigation with indocyanine green (ICG) is one such modern technology. Currently, there are three applications of ICG during surgery: sentinel lymph node mapping, intraoperative solid tumours identification, and microcirculatory angiography during reconstructive surgery. We present 2 cases of intraoperative microcirculatory angiography with ICG after colonic resection for the evaluation of the blood supply of a primary anastomosis in colon cancer patients. We present 2 cases: one with ascending colon cancer and one with synchronous ascending and transverse colon cancer, treated at the Clinic of Surgical Oncology in Dr G. Stranski University Hospital, Pleven. The patients were treated with laparoscopic right hemicolectomy and laparoscopic subtotal colectomy, respectively. In both patients, microcirculatory angiography with ICG was performed to assess the blood supply of the intestine after central vessel ligation and to determine the resection margins. An Olympus VUSERA ELITE II – 3D was used to detect ICG. The operative time was 210 min and 300min, respectively. During the operations, no significant bleeding was detected. There was no green staining of the tissues to be seen when using the standard camera. The postoperative period went smoothly, without complications. Neither anastomotic leak nor adverse reactions to the ICG were recorded. The patients were discharged in good general condition, eight and five days after the operation, respectively. ICG is a safe, feasible and precise method for intraoperative navigation with excellent visualization and identification of tissue structures. Randomized control trials in this field are needed.
Key words: ICG, colon cancer, laparoscopic surgery

COMPARATIVE ANALYSIS OF RESULTS BETWEEN ROBOT-ASSISTED VS. OPEN RADICAL PROSTATECTOMY: EIGHT YEARS OF EXPERIENCE

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Summary
The aim of this study was to compare preoperative and postoperative results among patients operated with open radical prostatectomy (ORP) and robotic-assisted radical prostatectomy (RARP); to examine early and late complications, to analyze data of oncological (PSM) and functional outcomes (continence and erectile function) during the first year of follow-up. During 2011-2019, in the Clinics of Urology of Dr Georgi Stranski University Hospital and St Marina University Hospital in Pleven, 503 patients were operated for localized prostatic cancer (PC). Of these, 127 underwent RARP, 351 - ORP, and 25 – laparoscopic radical prostatectomy (LARP). RARPs included 70 cases performed with Da Vinci S, 20 cases - DaVinci Si, and 35 cases - DaVinciXi. Retrospectively, we compared the RP and RARP group until June 2019. We followed up 82 from the ORP and 90 patients from the RARP groups. There was no difference in the preoperative indicators (PSA, Gleason score, clinical stage), except prostate size in both groups. Operative time and blood loss were significantly high in RARP 160/130 mins and 150m/300 ml, respectively. The percentage of postoperative complications (Clavien-Dindo III-IV) was 0% in RARP and 3% in RP. Frequency of PSM was lower 14% (RARP) vs 34% (RP). Percentage of postop PSA and administration of adjuvant therapy was comparable in the two groups. Functional outcome of continence and EF was better in RARP: 91%/87% and 46%/40%, respectively). RARP offers better functional outcome, shorter catheter duration and hospital stay, lower blood loss and lesser complications. These results suggest that RARP the first-choice treatment for patients with organ-confined PC.
Key words: RARP, ORP, oncological and functional outcomes.

ARTHROSCOPIC CHONDROPLASTY BY IMPLANTING THERMOHYDROGEL FOR THE TREATMENT OF KNEE CARTILAGE LESIONS: INDICATIONS, SURGICAL TECHNIQUE, RESULTS

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Summary
The therapeutic approach in patients with symptomatic III-IV grade (ICRS) chondral and osteochondral knee defects is still the subject of discussions and experimental studies. The purpose of this study was to discuss the indications for surgical treatment, the surgical techniques used, and the results obtained. The clinical study was conducted at the University Clinic of Orthopedics and Traumatology in Pleven and included the interval 2012-2016. All patients received an innovative product (ChondroFiller Liquid) autoregenerative collagen in the form of a liquid implant designed to treat traumatic or degenerative chondral defects. Chondroplasty in the study method was performed on 14 patients (5 women and 9 men, median age 32, age range 23-47 years) with symptomatic chondral injuries localized in the medial and lateral knee joint, hip joint who had not received conservative treatment. The size of the osteochondral defect

was 2-5 cm, and the depth was less than 10 mm. The follow-up period for patients in the study was 36 months. MRI and diagnostic arthroscopy were used to evaluate the results. Using the above assessment methods and after three years of follow-up, very good and excellent results were obtained in 87.5% of patients, good – in 7 %, and satisfactory – in 5.5%, one patient? was found with initial knee changes six months postoperatively. Over the last three decades, the treatment of chondral defects has evolved throughout the world, striving to achieve better cartilage quality through minimally invasive techniques. The use of Chondofiller-gel as a one-step arthroscopic procedure has obvious advantages: it shortens the recovery period and avoids arthrothymia complications. This innovative technology makes it possible to treat chondral defects arthroscopically using autologous collagen that provides good fixation and growth of hyaline-like cartilage.
Key words: osteochondral defects, arthroscopy, chondroplasty

PROBLEMATIC SKIN WOUNDS: SHALL WE USE PLATELET-RICH PLASMA OR NOT?

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Summary
The goal of this study was to show the results of applying the method platelet-rich plasma (PRP) for the treatment of problematic skin wounds. One hundred fifty-four (154) patients with problematic skin wounds were hospitalized and followed-up. The platelet-rich plasma method was used on 83 of them, comprising the experimental group. The control group included 71 patients with similar wounds, treated with conventional methods, depending on the pathology. SPSS software (Statistical Package for the Social Sciences) was used for the statistical analysis. Data on the condition of monitored symptoms of researched cases were duly collected. A variable was assigned for every symptom, and its value and weight were correspondingly introduced. Scores introduced by Cancela AM were used to assess the wounds. Variables, containing data about the initial and final stage of each series of experiments were analyzed. Variables' basic numerical characteristics were determined, and comparative analysis was performed to check how they tended to vary in both groups. Results indicated that 92.78% of patients reported full recovery, and 7.22% of them - no healing. The results of our study demonstrate that the method is safe and effective. It corresponds to the principles of biological treatment and leads to full recovery in a high percentage of problematic skin wounds.
Key words: problematic skin wounds, platelet-rich plasma

ABOUT CARDIAC MYXOMAS: A REPORT OF FOUR CASES

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Summary

Cardiac myxoma (CM) is the most common benign heart tumor and may be confused with an oval atrium thrombus. The aim of this study was to describe four cases with CM. All 4 cases were clinically diagnosed, surgically evaluated and histologically confirmed. Routine histological, histochemical and Immunohistochemical (IHC) methods were used: HE, v.Gieson, PAS+Alcian blue stain, IHC staining for Calretinin, and CD 34. In one man and three women, 50 to 77 years aged, 3 CMs were localized in the left atrium, and one was in the right atrium. Histologically, 3 of CMs were solid type, and one was of a villous type. They were composed of stellate and ovoid cells, perivascularly placed in a myxoid matrix. The cells are Calretinin positive, after IHC staining. The tumor stroma was highly vascularized and complicated with fresh and old hemorrhages. Parietal thrombi were seen in two patients. Histologically, neovascularization and secondary degenerative changes were found in both the oval thrombi and CM. It is important to distinguish them after IHC staining for Calretinin. The next step was to define the solid and villous subtypes of CMs, because the villous subtype may be a source of complications such as thrombotic and tissue embolization.

Key words: heart tumors, cardiac myxoma, histopathology

CLINICAL REPORT AND REVIEW OF TWO TYPES OF PERYCITOMAS IN CLINICAL PRACTICE

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Summary

Myopericytoma is a rare tumour of deep soft tissues, originating from pericytes and characterized by numerous thin wall blood vessels. Anatomically-pathologically, it is described as a perivascular proliferation of mesenchymal cells with pericytic differentiation, with radial and vertical growth of the cells, which take an oval form. Often, the blood vessels take on a characteristic form of a "deer horn". Over during the years, because of the rarity and complexity of the tumour's morphopathological aspects, its pathology has been re-evaluated so that it can be correctly framed.

Hemangiopericytomas (HPCs)/Solitary fibrous tumour are rare neoplasms of vascular origin that occur in the head-and-neck region. These tumours arise from capillary pericytes and are difficult to distinguish from other tumours of vascular origin. In 1942, Stout and Murray first used the term hemangiopericytoma to describe a tumour, which was histologically distinct from other types of vascular neoplasm characterized by proliferation of pericytes. These tumours account for 2-3% of all soft tissue sarcomas in humans and occur mainly in the musculoskeletal system. About 15-30% of all hemangiopericytomas occur in the head and neck region. We report two cases, one of myopericytoma found on the right lower leg. At the anatomopathological examination, the escalated lesion showed a neoformation of 15/10 cm in diameter, well-circumscribed, capsulated, with myopericytoma as a diagnosis.

The other case is an HPC of a 57-year-old man, who presented with a swelling in the oropharynx. The mass was well-circumscribed and compact on palpation. The epithelium over the tumour was intact and normal. On anatomopathological evaluation, immunohistochemical examination and structural characteristics for the correct formulation of the diagnosis are essential, and an adequate surgical excision is essential.

Key words: hemangiopericytoma, myopericytoma, pericytoma

POSTERS

DIABETIC FOOT ULCERS – RISK FACTORS AND NEW STEPS OF TREATMENT IN CLINICAL PRACTICE (MATRIDERM®)

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Summary
Diabetes is one of the most common health problems. Its complications such as diabetic neuropathy and vascular ischemia can lead to big wounds and ulcers, which in turn may cause significant discomfort with a possibility of severe consequences necessitating hospitalization. The aim of this case report is to introduce Matriderm® as a new effective method in the treatment of diabetic foot ulcers and the risk factors that are causing them. We made a retrospective review of the available evidence-based, up-to-date literature and prospective research of various patients with applied Matriderm®. We share our experience with a case of diabetic foot. A 68-year-old male patient presented with a wound on the dorsal part of the left foot dating a month back. The patient was surgically treated by the rules of open surgery. Application of MatriDerm® combined with free skin transfer is a viable option in this case. A diabetic foot ulcer is one of the most gruelling complications of diabetes that requires long-term recovery. The use of MatriDerm® combined with free skin grafting occupies a leading position in the treatment of these wounds. The multidisciplinary approach and the properly planned treatment plan play a crucial role in the outcome of this process.
Key words: diabetic foot ulcer, MatriDerm®, diabetes, wound treatment, multidisciplinary

TWO ABNORMAL COMPLICATIONS AFTER VENTRICULO-PERITONEAL SHUNT

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Summary
A ventriculoperitoneal shunt is the most frequent operative intervention for decreasing the amount of cerebral fluid in conditions leading to hydrocephalus. Placing the catheter in the abdomen is a more effortless procedure compared to other sites of insertion, but like any other surgical intervention, various complications may occur, mainly mechanical and infectious. We present two complications after a ventriculoperitoneal shunt in a child who underwent operations in the Department of Pediatric Surgery for five years. A 12-year-old boy operated at eight months of age and had a ventriculoperitoneal shunt with a valve system placed. Later, the shunt was replaced twice because of unusual mechanical complications: 4 years ago – a pseudotumor process over the liver in the peritoneal catheter tip; 4 months ago for decubitation of the descending colon wall and catheter implantation into the lumen of the intestine. Currently, the child is in satisfactory general health. The ventriculoperitoneal shunt is the best method for draining cerebral liquor in children with hydrocephalus. Despite the complications, the multidisciplinary and individual treatment approach for patients with such a problem should be used.

Keywords: complication, ventriculoperitoneal shunt

SONOGRAPHY IMAGES AS AN OBJECTIVE METHOD FOR DIAGNOSING INGUINAL HERNIA IN CHILDREN

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Summary
The most common disease which requires surgical treatment in paediatrics is an inguinal hernia. About 3-5% of healthy, full-term babies are born with an inguinal hernia. In premature infants, the incidence is substantially increased-up to 30%. Between 5-10% of these cases will be diagnosed in urgency and will be operated on because of incarceration. That is why early diagnosis of the condition with an objective and non-invasive method such as ultrasound is essential. This method avoids the complications occurring in the inguinal hernia, which are the most common cause of emergency surgical treatment. Our work aimed to present the ultrasound examination as necessary, objective, safe and easily accessible imaging method for diagnosing inguinal hernia in children. From March 1, 2017, to March 30, 2019, 243 children underwent herniotomy at the Department of Pediatric Surgery, St. Anna hospital. Of these operations, 188 were scheduled, and 56 were urgent. All patients were diagnosed with Sonograph Sonoscape S2. The patients were distributed in groups by age, sex, the surgical technique performed, average hospital stay and complications. Of the diagnosed patients, 230 were with inguinal hernia, - 0 -with a direct hernia, 230 – with an indirect hernia, and 13 – with funiculocele and hydrocele. Ultrasound examination is an accurate, safe, fast, and easily accessible imaging method in the diagnosis of inguinal hernia in children.

CHOLECYSTOENTERIC FISTULAS AND BILIARY ILEUS

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Summary
Gallstone ileus is a result of cholecysto-enteric fistula, most commonly to the duodenum or stomach, but also to jejunum and ileum. Gallstones can then pass into the gastrointestinal tract causing bowel obstruction. Biliary ileus is the primary cause in less than 0.1% cases of mechanical bowel obstruction. The aim of our study was to present our experience in diagnosis and surgical treatment of bilio-digestive fistulas (BDF) and cases of biliary ileus. We performed a retrospective analysis of all cases with bilio-digestive fistulas and biliary ileus (BI) in patients treated in Department of Surgical diseases at "Dr. Georgi Stranski" University Hospital for a 10 years' period (2009-2018). We used Gamma code master database to enroll the patients and to make analysis of the results. Demographics,

hospital stay and surgical procedures were reported. For the period (2009-2018) in Department of Surgical disease were admitted totally 12939 patients, but operated 5484 patients (42.3%) of them. All registered cases of intestinal obstruction were 1328 patients (10.3%). The patients with intraoperatively diagnosed BDF and chronic sclerotic cholecystitis were 107(1.9%); females dominated. We registered 8 cases (0.6%) of biliary intestinal obstruction on the level of jejunum and terminal ileum. Two cases were treated surgically by enterotomy with stone extraction alone, 3 patients – enterotomy and cholecystectomy with fistula closure, 1 – bowel resection alone, and 2 patients – bowel resection with fistula closure. In patients with BDF without BI we performed cholecystectomy and fistula closure. Biliary ileus is a rare surgical disease. The golden standard of management is enterotomy with stone extraction, cholecystectomy and obligatory fistula closure to prevent further complications.

Key words: bilio-digestive fistula, biliary ileus

PANCREATIC PSEUDOCYSTS – OUR EXPERIENCE IN DIAGNOSIS AND COMPLEX TREATMENT

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Summary

Pancreatic pseudocyst (PP) formation moreover is a result of collection of pancreatic fluid after episode of acute or chronic exacerbated pancreatitis, trauma or some endoscopic procedures. PP is a side effect in 7% of cases of acute pancreatitis and in 10% to 30% of chronic pancreatitis. It can be complicated by bleeding, obstructive symptoms, or suppuration in 10% to 20% of cases. The purpose of our study was to present our experience in the diagnosis and management of pancreatic pseudocysts and to show our algorithm of surgical and endoscopic treatment of that patients. We performed a retrospective analysis of all cases with PP in patients treated in Department of Surgical diseases at "Dr. Georgi Stranski" University Hospital for a 5 years' period (1st July 2014 - 1st July 2019). We used Gamma code master database to enroll the patients and to make analysis of the results. Were excluded the patients with necrosis and abscess formation after pancreatitis, tumors and parasitic cysts from the study. For the period in Department of Surgical disease were admitted 6488 patients. The patients with PP were 38 (0.4%); 13 (34.2%) of them were treated with open surgery, and 25 (65.8%) underwent endoscopic procedure. In the first group we performed pancreato-cysto-gastro anastomosis (Jurash procedure) or percutaneous drainage with a Petzer drain; in the second – ERCP with papillotomy and stent placement in Wirsungian's duct. Surgical drainage of PP is with better outcome than endoscopic, but the hospital stay and cost of treatment is higher.

Key words: pancreatic pseudocysts, pancreatocysogastro anastomosis, ERCP stenting

GALBLADDER CARCINOMA – OUR RESULTS IN SURGICAL TREATMENT FOR 10-YEARS PERIOD

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Summary

Gallbladder carcinoma (GBC) is a common neoplasia, but with poor prognosis. Predisposing factors for neoplasm development include: gallstones disease over 5 years of age, calcification of gallbladder wall, obesity, primary sclerosing cholangitis, adenoma, papillomatosis, and metaplasia of the epithelium. The aim of our study was to make a retrospective analysis of the results of surgical treatment of patients with gallbladder carcinoma treated in Department of surgical diseases of Medical University Pleven. We used University hospital Gamma code master system for gathering information for retrospective analysis for 10 year period of the patients with GBC, treated in the Department. For the period 2009 to 2018 in First surgical department were admitted totally 12939 patients and 5484 (42.3%) of them were operated. Thirty three patients (0.25% of all admitted) were registered with GBC. Mean age of the patients was 73.5 years old, females predominated. All cases were with adenocarcinoma, but with different TNM stage. These patients were presented with clinical picture of acute or chronic cholecystitis and 27 of them were with mechanical jaundice. All patients underwent R0 radical cholecystectomy and segment 5b liver resection with local lymph node dissection. GBC refers to rare, steady, rapidly progressing tumors with high postoperative lethality, which is difficult to diagnose and treat. It is often found in an advanced stage because of late diagnosis and almost always is combined with gallstones. The most common reason for patient examination is a mechanical jaundice that occurs at the advanced stages of the disease.

Key words: carcinoma, gallbladder, mechanical jaundice

LOCOREGIONAL RECURRENCE OF BREAST CANCER AFTER MASTECTOMY

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Summary

Locoregional recurrences (LRR) after modified radical mastectomy (MRM) poses a challenge, which requires a multidisciplinary approach based not only on factors, specific for the particular recurrence but also on the previous therapy. We investigated the clinic-morphological characteristics and risk factors in patients with LRR after prior MRM, performed for operable breast cancer (Stages I - IIIA). Retrospectively, we studied 39 patients with LRR after previous mastectomies, operated and histologically verified in the clinic of Thoracic Surgery, Military Medical Academy – Sofia from 2011 to 2018. After staging, in all patients, the locus of recurrence was excised. In 2 patients, chemotherapy was used to reduce the cancer size before the operation. In 21 cases, the recurrence occurred locally (in the area of the surgical scar or on the chest wall). In 17 cases the LRR appeared in the axilla, and in one case the recurrence was both local and regional. Alongside with the diagnosis of the LRR, distant metastases were found in 8 (20.6%) of the patients. In 10 patients (25.6%), the recurrence was diagnosed within the 3-year postoperative period. In the rest, 29 (74.4%) recurrences were diagnosed later than the third year after the MRM. Nine of the women were under the age of 40, while the rest 30 (76.9%) were older. Larger dimensions of the primary tumour, four or more metastatic lymph nodes, poorly differentiated and resistant to hormonal therapy tumours, elevate the risk of LRR after MRM younger patients. The prognosis in these cases highly depends on the time between the operation and the appearance of LRR.

Key words: breast cancer, mastectomy, locoregional recurrence

BREAST CANCER IN OLDER PATIENTS

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Summary
The risk of development of breast cancer scales with patients' age. Around one-third of the cases are diagnosed in patients older than 70 years of age. The goal of this study was to investigate the clinical and morphological characteristics and traits in patients older than 80 years of age, diagnosed with breast cancer. We investigated 95 patients older than 80 years, operated in the Clinic of Thoracic Surgery in the Military Medical Academy – Sofia between 2011 and 2018. After pre-operative triple diagnostics was conducted in 31 cases (32.6%) of the cases, an organ-sparing operation was performed, in 29 (30.5%) cases – modified radical mastectomy was chosen, in 12 (12.6%) underwent a simple mastectomy. In another 12 patients, sectoral resection was made with axillary biopsy (sentinel node or sampling), and in 11 (11.6%) – only tumorectomy. The distribution of the patients according to staging was as follows: stage I – 23 patients (24.2%); stage II – 54 patients (56.8%); stage III – 10 patients (10.5%), and stage IV – 8 patients (8.4%). Patients with breast cancer over 80 years old represent a specific and constantly-growing part of the population. The therapeutic strategy in those patients is based on the carefully estimated positive aspects of the therapy and the risks related to it, concomitant diseases, the quality of life, and the will of the patients.

Key words: breast cancer, elderly patients, treatment strategies

BREAST CALCIFICATIONS IN MAMMOGRAPHY: DIFFERENTIATING AND DIAGNOSTIC OUTCOMES

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Summary
Calcifications visualized on mammography are important because they can be the first and earliest sign of malignancy. The American College of Radiology (ACR) classifies breast calcifications into three categories: typically benign, of intermediate concern and with a higher probability of malignancy. This study aimed to differentiate benign from malignant calcifications and to quantify the growth rates of breast cancer and benign breast disease that manifest as mammographic calcifications. We conducted a retrospective study, based on materials published in PubMed for women with pathologically confirmed suspicious calcifications on mammograms from January 2016 to May 2019. The mean age was 50.1 years (age range: 23-82 years). The morphology was as follows: amorphous – 15.9% (10-21%); coarse heterogeneous – 31.7% (30-31%); fine pleomorphic – 58.2% (55-61%); and fine

linear or branching – 90.6% (89-92%). The distribution was as follows: regional – 31.5% (26-35); grouped – 31.3% (28-33%); linear – 50% (46-56%); segmental – 77.9% (71-85%). The relative annual increase in the long-axis length of d carcinoma *in situ* calcifications was greater – 96% (95-98%) than that of benign breast calcifications –68% (64-70%) per year. It is important to detect, evaluate, classify and provide appropriate recommendations for calcifications perceived on mammograms to provide proper management. The rate of calcification change may help to discriminate benign from malignant calcifications.

ENHANCED RECOVERY AFTER SURGERY OR FAST-TRACK SURGERY: APPLICATION IN EMERGENCY ABDOMINAL SURGERY: LITERARY REVIEW

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Summary
We aimed to study "fast-track surgery" and enhanced recovery after surgery (ERAS) protocols and their application in emergency abdominal surgery. Literary research of the accessible databases was conducted. The articles were selected. The application of ERAS and "fast-track surgery" protocols were found having advantages against routine post-operative care. Patient care can be divided into three stages: before, during and after surgery. Each stage needs the active participation of a few or all members of the multi-disciplinary team. The application of ERAS/ "fast-track surgery" reduces the risk of any type of infection, leads to significant reductions of mean length of hospital stay and mortality rate. The introduction of "fast-track surgery" and enhanced recovery after surgery ensure faster recovery of the patients, as compared to conventional care. One of the main problems with the introduction of ERAS/"fast-track surgery" is the need for collaboration between many specialists. ERAS or "fast-track surgery" protocols are undergoing continuous evolution.

Key words: fast track surgery, enhanced recovery after surgery, emergency abdominal surgery

SURGERY FOR MECHANICAL JAUNDICE AFTER UNSUCCESSFUL ENDOSCOPIC TREATMENT

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Summary
The main therapy for mechanical jaundice now starts with ERCP (Endoscopic Retrograde Cholangio Pancreatography) with papillotomy,

calculus extraction or stent placement. However, in some cases, ERCP is unsuccessful, and surgery becomes mandatory. This study aimed to analyze the types of surgical operations and their results. Between 2014 and 2018, 311 patients admitted to Dr Georgi Stranski University Hospital - Pleven had an ERCP for mechanical jaundice. The ERCP was unsuccessful in 66 of the patients. Surgery was performed on 47 patients. Diagnoses, laboratory tests, type of surgery performed, length of stay and complications were analyzed. Males were 25, females – 22. The age of males was 69.7 years (range 48-83), and in females - females – 69.1 years (range 26-80). Mean preoperative levels were as follows: for TBil 187 (15-560), DBil-150 (10-488), and INR-1.1 (0.8-1.5). The operations performed were as follows: choledocho-duodenoanastomoses – 23, cholecysto-gastro-anastomoses – 9, hepatico-duodenoanastomosis – 1, hepatico-gastroansotmosis - 1; Kehr, Trans Tumor and Transcyst Drain – 10, and explorative lap - 3 patients. The average hospital stay was 14 days. Mortality accounted for 13% of the cases (6 patients). Despite the development of invasive endoscopy, mechanical jaundice is still a challenge. Patients are often of advanced age, with multiple comorbidities and/or advanced malignancy.

Key words: mechanical jaundice, surgical treatment, pancreatic carcinoma, bile duct obstruction, choledocho-duodeno-anstomoses

STEVEN JOHNSON SYNDROME AND TOXIC EPIDERMAL NECROLYSIS: A 15-YEARS EXPERIENCE

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Summary

Stevens-Johnson syndrome (SJS), overlap syndrome (OS) and toxic epidermal necrolysis (TEN) are rare urgent medical conditions associated with high morbidity and mortality. These cases are similar to skin loss in second-degree burns. A retrospective review of the SJS, OS, or TEN clinical cases, admitted to the clinic over 18 years was performed. All patients were identified for age, gender, initial and largest affected areas, causal relationship, accompanying illnesses, SCORTEN, duration of stay, treatment, and mortality. Eleven patients aged between 2 and 75 years, mean skin involvement 26% (range 7-51%) and the mean duration of stay 18.6 days (range 4-32 days) were analysed. There was one death case, where the affected area reached 100%, as predicted by SCORTEN. The treatment algorithm focused on early targeting of a burn clinic, immediate removal of the causative agent, resuscitation with water-salt solutions, bio-products, nutritional supplements, and thorough wound care. The average transfer time to a burn unit was 2.2 days. The antimicrobial silver-releasing dressings were applied to the affected skin surface and changed every three days. Pathogenic treatment included steroids and immune-related therapy. Antibiotics were administered only when there was evidence of infection. Mechanical ventilation was required in two patients. In patients with a complete resurfacing of skin lesions at home, the time for healing was 14 days on the average. Late consequences - severe keratitis were registered in 4 patients after one year. The information obtained from this review can help doctors involved in the treatment of patients with these diagnoses.

Key words: toxic epidermal necrolysis, Stevens-Johnson syndrome

SURGICAL EXCISION WITH VERSAJET (TM)

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Summary

Surgical closure of a wound in case of lacking tissue or a 3rd-degree burn requires removal of the necrosis. In 2004, a new technique was introduced for controlled surgical debridement - Versajet TM, using the Venturi effect. The goal of this study was to set the parameters to use Versajet TM, compared with the conventional methods for debridement. We performed debridement on ten patients that had burns with necrosis with Versajet TM with different power. The wounds were from 0.5 to 5%. The control group included five patients, to whom the surgical excision was done by a Humby dermatome. There were no complications in the experimental group. The bleeding was put under control faster, as compared to the standard surgical excision. The thin necrosis was removed fast and precisely. The excised surface was smooth; the wound base was with the same tissue characteristics. After removal of the necrosis, there no infection of the wound registered, as well as postoperative infections or complications. In the controlled group, the conventional knife for cutting did not allow proper correction in the areas with critical skin thickness. The above results warrant the assumption that the system Versajet TM ensures safe preparation of the wound and debridement. When performed with a good wash, under high pressure and with a sterile saline solution, it cleans the wound surface much better than the widely used conventional methods.

Key words: burns with necrosis, Versajet TM

INHALATION DAMAGE DURING AN INCINERATION EVENT INCREASES THE RISK OF FATAL OUTCOME

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Summary

Determinants of incineration mortality are the incineration rate, age, and the presence of inhalation injury. Inhalation damage increases the incidence and mortality of survivors from incineration. This study aims to share our experience and results in patients with inhalation burn injury. Twenty-eight patients with incineration disabilities were treated in the incineration clinic for ten years. The mean amount of skin damage was 42%. All patients were accommodated in fluid-bed resuscitation, and invasive intubation was necessary within the first 24 hours of the stay. Bronchoscopy with diagnostic and curative purpose – lavage was done on a daily basis. The first 24 hours of lung radiographs did not detect any changes. Fifteen patients developed pneumonia, which aggravated the course of the disease. Tracheostomy was required in 14 patients. All patients received inhalation therapy with corticosteroids, mucolytics and bronchodilators. Duration of stay in the ward was 33 days. The children followed up in the pulmonary ward had a normal FID after three months. The outcome was fatal in 71% of patients. Resuscitation efforts change significantly due to the presence of inhalation injuries. There is no consensus among the leading incineration centers about the optimal mechanical ventilation modes for these patients. Any study in this direction would make it possible to produce an algorithm.

Key words: burns, inhalation damage

STUDY ON THE TUMOUR IMMUNE MICROENVIRONMENT IN DIFFERENT SUBTYPES OF BREAST CANCER

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Summary

The study aimed to investigate the immunohistochemical (IHC) expression of some immune checkpoint molecules in different subtypes of breast cancer (BC). Retrospectively, 100 cases of invasive BC were analyzed, and IHC stratified in four subtypes (Luminal A and B-like, HER2-positive, and triple-negative (TN), using ER, PgR, HER 2 and Ki-67 ICH expression. The samples were IHC-stained also for PD-L1 and CTLA-4, whose expression was assessed in tumour and immune cells (TC and IC). PD-L1 expression in the TC and among stromal lymphocytes was found mainly in TNBC ($p=0.0174$ and $p=0.0001$, respectively), compared to other BC subtypes. CTLA4 expression in the TC and IC was more common in Luminal A and HER2-positive BC ($p=0.0001$ and $p=0.0024$, respectively). The tumoral and lymphocytic expression for CTLA4 was predominant in the studied cases, compared to the PD-L1 expression. A high concentration of intratumoral FoxP3+ regulatory T-lymphocytes in TNBC was significantly related to PD-L1 positivity in TC, compared to the low FoxP3 intratumoral number of cells ($p<0.0001$). PD-L1 expression in TC and IC should be examined mainly in TN, while CTLA4 expression - predominantly in Luminal A and HER2-positive BC. CTLA4 was expressed more frequently than PD-L1 in BC, which proposes that CTLA-4 is a more important checkpoint marker in BC. There is a relationship between a high concentration of intratumoral FoxP3+ regulatory T-lymphocytes and tumoral expression of PD-L1 in TNBC, suggesting their synergistic effect in suppressing the immune response in this subtype BC.

Key words: breast cancer, immune "checkpoint" molecules, programmed death ligand 1 (PD-L1), cytotoxic T-lymphocyte antigen 4 (CTLA-4), foxP3 regulatory T-lymphocytes

LYMPHOEPITHELIOMA-LIKE CARCINOMA OF THE BREAST – A RARE HISTOPATHOLOGICAL VARIANT: A CASE REPORT

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Summary

Lymphoepithelioma-like carcinoma (LELC) of the breast is an extremely rare morphological variant. Only single cases are reported in scientific papers published in English. Morphologically, LELC is characterized by the presence of nests of malignant epithelial cells, surrounded by a dense, diffuse lymphoid infiltrate in the stroma. We present a rare case of breast cancer and discuss the possible differential diagnosis in such cases. A 78-year-old female patient presented with a palpable lump in her right breast and a firm mass in her right axilla. Ultrasound examinations, CT scan, core needle biopsy and total mastectomy with axillary dissection were performed. The tumour was morphologically

diagnosed with immunohistochemistry. Microscopic examination of the tumour revealed the presence of poorly defined nests and strands of undifferentiated epithelial tumour cells, admixed with prominent lymphoplasmacytic inflammatory infiltrate. Immunohistochemical staining of the neoplastic epithelial cells demonstrated positivity for epithelial markers and was negativity for ER, PgR, HER2, AR, p63, CK5/6. The lymphocytes were predominantly CD3 positive, with focal CD20 positivity. The differential diagnosis included medullary, metaplastic, and lobular carcinomas of the breast, as well as primary breast lymphoma. This case represents a scarce variant of breast cancer. The morphological diagnosis is based upon a thorough histological and, additionally, immunohistochemical examination.

Key words: breast carcinoma, lymphoepithelioma-like carcinoma, immunohistochemistry

PEDIATRICS AND MEDICAL GENETICS

PLENARY LECTURE

IMPLEMENTATION OF LABORATORY GENETICS IN NORTH-EAST BULGARIA DIAGNOSTICS IN THE GENOMICS AGE

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Summary

The Laboratory in Medical Genetics in Varna turned 16 years in June 2019. It was founded as a genetic center, based in the University Hospital "Saint Marina" to provide patients and their families with qualified laboratory genetic tests and counseling. The aim of this announcement is to present the structure and the dynamic activity from foundation in 2003 to present days and upcoming perspectives. The molecular-cytogenetic section had gradually introduced conventional chromosome analysis of lymphocytes (2003), bone marrow (2004), amniocytes (2006), fibroblasts (2012) and fluorescent in situ hybridization (FISH) analysis (2016) of onco-hematological diseases. The biochemical screening section was the first out-capital division (2005) involved in mass genetic prevention in our country. The molecular – genetic division for genetic predispositions and DNA banking of patients with rare diseases started in 2014. Hematopoietic stem cell transplantation started in 2015 at the Centre of Translational Medicine and Cell Therapy. From