MEDIJSKI POKROVITELJ

Medix

(MIS) UNDERSTANDING BETWEEN PATHOLOGIST AND CLINICIAN IN THE NEW ERA OF DIAGNOSTIC MEDICINE

29th LJUDEVIT JURAK International Symposium on Comparative Pathology with One Health Session

June 7 - 8, 2024 / ZAGREB, Croatia, Hotel Academia

ABSTRACT BOOK

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Reza Alaghehbandan (USA)
Isabel Alvarado-Cabrero (Mexico)
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Dear colleagues,

The Organizing Committee cordially invites you to Zagreb to take part in the **29th Ljudevit Jurak International Symposium on Comparative Pathology**. This symposium encourages international collaboration and involves a wide array of professionals within the field of pathology.

In the era of molecular medicine and new developing techniques communication between clinicians and pathologists, as well as integration and interpretation of the pathology report is crucial. So, this year's topic is dedicated to the importance of sharing information, which is needed to provide modern care for our patients.

Traditionally, what separates and defines this symposium is collaboration with veterinary pathologists and the comparison of pathologic changes in human and veterinary medicine. With this symposium, we honour Professor Ljudevit Jurak, who founded the first pathology department in Croatia, in Sestre milosrdnice University Hospital Center. Professor Ljudevit Jurak contributed greatly to veterinary and human pathology as well as forensic medicine, and represents a historical and eminent figure in the field of pathology both in Croatia and worldwide (https://www.kbcsm.hr/jurak/category/simpoziji/).

All pathologists dealing with human and veterinary pathology as well as forensic pathologists are invited to participate in this multidisciplinary meeting and engage in a variety of discussions, social gathering and enjoyment.

POSTER SESSION: We also invite all interested colleagues to send their abstracts about the main topics, as well as other surgical pathology and forensic topics, for the poster presentation.

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Lectures

Poster Presentations

Lectures
L1 - L14

29th LJUDEVIT JURAK
International Symposium
on Comparative Pathology
with One Health Session

L1 THYROID PAPILLARY CARCINOMA - STILL MYSTERIOUS AFTER ALL THESE YEARS?

Aleš Ryška

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PTC is the most common endocrine malignancy in both the adults and pediatric patients. PTC diagnosis requires either papillary or solid/trabecular architecture, or invasive growth in follicular-patterned tumors. It represents 80%-85% of all thyroid malignancies in adults and 90% in pediatric patients. The incidence of PTC has been increasing worldwide in the recent decades across all age groups (e.g. in the USA, the incidence rates of PTC have almost quadrupled between 1975 and 2016). PTC illustrates well the shift in the view of cancer classification in the last few decades. The new VHO classification seeks to favor a classification view that is clinically relevant and directly influences patient management rather than a exclusively morphological view. Historically, papilloma carcinoma has been defined by the presence of typical papillae lined by cells with optically empty nuclei. After the follicular variant of papillary carcinoma was introduced, the first significant increase in the incidence of papillary carcinoma occurred worldwide. Other reasons leading to the additional increase in incidence were the more extensive sampling of thyroid resection specimens and the refinement of clinical diagnostic algorithms with the introduction of ultrasound, which can identify even tumors at a subclinical stage (occult carcinomas). As a result of the above circumstances, an increase in the incidence of PTC has been observed, however, without being accompanied by an increase in mortality. Thus, pathologists identify a significant proportion of tumors with clinically non-aggressive behavior. These are mainly small-sized carcinomas (half of the diagnosed PTCs are smaller than 10 millimeters) and tumors with a harmless phenotype. Thus, in a significant proportion of patients, detection of these clinically indolent tumors has led to an unnecessarily aggressive therapeutic approach.

A major contribution to the understanding of PTC is the knowledge of molecular pathology. From the genetic point of view, these tumors can be distinguished into 2 basic categories-BRAF-like and RAS-like tumors. These molecular profiles correlate with the histologic growth pattern; tumors with the presence of papillae fall into the BRAF-like category, whereas PTCs with follicular growth belong to the RAS-like family. The new WHO classification attempts both to incorporate molecular genetic findings and to provide a classification that is clinically relevant and avoids unnecessary overtreatment of patients. The biggest change comes in the area of follicularly arranged PTCs. The original follicular variant of PTC breaks down into 4 clinically quite distinct entities - on one side the indolent NIFTP, on the other side the highly aggressive infiltrative FVPTC. Encapsulated tumors with papillary nuclei are classed as FVPTC only if transcapsular or vascular invasion is demonstrated. They are then referred to as invasive encapsulated FVPTC. If we find the presence of papillae in an encapsulated follicularly arranged tumor with papillary nuclei, it is classified as classical subtype of PTC with predominantly follicular growth pattern. The degree of aggressiveness is mostly determined by the extent of invasion, especially blood vessel invasion. For this reason, NIFTPs have an indolent behavior, and conversely, infiltrative FVPTCs behave most aggressively. The second factor worsening the prognosis are secondary mutations arising during tumor pathogenesis. These include, for example, mutations in the TERT promotor (pTERT), which increase the likelihood of hematogenous metastasizing.

In conclusion, the histopathological classification of PTC is rather dynamic process, constantly evolving to integrate the latest advancements in our understanding of this malignancy. The 2022 WHO classification system represents a significant step forward, promoting diagnostic accuracy, guiding treatment decisions, and informing patient management strategies. As research continues to unveil the complexities of PTC biology, we can expect further refinements in the classification system, paving the way for even more effective and personalized care for patients.

L2 ZOONOTIC DISEASES IN A VISUAL FORMAT FOR BOTH PATHOLOGISTS AND CLINICIANS: A PICTURE WORTH A THOUSAND WORDS

Fabio Del Piero

Louisiana State University, School of Veterinary Medicine

In veterinary medicine, human medicine, biological sciences in general and many other scientific disciplines, the communication and learning process is greatly facilitated using as many iconographies as possible. Comparative pathology is a field characterized by the collection of samples, but also numerous images capturing the diagnostic phases from clinical signs to macroscopic and microscopic lesions, and histochemical, immunohistochemical, and *in situ* hybridization results, as well as other visual forms of molecular diagnostics. Considering that the pathologist is the case coordinator, ancillary procedures such as microbiology and toxicology are often associated with our diagnostic and research process, and microbiological findings can also be presented through a rich iconography. The now common use of slide scanning and the progress in digital pathology made the pathology presentation even more effective and it has become common to have slide seminars with digital presentations using whole slide images instead of glass slides (great quality glass slides remain needed for it). The reputation and personal pride of a pathologist engaged in teaching is also based on the quality and quantity of the iconography collection collected over the years. For several of us, it has been a very interesting and challenging journey being born using transparencies and glass slides and now benefiting from all the possible digital bells and whistles. One of the effective ways to present the various infectious diseases to a competent audience is to start from the agent characteristics followed by the agent distribution in the various tissues, histologic and gross lesions, and consequent clinical signs. Nonetheless, the opposite process, starting with clinical signs, followed by gross and histologic lesions, distribution, and agent description is what has been generally utilized and is still used in presentations of single cases or disease outbreaks. A similar effective mainly visual format (e.g. agent → agent distribution → lesions → clinical signs and comments; a sequence that is reversable-modifiable) will be used to present important viral, bacterial, protozoal, fungal, algal, and parasitic zoonotic diseases including rabies, arboviral encephalitides, salmonellosis, chlamydiosis - psittacosis, Q fever, mycobacterioses, bartonellosis, anthrax, plague, brucellosis, Listeriosis, colibacillosis, campylobacteriosis, blastomycosis, histoplasmosis, coccidioidomycosis, paracoccidioidomycosis, protothecosis, trichinellosis, taeniases and other zoonotic diseases. Interestingly, some are also bioterrorism agents.

L3 DECODING 2022 WHO RENAL TUMOR CLASSIFICATION A Simplified Risk Stratification System

Reza Alaghehbandan

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Robert J. Tomsich Pathology and Laboratory Medicine Institute, Cleveland Clinic

Cancer pathology reports can be complex due to multiple data elements, variability in terminology, and increasing recognition of emerging diagnostic entities. However, treatment may be significantly influenced by histologic subtype, tumor grade, and pathologic stage. The current 2022 WHO classification of renal tumors has presented us with more diversity and complexity of renal neoplasia. Yet, this has led to many problems for preoperative risk stratification, because it is challenging for clinicians and even general surgical pathologists to keep up with the expanding number of distinct renal entities. Among renal cell carcinomas (RCCs), various subtypes demonstrate significantly different clinical behaviors, ranging from exceedingly low risk of aggressive behavior to rapidly progressive. Thus, there is a great need to consider revisiting and decoding the existing entities in support of both urology and pathology communities and more importantly the patients. This can be achieved by creating a simplified risk stratification system for clinical decision making. This presentation will focus on highlighting a four-tiered system ("rapidly progressive RCC", "RCC with long-term metastatic risk", "indolent RCC", and "very low-risk renal neoplasia"), which will enhance clinical decision making and optimize clinicians-pathologists communications.

L4 CROSS-SPECIALTY COMMUNICATIONS IN PROSTATE CANCER Optimizing Pathology Report in Support of Clinical Decision-making

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Our understating of prostate cancer has significantly evolved over the last number of decades. Prostate cancer pathology report can be complex, with multiple data elements including grade, measurements, and subtypes. This presentation will focus on highlighting parameters that have most clinical relevance in patient management and clinical decision-making. It is important that pathology report is accurate, precise, and complete. However, it is also crucial that pathology findings are effectively communicated to the clinician and correctly interpreted by them. Key parameters that affect management of prostate cancer in the biopsy setting include Grade Group, cribriform/intraductal carcinoma, percentage of pattern 4, and sometimes extent of involvement. Histologic subtypes mostly do not affect management, with exception of high-grade neuroendocrine carcinoma. The recent Grade Group system offers many improvements, but further optimization based on specific histologic patterns (i.e., "favorable" vs. "unfavorable") are needed and evolving.

L5 ENDOMETRIAL CANCER MOLECULAR CLASSIFICATION AND THE UPDATED 2023 FIGO STAGING

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Endometrial Cancer (EC) is the most common gynecological malignancy in the US with an estimated 66000 new cases (2022 estimates) annually. Studies project that by 2030, EC will surpass colorectal cancer, making it the third most common and the fourth leading cause of cancer-related deaths among women.

In 1983, Bokhman described two different clinical types of EC: type 1 (65% of cases) occurred in obese, premenopausal, or postmenopausal women with unopposed estrogen and type 2 (35%) were older and had adjacent atrophic endometrium or atrophic endometrial polyps. Refined histopathologic features and molecular genetic alterations have been added. Type 1 EC (80%) are endometrioid carcinomas with mutations of PTEN, KRAS, CTNNB1, PIK3CA and microsatellite instability, whereas type 2(20%) includes not only serous carcinomas, but also, clear cell carcinomas and carcinosarcomas.

Newer risk stratification models aimed at improving algorithms for patients with EC are centered around uterine factors and molecular classification. Uterine histopathological features and cancer stage are important factors of risk stratification in endometrial cancer (EC). Grade, depth of invasion, presence, or absence of lymphovascular space invasion, tumor size, and lower uterine segment involvement are all prognostic factors for survival and recurrence.

The International Federation of Gynecology (FIGO) staging system has been a critical tool in determining treatment decisions and predicting prognosis for EC. Surgical staging total hysterectomy, bilateral salpingo-oopherectomy along with pelvic and para-aortic lymph node dissection are recommended for patients with type 1 endometrial carcinomas. Additional procedures such as omentectomy, peritoneal biopsies and peritoneal washings are generally reserved for non-endometrioid cancer.

Endometrioid carcinomas account for approximately 85% of all EC. Most endometrioid carcinomas (70%) are grade 1 and grade 2. Conversely, non-endometrioid carcinomas which includes subtypes such as serous, clear cell, carcinosarcoma and undifferentiated carcinomas account for about 20-25% of all endometrial cancers. These cases often have a poor prognosis.

Molecular subgroups

EC with POLE mutations are rare, accounting for around 3% of all endometrioid carcinomas and approximately 2% of all endometrial carcinomas. Endometrioid carcinomas with MMR deficiency represent around 24%- 37% of endometrial carcinomas. These cases represent the second most common cancer encountered in patients with hereditary non-polyposis colon cancer syndrome (HNPCC, Lynch Syndrome). In sporadic EC, MMRD is most often due to homozygous hypermethylation of the MLH-1 gene promoter. In contrast, Lynch Syndrome results from germline mutation of DNA mismatch repair genes (MLH-1,MSH2, MSH6, PMS2). Carcinomas in these patients are more frequent present in the lower uterine segment.

The so-called copy number low or no specific molecular profile subgroup is the most common. This group of tumors is the default grouping for tumors without a POLE mutation, abnormal TP53 or dMMR/MSIH. Genomically, they are relatively stable and accounts for 39%-68% of the endometrial carcinomas. Patients have an intermediate prognosis.

Endometrial carcinomas with high somatic copy number alterations account for 4% of all EC cases, have a low mutation rate (2.7 x10-6 mutations per MB) and TP53 mutations. Morphologically these

tumors are high grade (grade 3) ECs. Patients have poor prognosis with recurrences and peritoneal dissemination, similar to serous carcinomas. Recently, TCGA molecular subgroups have been integrated into the 2023 FIGO staging classification

Treatment for endometrial cancer is rapidly evolving with the development of molecular analysis and novel strategies. Precision based approaches for tumors are becoming part of these strategies.

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L6 MOLECULAR CHARACTERISTICS AND CLINICAL BEHAVIOR OF EPITHELIAL OVARIAN CANCERS

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Ovarian cancer is the second-highest cause of death among all gynecological cancers. The estimated number of new cases in Europe in 2020 as 66693 with 44053 deaths. More than two thirds of patients are diagnosed at advanced stage.

More than 90% of malignant ovarian tumors are carcinomas (also known as epithelial ovarian cancer). The most common and most lethal tubo-ovarian carcinoma is high-grade serous carcinoma.

High-Grade Serous Ovarian Carcinoma (HGSOC)

HGSOC is the most common histologic subtype of carcinoma arising in the ovary and fallopian tube. They account for the greatest number of deaths from malignancies of the female genital tract in North America and Europe. Over the past decade, it has become appreciated that most extrauterine HGSCs, which previously were considered to be primary ovarian neoplasms, arise from the epithelium of the fimbrial end of the fallopian tube.

High-grade serous carcinoma (HGSC) is associated with hereditary breast and ovarian cancer syndrome. Approximately 10 to 18% of serous carcinomas are associated with BRCA1 or BRCA2 germline mutations.

Low-grade Serous Ovarian Carcinoma (LGSOC)

This is an invasive, malignant low grade proliferative neoplasm (median, 43 years). The disease may pursue and indolent course initially, with relative prolonged overall survival (median overall survival, 81.8 months), but ultimately most patients with advanced-stage disease die of progressive disease. Most LGSOC arise in the ovary and develop from benign serous tumors and serous borderline tumors.

The distinction between LGSC and HGSC is based on a combination of morphology and p53 immunohistochemistry, mutations in KRAS or BRAF are common in LGSC and TP53 mutations are frequent in HGSC.

LGSC and HGSC should be regarded as two different tumors with two distinct underlying molecular events and behavior and do not represent different grades of the same tumor type. In cases of morphology suggestive of LGSC but aberrant p53 protein expression and/or TP53 mutation, it is recommended that tumor be classified as HGSC.

Serous Tubal Intraepithelial carcinoma (STIC)

The frequency of STIC detected in risk-reducing bilateral salpingo-oophorectomies (RRBSOs) in hig-risk populations (patients with a BRCA-muts) is quite variable (0.4-8.5%) but 10-fold higher than in low-risk populations. STICs associated with microscopic invasive HGSC may be the source of peritoneal HGSC and, therefore, should be managed as HGSC.

In patients with STIC, hysterectomy should e considered particularly in patients with a gBRCA1-mut. On the other hand, lymphadenectomy and adjuvant chemotherapy are not recommended in surgically staged STIC.

High-Grade Ovarian Serous carcinoma. Molecular and Genomic tests.

BRCA-mut (germline and/or somatic) testing is recommended at diagnosis for patients with this carcinoma type regardless of the stage. Routine tumor testing for non BRCA homologous recombination gene mutations is not required, but, it should be encouraged in the research setting.

Genomic instability tests are recommended in patients with BRCA wild-type high grade non mucinous FIGO stage III-IV tubo-ovarian carcinomas at diagnosis, as this provides useful predictive information for first-line maintenance therapy decisions.

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L7 REVISED ENDOMETRIAL CANCER CLASSIFICATION: A CLINICAL PERSPECTIVE

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New molecular markers and their surrogates have recently transformed and enhanced the understanding of endometrial cancer prognosis. The latest guidelines for endometrial cancer management now incorporate both clinical and pathological tumor characteristics, along with risk assessments based on molecular subtypes (1). However, the traditional surgical-anatomical-pathological FIGO classification remains the primary prognostic tool in research-limited settings where molecular tumor profiling is not available. In addition to refined pathohistological and molecular tumor characteristics, the new FIGO 2023 classification also includes changes to traditional anatomical borders and the status of lymph node involvement (2). In terms of surgery, total hysterectomy with bilateral salpingo-oophorectomy is the primary treatment. Depending on specific circumstances, surgery also involve removal of all macroscopically visible diseases and biopsy of suspected lesions. Preoperative clinical and pathological risk assessments determine whether lymphadenectomy is needed for staging purposes. Conventional approaches to lymph node removal include routine systemic pelvic lymphadenectomy, routine sentinel lymph node biopsy, or systemic lymphadenectomy in high-risk cases. In the early stages of the disease, lymph node removal can be omitted when there is no risk of metastasis. Following surgery, tumor biology stands out as a strong prognostic determinant. Among four main molecular groups, POLE-mutated tumors generally exhibit the most favorable prognosis and frequently do not necessitate adjuvant treatment. Conversely, the presence of p53 mutations indicates more aggressive tumor behavior, mandating a multidimensional approach to adjuvant therapy. MSI-H tumors may offer promise since they may be responsive to immunotherapy, and copy number-low tumors and associated mutations in PTEN exhibit intermediate prognosis (3). In the era of molecular profiling, managing endometrial cancer presents significant challenges. As this approach becomes more widespread, personalized treatment strategies and ongoing research are crucial for improving outcomes in endometrial cancer management.

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L8 CLINICAL CONSIDERATIONS IN THE TREATMENT OF EPITHELIAL OVARIAN CANCER

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Ovarian cancer, the gynecologic malignancy with the highest mortality rate, is the third most common gynecological cancer (1). The disease predominantly presents with nonspecific clinical symptoms and it is most commonly diagnosed at an advanced stage, significantly affecting fertility in patients of reproductive age. The predominant histological subtype is epithelial cancer, followed by germ cell and sex cord-stromal tumors. Treatment typically involves surgical staging, cytoreductive surgery, and adjuvant chemotherapy in most cases. The decision to administer neoadjuvant chemotherapy depends on histological confirmation of specific subtypes from biopsy or diagnostic laparoscopy specimens, or in patients for whom cytoreductive surgery is not recommended (2). The standard therapeutic strategy for peritoneal disemination is a combination cytoreductive surgery and systemic chemotherapy with taxanes and platinum derivatives. Although the extensiveness of cytoreduction is the most important prognostic factor, the selection of an optimal treatment strategy for advanced peritoneal carcinomatosis (PC) remains an important concern. The role of other treatment methods, such as hyperthermic intraperitoneal chemotherapy (HIPEC), which targets tumor tissues with high concentrations of cytotoxic drugs while reducing systemic toxicity, is still being evaluated, especially in patients undergoing neoadjuvant chemotherapy and interval debulking surgery (3, 4). Over the decades, the overall incidence of ovarian cancer and the consequent mortality rate have decreased, primarily due to the use of oral contraceptives, which are predicted to reduce ovarian cancer mortality by 10%. Other factors that positively influence ovarian cancer survival include chemotherapy with platinum derivatives, taxanes, and more recently, gemcitabine, as well as the application of intraperitoneal chemotherapy, bevacizumab, and PARP inhibitors for women with BRCA mutations. However, enhanced preoperative diagnostics detect an increase in the percentage of stage IV ovarian cancer, with a prevalence of 20%. Careful selection of patients and engagement of a multidisciplinary team to customize the treatment strategy enhance the prognosis of patients diagnosed with ovarian cancer.

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L9 PROSTATE CANCER – PATHOLOGY REPORT THROUGH THE EYES OF THE UROLOGIST

Tvrtko Hudolin

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Surgery is considered the gold standard for treating localized prostate cancer, particularly for younger patients in generally good health. Pathological assessment of the removed tissue is essential for accurately grading and staging prostate cancer. Urologists rely heavily on pathologists' findings to make decisions regarding further treatment and patient follow-up, as well as to evaluate the quality of their surgical procedures. Collaboration between urologists and pathologists should be direct and continuous, starting with the prostate biopsy and extending through intraoperative consultations to the detailed analysis of all removed tissue. Beside routine pathological staining, it should also include additional analyses, preferably also for scientific research projects. Better collaboration will yield more comprehensive information, ultimately improving patient outcomes.

L10 MONITORING SALMONELLA IN MULTIPLE ANIMAL SPECIES IN NEAR-REAL TIME USING LABORATORY SUBMISSIONS: RECENT TRENDS, PATTERNS AND LESSONS LEARNED IN WORKING WITH BIG DATA

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With an estimated total number of 1,350,000 cases of human illness in 2014 in the United States of America alone (1), non-typhoidal Salmonellosis represents a considerable threat to public health. Proportionally lower due to smaller population, a Canadian study reported similar estimates (2). Approximately 94% of domestically acquired cases were reported to be attributable to food-borne sources (3). Most reported cases of human non-typhoidal Salmonellosis result in self-limiting gastro-intestinal illness; however, severe cases of human illness as a result of invasive non-typhoidal *Salmonella* disease occur in humans with the global number of cases estimated at 535,000 in 2017 (4). Incidence of invasive non-typhoidal *Salmonella* disease in people has important regional differences, and high-risk groups include young children, elderly, and people with HIV infection (4).

Numerous animal species can also be infected with *Salmonella*, and such infection could result in different clinical presentations at the individual-animal level including subclinical infection, gastro-intestinal illness, and more severe systemic presentations. Ecology of *Salmonella* infection in food-producing animals is of particular interest because they are commonly raised in large populations with frequent contacts, sometimes with different age groups in open populations. Uninterrupted transmission of *Salmonella* infection in such populations results in risks for food safety, and risk of exposure for agricultural workers. When the infection results in clinical disease, it can represent a serious risk for animal health and welfare which requires a systemic approach at the level of the individual premises or entire production systems. Thus, monitoring frequency and serotype distribution of *Salmonella* over time is of interest for multiple end users of animal health data, with different factors motivating various end users. During the COVID-19 pandemic, representing aggregated human health data in real-time was common for many jurisdictions and raised expectations of end users of health data, including the end users of the animal health data.

The primary objective of this work is to report on the development of the system for near-real time analysis and visualization of *Salmonella* frequency and serotype distribution in swine, cattle, and poultry in the province of Ontario, Canada. The secondary objective of the study is to provide preliminary results of testing for *Salmonella* in the three animal species based on developed visualization and factors on which aggregated data are stratified.

The Animal Health Laboratory (AHL) at the University of Guelph (Ontario, Canada) was the source of data. AHL is the largest animal health laboratory in Canada with respect to number of tests conducted in food-producing animals. The source population for this report were swine and cattle herds and poultry flocks in Ontario that submitted to AHL at least once between 2015 and 2024. During the submission process, clients use species-specific AHL submission forms and in general indicate basic demographic information of premises and animals, brief history with clinical presentation, diagnostic assays requested, sample information, any special instructions, and contact information. Samples undergo standard bacteriological culture procedures, which includes direct plating and enrichment procedure for *Salmonella*. Recovered *Salmonella* isolates, typically one per submission or more in the presence of epidemiological or bacteriological indicators, are sent to the Public Health Agency of Canada (PHAC) for serotyping. Results of testing at the sample level are classified into a *Salmonella*-positive samples through direct isolation, *Salmonella*-positive after enrichment, and *Salmonella*-negative if a sample underwent bacteriological culture but *Salmonella* was not detected. Sample-level results are aggregated into submission-level results, and presented as a time-series graphs, which could be further stratified according to basic demographics, reasons for submission, and commodity groups.

The number of submissions tested for *Salmonella* increased over time in swine and cattle. The vast majority of swine submissions

were for diagnostic purposes and most frequently originated from nursery and nursing pigs. On an annual basis, the percent positivity (either direct isolation or from the enrichment) varied between 29.4% and 35.8%. Similarly, almost all submissions tested for cattle were submitted for diagnostic purposes, and the majority came from dairy cattle. As expected, most common serotypes detected varied by the animal species.

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L11 ORAL PATHOLOGY IN COMPANION ANIMALS (LOOKALIKES AND PRETENDERS)

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USA

An accurate diagnosis is essential to treatment planning. The pathologist plays an essential role in reaching that diagnosis in many cases of oral pathology. However, the pathologist cannot make correct diagnoses in a vacuum. In the oral cavity, lesions may arise from any of several different tissue lines, by different mechanisms, and may be complicated by a confluence of etiologies. Extra-oral clinical signs, historical or biochemical abnormalities may provide valuable information and help to get the pathologist "in the right chapter" to get to the answer.

Epithelial lesions may be inflammatory, neoplastic or auto-immune in nature. Depending on the location, these lesions may influence the adjacent tooth or bone, complicating the clinical picture. Odontogenic lesions may comprise epithelium, mineralized matrix, or tissues of ectomesenchymal origin (dental follicle and dental papilla). Since oral lesions often go undetected and are found only on anaesthetised exam, it can be difficult to know whether the bone, tooth, or epithelial tissues were the original site of the lesion. In addition, there is often overlap in both the gross and histologic appearance of these lesions, necessitating a thorough approach.

Inflammatory lesions may result from response to plaque bacteria, trauma due to malocclusion, cytotoxicity or may be immune-mediated. Clinically, an inflammatory lesion and an invasive neoplastic lesion may have a similar appearance. A single sample may be insufficient to distinguish periodontitis from aggressive juvenile periodontitis, chronic gingivostomatitis, or lupus or a pemphigoid disease. Similarly, a soft tissue sample overlying a bony neoplasm may lead to an inflammatory rather than neoplastic diagnosis, changing or delaying curative treatment. The sample submitted may miss the core lesion or may be a localised inflammatory response to the underlying process.

The clinician is best served by communicating the entire clinical picture to the pathologist, as well as their differential diagnosis list. Similarly, if what appears on the slides does not seem to match that clinical picture, communicating the reasons for overlap may help the clinician in opting to pursue a given treatment plan, or to obtain new samples to help arrive at the best diagnosis and therefore the optimal treatment plan for that patient.

L12 MELANOCYTIC PROLIFERATIONS – FROM MORPHOLOGY TO UNDERLYING GENETIC CHANGES

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Based on cumulative sun damage and molecular genetic events, nine different pathways of melanocytic proliferations have been separated in the most recent WHO Classification of melanocytic tumours. Melanomas developing in different genetic pathways represent distinct clinic-pathological entities with differences in biological behavior, treatment and prognosis. The aim of the lecture is to review various molecular pathways in the development of melanoma with special emphasis given to the correlation between the morphological features and molecular genetic events.

L13 MYSTERY CASES FROM ANIMAL KINGDOME

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Animal fauna is not merely abundant—it is incredibly diverse. Take mammals alone, with approximately 6,400 different species. Each species exhibits variations in anatomy, physiology, digestion, and lifestyle, all of which influence their response to pathogens and the manifestation of diseases. Veterinarians, especially veterinary pathologists, must navigate this diversity by recognizing key similarities and disease patterns that transcend species boundaries.

In contrast, human pathologists specialize in one species, often focusing on just one or two organ systems, developing a deep and sophisticated understanding within their narrow field. Despite this specialization, there's much to be learned from each other. Veterinary pathologists frequently draw on knowledge from human medicine, borrowing disease nomenclature, classification schemes and adopting diagnostic techniques established in human medicine when applicable.

Conversely, animals serve as valuable models for understanding human diseases when utilized appropriately. Laboratory animals have served this purpose for over a century, while spontaneous models in pet animals, sharing habitats with humans, offer unique insights.

In this mystery slide session, four pathology cases from different animal species are presented in an interactive way to explore and compare aspects relevant to human medicine. This session aims to highlight both the remarkable similarities and the differences between animal and human pathology, fostering a deeper understanding of both fields.

L14 WELLBEING IN THE MEDICAL PROFESSION: A ONE HEALTH ISSUE

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The concept of One Health, emphasizing the interconnection of human, animal, and environmental health, provides a comprehensive framework for addressing the wellbeing of medical professionals on both sides of medicine. Key considerations include psychological and emotional burnout, compassion fatigue, posture fatigue, physical injuries, and the gender gap.

Burnout: Characterized by emotional exhaustion, depersonalization, and a reduced sense of personal accomplishment, burnout affects over 50% of physicians, leading to decreased job satisfaction and increased turnover rates (Shanafelt et al., 2015). In addition, veterinarians are further affected by financial pressures and emotional challenges (Mellanby et al., 2020). Evidence-based interventions, such as workload management, mental health support, and organizational changes, are essential to mitigate burnout and improve overall wellbeing.

Compassion Fatigue: Continuous exposure to patients' pain and suffering leads to compassion fatigue and increased emotional exhaustion, affecting up to 40% of healthcare workers on human side (Figley, 2002), and even more among veterinarians due to the emotional toll of euthanasia and emotional owner interactions (Reeve et al., 2005). Resilience training, counseling services, and mindfulness practices can reduce the impact of compassion fatigue.

Physical Injuries: Due to the demanding nature of their work, medical professionals frequently suffer physical injuries. Over 60% of physicians report work-related physical pain related to musculoskeletal disorders (Frank et al., 2010), and in addition, more than 50% of veterinarians report injuries from animal interactions as bites, kicks, and zoonotic diseases (Fritschi et al., 2009). Ergonomic improvements, safety training, and proper use of protective equipment are critical to prevent and manage these injuries.

Gender Gap: Gender disparities significantly impact the wellbeing of female doctors, who face pay gaps, limited career advancement, family responsibilities, and greater work-life balance challenges (Kogan et al., 2013; Jena et al., 2016). Policies promoting gender equality, mentorship programs, and flexible working conditions are vital to address these disparities.

Addressing the wellbeing of medical professionals through the One Health lens highlights the need for integrated, evidence-based solutions to foster a healthier and more resilient workforce. This presentation aims to provide actionable insights and strategies to enhance the wellbeing of those dedicated to caring for human and animal health, ultimately contributing to better health outcomes for both patients and providers.

Posters

P1 - P36

29th LJUDEVIT JURAK
International Symposium
on Comparative Pathology
with One Health Session

P1 SEROUS CARCINOMA OF THE FEMALE REPRODUCTIVE SYSTEM OF UNCERTAIN ORIGIN

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INTRODUCTION

Diagnosing female reproductive system tumours can be challenging. Ovarian carcinomas, though rare, are highly lethal, often detected at an advanced stage due to asymptomatic growth. Endometrial carcinomas, more common, are often diagnosed at an early stage, presenting as vaginal bleeding.

CASE PRESENTATION

A 59-year-old female presented with abdominal pain and bloating for the last two months, without metrorrhagia. Gynaecological examination was normal, but transvaginal ultrasound showed thickening of the endometrium without detectable blood flow. Ovaries weren't visible due to meteorism. Tumour markers CA 125 and HE4 were significantly elevated and CA 19-9 and CA 15-3 were slightly elevated. ROMA index was high (95.9 %). Computed tomography showed a hypotrophic uterus without visible focal lesions, free fluid in the abdomen and tumour infiltration of the visceral fat tissue in the upper abdomen along with muscles of the anterior abdominal wall, whereas ovaries were not described. Pap smear showed suspicious glandular cells of possible extrauterine origin. Fractional curettage and laparoscopic exploration, including right adnexectomy, left partial salpingectomy and peritoneal biopsy, were performed. Cytology of ascites fluid revealed papillary clusters of malignant serous cells. Pathohistological examination showed adenocarcinoma in the endometrium, both fallopian tubes and peritoneum. Tumour was composed of solid, papillary and glandular formations, lined by atypical, highly polimorphous epithelial cells with hyperchromatic nuclei. Focal squamous differentiation was present. Immunohistochemical analysis showed partial serous differentiation of the tumour, but markers specific for certain gynaecological sites were negative. Tumour cells displayed diffuse positivity for p53 and p16, estrogen receptor (ER) was positive in 90% of tumour cells, whereas vimentin, WT1 and progesteron receptor (PR) were negative. Proliferation index Ki-67 was heterogenous, reaching 80% in hot spot. Areas of squamous differentiation showed positivity for CK5/6.

CONCLUSION

Despite broad possibilities of diagnostics and analysis of tumour tissue, distinguishing cancers of the female reproductive tract, especially in advanced stages, poses a challenge. In this case, considering the partial serous differentiation, the patient was treated with chemotherapy according to the protocol for serous carcinoma.

P2 UROTHELIAL RESTS IN THE VERMIFORM APPENDIX

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INTRODUCTION

Urothelial rests, also known as Walthard cell rests are benign entities most commonly found in female genital tract. To the best of our knowledge, there are only five reported cases of Walthard cell rests in the vermiform appendix.

CASE REPORT

We report a case of a 19-year-old male who presented with clinical symptoms and radiological signs of acute appendicitis. The patient underwent laparoscopic appendectomy. Vermiform appendix measuring 7.5 x 0.8 cm was submitted for histologic evaluation.

Microscopic analysis revealed dilated appendiceal lumen filled with suppurative exudate, mucosal and transmural acute inflammation, with inflammatory cells in the mesoapendiceal fat tissue as well. These findings were consistent with acute appendicitis. At tip of the appendix, there was one small, well-demarcated subserosal nest, measuring 0.3 mm, composed of monotonous cuboidal cells, with round to oval nuclei. There were no atypia or mitotic figures. This finding was consistent with Walthard cells rest. Further immunohistochemical analysis was performed, but the nest was lost on deeper sections.

DISCUSSION

Urothelial rests are extremely rare finding in the vermiform appendix. However, it is important to recognise this benign entity as no further treatment is needed for these patients. Ancillary immunohistochemical methods can be useful for diagnosis but the traditional morphologic parameters are also sufficient since urothelial rests have typical microscopic picture.

P3 GENERALIZED AND FATAL FELID HERPESVIRUS-1 WITH INTESTINE INVOLVEMENT: A CASE REPORT

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A 1.5-month-old male Neva Masquerade cat exhibited symptoms of diarrhea, with subsequent rapid decline in clinical status, characterized by loss of appetite and the onset of neurological symptoms. The nervous signs included lethargy, prolonged recumbency, and ataxia. Despite veterinary intervention, the severity of the symptoms led to the euthanization of the kitten ten days after onset of the symptoms. The kitten had not received any vaccinations, while the queen had undergone a comprehensive vaccination schedule covering various viral pathogens.

At necropsy, the kitten exhibited severe anemia, dehydration, enteritis, severe pulmonary edema, and liver degeneration, while the other organs appeared grossly normal. Histopathological findings included diffuse thickening of the alveolar septa with mononuclear and partly neutrophilic inflammatory infiltrate (interstitial pneumonia) with alveolar edema; multifocal vacuolar degeneration of hepatocytes with microvacuoles and occasionally macrovesicles in individual hepatocytes; and perivascular edema in the brain. Additionally, there was a diffuse mixed inflammatory infiltrate consisting of lymphocytes, some plasma cells, and neutrophils in the lamina propria of the small intestine, with apoptosis of lymphocytes in Peyer's patches and some crypts containing necrotic debris. This indicated severe lymphoplasmacytic and partly neutrophilic diffuse enteritis. In the spleen, apoptosis of individual lymphocytes was observed in primary lymphoid follicles and germinal centers.

PCR testing was negative for Feline Panleukopenia Virus (FPV) and Feline Infectious Peritonitis Virus (FIV) but positive for Feline Herpesvirus-1 (FHV-1). In most cases of FHV-1 infection, clinical signs include dermatitis, ocular disease, upper respiratory diseases, and in some reports, stomatitis and neurological disorders. Enteritis has been observed in some cases complicated by other viruses or bacteria. However, in our case, the most prominent symptoms were diarrhea and neurological disorders. Previous reports have not mentioned enteritis in the context of feline herpesvirus infection. Gastrointestinal involvement associated with herpes virus infection have only been reported in dogs.

P4 UNCLEAR BIOLOGICAL BEHAVIOR OF DEEP PENETRATING MELANOCYTIC TUMOR

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INTRODUCTION

Deep penetrating nevus is a benign melanocytic neoplasm. It can rarely progress to deep penetrating melanocytoma and malignant deep penetrating tumor.

CASE REPORT

A 42-year-old woman presented with a newly formed, rapidly growing infrascapular lesion. There was known positive family history for cancer including melanoma. The lesion was resected and pathohistological examination revealed a wedge-shaped mass made of melanocytes with occasional cytological atypia, that spread deeply in the reticular dermis with the maximum depth measuring 6.1 mm. Immunohistochemically, Melan-A, Beta-Catenin and p16 were positive and HMB45 and PRAME were negative, all of which suggested benign nature of the tumor. On the other hand, brisk mitotic activity (7 typical mitosis/mm2) and high proliferative activity (Ki67>17%) implied malignant nature of the tumor. To predict the biological behavior, the paraffin block with the tumor was sent for additional molecular analysis. Next Generation Sequencing showed mutated promoter region of the TERT gene and mutation of p53, which indicated malignancy of the neoplasm. The patient underwent re-excision of the left scapular scar and sentinel lymph node biopsy in the left axilla. No tumor remains were found in the scar, whereas one sentinel lymph node showed two metastases without capsular breakthrough that measured 0.8 and 1 mm.

CONCLUSION

In some rare cases histological and immunohistochemical analysis of melanocytic lesions are not sufficient for definitive diagnosis of the tumor's biological behavior and additional molecular testing is needed.

Keywords: melanocytic, histocytochemistry, cytogenetic analysis

P5 CUTANEOUS PSEUDOLYMPHOMA ASSOCIATED WITH LEECH THERAPY: A CASE REPORT.

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We report a 49 year old female patient who was examined at a private clinic for dermatology and surgery because of persistent multiple erythematous, papulomatous, pruritic lesions, some of them ulcerated, with a crust on the surface, localised on the patients abdomen and back. The patient had recently undergone medical leech therapy. After surgical excision the lesions were sent to pathology for further analysis.

Histology examination of the lesions revealed hyperkeratosis of the surface epidermis, ulceration with crust formation, mild acanthosis, focal spongiosis, and exocytosis of inflammatory cells in the epidermis. Superficial, as well as deep dermal perivascular dense inflammation was observed, consisting mainly of lymphocytes, with admixture of eosinophils, plasma cells and histiocytes. On the basis of the mixed cellular infiltrate a lymphoproliferative disorder was excluded. Considering the patients history of medical leech therapy and the same localisation of the lesions the diagnosis of leech-induced pseudolymphoma was reached.

Cutaneous pseudolymphoma is a benign lymphoid infiltration caused by a variety of conditions including leech bites. To the best of our knowledge, this is the eight described case of leech-induced pseudolymphoma in the English literature so far. Leeches are an interesting group of worms found primarily in freshwater, with a few exceptions found in terrestrial or marine habitats. Leech therapy is one of the oldest healthcare modalities. The mechanism of leech therapy relies on the leeches ability to secrete a complex mixture of biologically active substances into the bloodstream when they attach to the skin and feed. The therapeutic use of leeches, known as hirudotherapy, relies on their salivary gland secretions, which contain substances with anti-inflammatory, bacteriostatic, and anticoagulant properties.

Hirudotherapy is used in modern medicine for various conditions such as venous disorders, wound healing, pain management and particularly in plastic, reconstructive and orthopaedic surgeries. However, it can lead to side effects including infections and cutaneous complications like pseudolymphoma, a benign proliferation of lymphoid cells in the skin. Management approaches for pseudolymphoma include corticosteroids and cryotherapy, with favorable outcomes reported in many cases.

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P6 OSSEOUS METAPLASIA IN AN INFLAMMATORY POLYP OF THE COLON: A CASE REPORT

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BACKGROUND

Osseous metaplasia (OM) is a rare phenomenon in colon polyps, typically observed in inflammatory and juvenile polyps, as well as in tubular and tubulovillous adenomas. This case report aims to describe a unique instance of OM in a colonic polyp.

CASE PRESENTATION

A 34-year-old female with a significant family history of colorectal carcinoma (CRC) was admitted for a routine colonoscopy. The procedure revealed an 8–10 mm erythematous, irregular polyp in the ascending colon, which was resected. Additionally, seven sessile serrated lesions were identified throughout the colon and resected, respectively. Histological examination of the resected polyp showed glands covered with regular epithelium, an oedematous connective stroma with inflammatory infiltrates, and multiple foci of osseous metaplasia, an atypical finding for this type of lesion.

DISCUSSION

Osseous metaplasia characterizes the abnormal formation of bone tissue within another tissue type. Though rare, it has been documented in the colon, with the rectum being the most common site. The pathogenesis of OM is not well understood but is believed to involve the differentiation of osteoblasts from fibroblasts in response to chronic inflammation or tissue injury, possibly mediated by bone morphogenetic proteins (BMPs).

CONCLUSION

OM in colonic polyps is generally an incidental finding with no significant prognostic implications. The primary symptom is often painless rectal bleeding. Patients with polyps showing OM but lacking epithelial dysplasia or invasive tumours do not require additional follow-up.

P7 PRIMARY ECTOPIC MENINGIOMA IN A 42-YEAR-OLD FEMALE PATIENT

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INTRODUCTION

Meningiomas are the most common primary tumors of the central nervous system (CNS). They are mostly benign, slow-growing, and arise from meningothelial cells which are part of the pia mater, arachnoid, trabeculae and septae of the subarachnoid space. Within these structures, a monolayer of meningothelial cells forms a barrier between neural tissue and cerebrospinal fluid, and additionally, they play a role in the immune response and maintenance of the microenvironmental homeostasis. The meningeomas located outside the cranial cavity are extremely rare. Here we present a case of a primary ectopic meningioma in a 42-year-old female patient.

CASE REPORT

A 42-year-old female patient admitted to surgery because of long standing, slowly growing subcutaneous tumor on the scalp. The clinical impression was that it was an atheroma. The tumor was removed and sent for pathohistological analysis. A yellow-gray tissue sample measuring approximately 1.5 cm in diameter was received at the Department of Pathology, School of Medicine Zagreb, and was entirely sampled and serially sectioned. Histological sections revealed a formation composed of nests of meningothelial cells without atypia or mitoses, embedded in surrounding adipose and connective tissue. Psammoma bodies were observed within individual nests. Immunohistochemical staining for pancytokeratin (AE1/AE3), epithelial membrane antigen (EMA), S100, and progesterone (PR) was performed. The tumor cells showed positive reactivity to EMA and PR, and negative reactivity to AE1/AE3 and S100, confirming the histopathological diagnosis of ectopic meningioma.

CONCLUSION

Primary ectopic meningiomas are extremely rare and are usually limited to head and neck region, feet, lung, skin and mediastinum. Due to their rare appearance, they can be misdiagnosed, resulting in inappropriate clinical management. Therefore, they should be considered in differential diagnosis of tumors with histological features of meningioma.

KEYWORDS: meningioma, ectopic meningioma, skin

P8 MESONEPHRIC ADENOCARCINOMA OF THE CERVIX – A CASE REPORT

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According to 5th edition of WHO Classification of female genital tumors, mesonephric adenocarcinomas of cervix are rare, less than 1% of cervical adenocarcinomas. There is no HPV association and it is thought to arise from vestiges of mesonephric (Wolffian) duct. Full-thickness invasion, circumferential involvment, ulceration and extention into the lower uterine segment are common macroscopic findings. Histologically, the classic pattern is tubular, but the other possible patterns are ductal, papillary, retiform, sex cord-like, hobnail, glomeruloid, sieve-like, spindled and solid, while squamous differentiation and cytoplasmic mucin are absent. Sarcomatous differentiation is possible. Tumors are positive for GATA3, PAX8, CD10 (luminal staining pattern), negative for ER, usually negative for napsin A and AMACR. They can be positive for TTF1 and calretinin. p53 has wildtype expression, p16 is not diffuse and HPV is not detected.

A 43-year old patient presented with abnormal vaginal discharge. Gynecological examination revealed a cervical canal dilated by protruding tumorous mass, voluminous portion and enlarged uterus. Pelvic MR described a hypercellular mass in cervical canal and around the entire endometrial circumference, taking up the entire endocervical canal and uterine cavum. The process measured more than 10 cm and was infiltrating more than one half of myometrial thickness. After the biopsy cofirmed the diagnosis of mesonephric adenocarcinoma, it was decided to perform hysterectomy with bilateral adnexectomy and lymphadenectomy.

We received pelvic lymph nodes, uterus with adnexae and cervix and a mass from left sacrouterine ligament. Upon macroscopic examination, we described a protruding tumor in endocervical canal, isthmus and entire uterine cavum, measuring 10x4x5,5 cm. Histologically, tumor consisted of ductal and tubular formations of atypical epithelial cells which were immunohistochemically positive for vimentin and TTF1, focally for GATA3, luminally for CD10, rarelly focally for p16, negative for calretinin, ER and PR, while p53 had a wild type pattern. The tumor invaded through almost the entire depth of myometrium, invading both isthmus and cervix. In the cervical stroma were found multiple foci of mesonephric metaplasia. With given histological and immunohistochemical profile, we confirmed the initial diagnosis of mesonephric adenocarcinoma. Patient is currently under chemoradiotherapy with cisplatin and clinically stable.

Recent studies have shown that a significant minority of endocervical adenocarcinomas are not HPV-associated and they are divided in gastric, clear cell, mesonephric and endometrioid type. Mesonephric carcinomas are typically associated with mesonephric remnants along the course of the embryological mesonephric duct located in the cervical wall. It is important to distinguish HPV-associated and HPV-independent carcinoma of the cervix because of their different molecular and immunohistochemical profile, clinical behaviour, possible treatment options and overall worse outcome.

P9 MIXED MEDULLARY AND FOLLICULAR-CELL DERIVED CARCINOMA: A CASE REPORT.

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Mixed medullary and follicular-cell derived carcinoma (MMFCC) of the thyroid is a malignant neoplasm which consists of co-existing populations of both follicular and C cell–derived tumor cells intermixed within the same tumor. Both tumor cell populations should be morphologically distinct, and their lineage confirmed by immunohistochemistry. Clinical features depend on the predominant tumor component, but the clinical behavior is more similar to the medullary thyroid carcinoma (MTC). Lymph node and distant metastases arise in up to 25% of cases. Serum calcitonin levels are frequently elevated, and serum thyroglobulin can also be high. MMFCC accounts for <0.1 % of all thyroid malignancies, it can occur in the setting of MEN2A or MEN2B syndromes or sporadically.

We present a case of a 55-year-old female with Graves disease who was treated with thyroidectomy. Grossing of the resection specimen revealed a 9 mm lesion in the left lobe which was diagnosed as papillary carcinoma of the thyroid (PTC) with four lymph node metastases. However, the postoperative laboratory workup showed elevated calcitonin serum levels. The original pathohistological report was revised, and after performing additional immunohistochemical analysis the tumor was diagnosed as MMFCC with components of papillary thyroid carcinoma and medullary carcinoma. The patient underwent selective neck dissection and the final pathohistological report revealed eleven lymph node metastases.

This case report highlights the importance of measuring preoperative calcitonin levels and of conducting a meticulous histological and immunohistochemical examination in order to assist the precise and early diagnosis of MMFCC.

P10 CASE REPORT: UNEXPECTED FINDING OF THYMOMA IN A PATIENT WITH LARGE CELL NEUROENDOCRINE CARCINOMA

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INTRODUCTION

Large-cell neuroendocrine carcinomas are rare lung neoplasms with neuroendocrine differentiation that behave extremely aggressively. They have histomorphological features of both small cell lung carcinoma (SCLC) and non-small cell lung carcinoma (NSCLC) and are usually associated with heavy smoking. In this type of lung neoplasm, the five-year survival rate is very low, about 8%.

Thymic epithelial lesions, primarily thymomas, are significant due to their prevalence as a common cause of adult anterior mediastinal masses. Within the spectrum of anterior mediastinal tumors, thymomas stand out, constituting 20% of these neoplasms in adults.

CASE REPORT

We present a 55-year-old patient who, over the past few months, underwent extensive pulmonary diagnostics due to a severe cough and CT-verified nodular spiculated changes, 38 x 22 x 12 mm, in the lungs. The operation (lobectomy) was performed, and the resected material was sent for pathohistological analysis.

On histopathological examination, a subpleural white nodule measuring 42 x 35 x 30 mm was found in the middle lobe of the lung, visibly affecting the visceral pleura. Histologically, the tumor cells showed neuroendocrine morphology and non-small cell cytology. Immunohistochemically, the tumor tissue exhibited positivity for synaptophysin, chromogranin, CK7, and CD56. The Ki-67 proliferation index was 90%. However, the tumor showed negative immunohistochemical staining for RB1. The histological and immunohistochemical features suggested a large cell neuroendocrine carcinoma (LCNEC).

Additionally, a tissue fragment from the anterior mediastinum, measuring 36 x 27 x 10 mm with a smooth surface, was received. On cross-section, the fragment revealed a cystic formation with a diameter of 20 mm, filled with clear, liquid contents. Histologically, there was a multicentric formation composed of denser lymphatic tissues with variably large islands of epithelial cells that were immunohistochemically positive for p40 and CK5/6. The entire lesion was surrounded by an intact connective capsule. The histological and immunohistochemical features suggested a thymoma-type AB, stage I.

CONCLUSION

LCNECs are very rare and aggressive lung neoplasms with a very low survival rate. Because of their rarity and histomorphological similarity to other lung carcinomas, they are very challenging to treat properly. Additionally, more genetic and molecular testing needs to be conducted to understand the nature of LCNEC better and to select the best treatment approach for these patients. Our case report describes an unusual synchronous additional finding of thymoma in a patient operated on for a neuroendocrine lung neoplasm. Interestingly, the patient has two completely different neoplasms that are difficult to diagnose because of their morphological heterogeneity. Despite the low stage of the thymoma, this patient must undergo extensive chemotherapy treatment due to the LCNEC.

P11 CASE REPORT: ANAPLASTIC THYROID CARCINOMA IN A 77-YEAR-OLD PATIENT

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INTRODUCTION

Anaplastic thyroid carcinoma (ATC) is a very rare and aggressive thyroid neoplasm, accounting for approximately 2% of all thyroid tumors. ATC has a very high mortality rate and a very poor prognosis, with a 5-year survival rate of about 5%. This type of cancer is locally invasive and often spreads to regional lymph nodes and other distant sites.

CASE REPORT

We present a 77-year-old patient who was initially examined at Virovitica General Hospital and was transferred to Osijek University Hospital for further treatment. The patient's medical history revealed that her neck began to swell 3 weeks ago, and during that period, she also began to have difficulty swallowing. A CT scan showed a tumor that occupies the entire thyroid gland and infiltrates the trachea and larynx. A small biopsy of the tumor was performed, and the resected material was sent for pathohistological analysis. Histologically, the tumor is mostly composed of anaplastic epithelioid and spindle cells that are immunohistochemically vimentin+, p53+, SMA -/+, TTF1-, PAX8-, thyroglobulin-, CK A1/AE3-, CK7-, CK5/6-, p40-, calcitonin-, BRAF VE1-, S100-, MelanA-, CD34-, desmin-, LCA-. A smaller part of the tumor consists of a more differentiated component made up of smaller follicles lined with atypical thyrocytes that are immunohistochemically CK7+, TTF1+, PAX8+. The proliferation index Ki67 is 30%. Some of the normal thyroid follicles and mature adipose tissue can be seen in some sections, which are infiltrated by the tumor.

CONCLUSION

Anaplastic thyroid carcinoma is very aggressive and requires prompt diagnosis. This type of cancer is difficult to treat because it is not sensitive to usual thyroid cancer treatments. Additionally, it requires a multidisciplinary team that combines surgery, chemotherapy, and radiotherapy. Because of the cancer's very aggressive and rapid nature, in many cases patients need continuous palliative care.

P12 INFLAMMATORY FIBROID POLYP OF THE GASTRIC ANTRUM: CASE REPORT

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INTRODUCTION

Inflammatory fibroid polyps (IFP) are rare benign gastrointestinal subepithelial tumors which represent less than 0.1% of all gastric polyps. The most common site is the gastric antrum, followed by the small and large intestine, with peak incidence in the sixth and seventh decades. They are mostly asymptomatic and discovered incidentally, but sometimes they can cause stomach pain or bleeding.[1] IFP is pathologically characterized by the presence of CD34 positive spindle cells, a prominent network of blood vessels, fibromyxoid stroma and an inflammatory infiltrate, typically dominated by eosinophils.[2]

CASE REPORT

An 83-year-old male patient was admitted to the hospital due to irregular, hard stools over the past year, which have become frequent and black in the last few days. He denied nausea, vomiting, abdominal pain, as well as weight loss. During the endoscopic examination, a polypoid lesion with ulceration at the top was found in the antrum, and biopsies were taken from the base of the lesion. Pathohistological evaluation revealed only signs of active gastritis with H. pylori. Abdominal and pelvic MSCT revealed an exophytic intraluminal expansive formation on the anterior wall of the antrum measuring up to 35 mm in the largest diameter with deep defects, which differentially-diagnostically may correspond to a primary malignant gastric neoplasm. A gastrotomy and tumor excision were performed. The tissue specimen sized 4x4x2 cm was received, and its cross-sections revealed a solid, grayish, firm tumor with a diameter of 2.2 cm. Histologically, the tumor was composed of diffusely and fascicularly arranged uniform spindle cells interspersed with mononuclear inflammatory cells and numerous eosinophils. The tumor was sharply demarcated from the surrounding mucosa and gastric wall. Immunohistochemically, tumor cells were positive for CD34 and vimentin, and negative for SMA, S100, CD117, desmin, e-cadherin, AE1/AE3, ALK, BCL2, STAT6, DOG1, CD20, CK7, CK20, CD45, caldesmon and synaptophysin.

CONCLUSION

Inflammatory fibroid polyps cannot be differentiated from malignancy without histological examination. Biopsies are often insufficient and diagnosis may not be possible until resection.[3] IFP must be differentiated from other benign and malignant spindle cell tumors including GIST, plexiform fibromyxoma, leiomyoma, leiomyosarcoma and schwannoma.[1,4] IFPs are most commonly positive for vimentin and CD34, and negative for S100, CD117 and desmin.[1]

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P13 PRIMARY CUTANEOUS MUCINOUS CARCINOMA (PCMC) : CASE REPORT

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INTRODUCTION

Primary cutaneous mucinous carcinoma (PCMC) is a rare, low-grade malignant skin adnexal tumor with less than 400 cases published in the literature. The most common sites are face, especially the periorbital region, and scalp, with reported cases in axillary region and trunk. These tumors usually present as slow growing, painless, soft nodules that have been present for several years, and therefore are often clinically mistaken for benign tumors.

CASE REPORT

A 47-year-old male patient presented to the head and neck department with a skin lesion located on the left malar prominence, which has been present for several years, but over the last few months has been growing and become painful. Clinically, it presented as a cystic, benign lesion. Excision was performed and the specimen was submitted to the pathology department. Gross examination revealed a skin specimen measuring 2x0.6x0.4 cm with a gray, raised tumor measuring up to 0.4 cm in greatest diameter. Histologically, the tumor was located in the dermis and consisted of glandular cribriform formations and strands of atypical epithelial cells floating within abundant pools of mucin. The tumor cells showed CK7 positivity and CK20 negativity. Immunohistochemical positivity for p63 was observed in up to the 10% of cells, all located in the peripheral layer. The tumor was located 0.4 mm from the base of excision. A re-excision was performed, histologically without any tumor remnants. Patient underwent clinical evaluation, including PET/CT, where suspicious metabolic activity was found in one cervical lymph node, but with no signs of tumor from another primary site. Ultrasound and fine needle aspiration cytology of cervical lymph nodes were performed, and malignant cells were not found.

CONCLUSION

Metastatic lesions from the breast, gastrointestinal tract, pancreaticobiliary tree, ovary and lungs are likely to mimic mucinous carcinoma of the skin. Differentiating between PCMC and metastatic mucinous adenocarcinoma to the skin is crucial due to the significant difference in prognosis and clinical approach. Patients with PMCS typically have a favorable prognosis, where adequate excision with wide margins is sufficient. Negative reaction for CK20 is helpful in distinguishing PCMC from metastasis from the colon. The p63 immunostaining highlights a peripheral layer of myoepithelial cells, which is considered diagnostic of an in situ tumor component and conclusive evidence of primary skin origin. Although immunohistochemistry may help in establishing the primary site of the tumor, a final diagnosis requires comprehensive clinical evaluation.

P14 ELASTOFIBROMA DORSI MISTAKEN FOR LIPOMA: CASE REPORT

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Elastofibroma is a benign, slow-growing mass of mesenchymal origin. Most authors consider it a tumor-like lesion resulting from reactive fibromatosis and elastic tissue overproduction by fibroblasts stimulated due to mechanical microtrauma and vascular insufficiency. However, clonal and nonclonal chromosomal structural changes reported in cytogenetic studies suggest possible neoplastic biology. Typically, it is observed in women over 50 years of age, particularly between the inferolateral portion of the scapula and thoracic wall, therefore referred to as elastofibroma dorsi.

We are reporting a case of a 71-year-old female patient who presented with a left-sided subscapular mass arising two months ago. The mass was painless and soft by palpation, while the left shoulder movements were unaffected. Sonographically, it appeared inhomogenous and hypoechogenous. Cytological aspirate analysis revealed the presence of fat cell clusters, extracellular fat and scant fibroblasts, corresponding with the diagnosis of lipoma. A surgical excision was performed, followed by histopathological examination. Grossly, the lesion was firm and yellow-whiteish, measuring 5:4:2 cm. Histologically, an abundant fibro-collagenous tissue and orcein-positive eosinophilic elastic fibers were observed, together with adjacent fibroblasts and peripherally located fat tissue, driving the final diagnosis of elastofibroma. No complications or recurrence signs have been reported in three months post-surgery.

Elastofibroma dorsi is considered an uncommon entity. However, the exact incidence is unknown. The prevalence in studies accounts for 2% in asymptomatic patients, rising to 10-24% in the autopsy series. In English literature, less than 600 cases have been reported. Recent data suggest radiological evaluation to be sufficient for the diagnosis. Others claim that histopathological confirmation is crucial. In cases of soft tissue mass presenting in the subscapular region in elderly female, this entity should be ruled out.

Key words: elastofibroma, elastic tissue, conective tissue, pathology, cytology

P15 EXPRESSION OF INIHIBITORY RECEPTORS LAG-3, TIM-3 AND TIGIT IN RENAL CELL CARCINOMA

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Renal cell carcinoma (RCC) is considered to be one of the most lethal of the genitourinary cancers. Metastatic RCC requires multimodal, surgical and oncological treatment. Because of its immunogenicity, recently developed immune checkpoint inhibitor (ICI) therapy, has led to significant improvements in survival rates of advanced stage RCC patients. The main goal of ICI therapy is the revitalization of the body's immune response to tumor cells that was previously inhibited by the tumor itself. LAG-3 signaling inhibits the immune response to tumor cells by accelerating the depletion of T cells and stopping their proliferation. T cell immunoglobulin and mucin domain 3 (TIM-3) is an inhibitory receptor that controls antiviral and antitumor immunity, similar to LAG-3. T cell immunoglobulin and ITIM domain (TIGIT) reduces the anti-tumor immune response by directly suppressing effector CD8+ T cells and indirectly by stimulating Treg cells. We analyzed LAG-3, TIM-3 and TIGIT inhibitory receptor immunohistochemical expression in different histological types of RCC (on 60 archival samples of clear cell and non-clear cell RCC). We found that the expression of inhibitory receptors LAG-3, TIM-3 and TIGIT is higher in the cells of clear cell renal cell carcinoma and in its immunoenvironment compared to non-clear cell (chromophobe and papillary) RCC cells. Study results will contribute to better understanding of RCC tumor microenvironment and aid in optimal immunotherapy selection in RCC patients.

P16 SPLENIC HAMARTOMA: A CASE REPORT

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Splenic hamartomas, also known as splenomas, are rare benign lesions of the spleen, usually found incidentally on imaging or at autopsy. They are composed of disorganized tissue elements native to the spleen and were first decribed by Rokitansky in 1861. Despite their benign nature, diagnosis is often challenging due to their resemblance to other benign and malignant lesions on imaging studies.

In the case presented here, a solid splenic lesion was incidentally found on abdominal ultrasonography in a 65-year-old male patient. Abdominal computed tomography (CT) was performed and revealed an expansive mass in splenic hilus, measuring 7 cm in diameter, suspicious of hamartoma, but other etiologies could not be ruled out. Additionally, CT detected a small splenunculus in the lower pole of the spleen and saccular aneurysm of splenic artery measuring 1,6 cm. The patient underwent splenectomy with distal pancreatectomy. Gross examination revealed a well demarcated, unencapsulated nodule, with focal fibrosis. Microscopical examination showed disorganized slit-like vascular spaces lined by endothelial cells immunohistochemically positive for CD8 and CD31 and negative for CD34. These findings were consistent with the diagnosis of splenic hamartoma. The postoperative course was uneventful.

This case highlights the importance of considering splenic hamartoma in the differential diagnosis of splenic masses. Histopathological examination remains the gold standard for the definitive diagnosis.

Keywords: splenic hamartoma, spleen, benign lesion, imaging, histopathology, splenic artery aneurysm

P17 PATHOHISTOLOGICAL DIAGNOSIS OF MANDIBULAR FIBROUS DYSPLASIA: A CASE REPORT

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OBJECTIVE

Fibrous dysplasia (FD) of the mandible is a rare benign bone disorder characterized by replacing normal bone with fibrous tissue, resulting in deformity and functional impairment. Given the diagnostic challenge posed by the overlapping clinical and histological features of FD with other fibro-osseous diseases, this case report aims to highlight the pathohistological characteristics of fibrous dysplasia.

CASE REPORT

A 49-year-old female presented with a history of gingival recession and was referred for further evaluation due to suspected periodontal disease. Radiological examination revealed irregular radiopaque-radiolucent changes in the mandibular frontal region, raising suspicion of an odontogenic tumor. Subsequent CT imaging confirmed the presence of an osteolytic lesion with suspected root resorption. Histologically, in HE sections, the tissue was composed of irregular, variably sized immature bone trabeculae without clearly visible osteoblastic border activity, surrounded by dense, cellular connective stroma. Around some of the trabeculae, visible eosinophilic strands extending into the surrounding stroma (Sharpey's fibers) were present. In addition to the described material, fragments of compact cortical bone are also present. Biopsy results suggested fibrous dysplasia and the multidisciplinary team prompted further investigations, including a skeletal scintigraphy.

CONCLUSION

Fibrous dysplasia of the mandible poses significant diagnostic challenges due to its varied presentation. Timely and accurate diagnosis, often necessitating histopathological examination, is crucial for appropriate management. In this case, surgical intervention for lesion removal was recommended following multidisciplinary consultation. Long-term follow-up and monitoring are essential for disease surveillance and to ensure optimal patient care, thereby avoiding potential complications.

P18 DIAGNOSTIC CHALLENGES AND HISTOLOGICAL INSIGHTS: A CASE REPORT OF HYALINIZING TRABECULAR TUMOR OF THE THYROID GLAND

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OBJECTIVE

Hyalinizing trabecular tumor (HTT) is a rare neoplasm originating in the thyroid gland. Despite its predominantly benign nature, accurate preoperative diagnosis of HTT is a challenge, with only 8% of cases correctly identified. This case report aims to highlight clinical and pathological features of HTT, underlining the significance of a comprehensive differential diagnosis in guiding treatment decisions.

CASE REPORT

A 72-year-old patient with a medical history of arterial hypertension, chronic ischemic encephalopathy, vertigo syndrome, cervical and lumbosacral syndromes, and a family history of breast cancer in her father, has been monitored by a nuclear medicine specialist for hypothyroidism treated with immunotherapy for 7 years. During a neck ultrasound, fine needle aspiration cytology (FNAC) was performed on a nodule located in the lower half of the right thyroid lobe. FNAC revealed a follicular tumor (T4), with the cytology unable to exclude the follicular variant of papillary carcinoma. Subsequently, the patient underwent a total thyroidectomy. The pathologist received a separate right thyroid lobe measuring 3.5 x 2.4 x 2 cm, where a well-circumscribed, entirely encapsulated whitish to yellowish nodule measuring 2.5 x 2.3 cm was observed. Histological examination revealed a tumor with trabeculae comprised of medium to large cells exhibiting a unique straight orientation perpendicular to the trabecular axis with rare mitotic activity. Notably, the characteristic cytoplasmic appearance and a surrounding dense, heavily hyalinized, eosinophilic fibrovascular stroma were observed. There was no invasion of the tumor capsule or lymphovascular invasion, and the histological picture in the surrounding thyroid tissue and the left lobe corresponded to Hashimoto's thyroiditis. The patient's postoperative recovery was uneventful, and the multidisciplinary team reached a consensus to continue monitoring the patient with a nuclear medicine specialist and to introduce levothyroxine.

CONCLUSION

In conclusion, HTT of the thyroid gland poses a diagnostic challenge due to its overlapping cytological and histological features with other thyroid neoplasms, particularly papillary thyroid carcinoma and follicular adenoma. However, a meticulous examination of its unique histological characteristics and specific immunohistochemical markers facilitates accurate diagnosis. Despite its predominantly benign nature, the potential for metastasis emphasizes the importance of precise identification and appropriate clinical management. Further research into the molecular profile of HTT may provide additional insights into its pathogenesis and guide future therapeutic strategies.

Keywords: Hyalinizing Trabecular Tumor, Thyroid Gland, Thyroid Neoplasms

P19 PERITONEAL MESOTHELIOMA AS AN INCIDENTAL FINDING IN INGUINAL HERNIA

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Inguinal hernia is a very common occurence in general population, as a result hernioplasties have become a routine. Abnormalities are seldom found during these procedures, and if they are, the majority of them turn out to be metastases from another tumor site, most frequently gastrointestinal tract and female reproductive system. Here we provide a very unique case of a 76 year old male patient who presented to our hospital with right inguinal hernia and no previous history of malignancy. His inguinal hernia was the first manifestation of peritoneal mesothelioma. The case is all the more interesting because mesotheliomas are very rare but aggresive tumors that in most cases arise from pleura and are connected to asbestos exposure.

P20 LEIOMYOADENOMATOID TUMOR OF THE UTERUS: A CASE REPORT.

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Adenomatoid tumors are rare benign neoplasms of mesothelial origin that occur in both the female and male reproductive tracts. In the uterus, these tumors most frequently develop in the subserosal myometrium of the cornua. An exceptionally rare variant of these tumors, characterized by a prominent smooth muscle component, is known as a leiomyoadenomatoid tumor (LMAT).

We report a case of a 48-year-old female, presenting with intermittent and postcoital vaginal bleeding for the past four months. Ultrasound revealed a myomatous uterus and the patient underwent hysterectomy with bilateral salpingo-oophorectomy. On gross examination, the uterus had a smooth serosal surface, the uterine wall contained four well circumscribed, nonencapsulated white-tan tumors diameters ranging from 0,5 to 2,5 cm. Histologically, three of the four tumors were determined to be leiomyomas.

The fourth, and largest tumor showed bundles of smooth muscle (Caldesmon, ASMA and Desmin positive) interlacing with areas of gland-like formations lined by epithelioid cells with eosinophilic cytoplasm. The adenomatoid pattern was especially prominent on the serosal side of the tumor. The adenomatoid areas stained positive for CK AE1/AE3, CK7, Calretinin, Podoplanin and BAP1, and negative for EMA, Desmin, Ber-EP4 and CK20. Overall features were diagnostic of leiomyoadenomatoid tumor.

Uterine leiomyoadenomatoid tumors are rare benign entities first described in 1992. by Epstein et al. Due to their pseudo-infiltrative pattern, they can histologically imitate malignant lesions infiltrating underlying smooth muscle. Awareness of LMAT's histological and immunohistochemical features is important to avoid misdiagnosis.

P21 NIPPLE ADENOMA- A CASE REPORT

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Nipple adenoma is a rare benign tumor of the nipple due to mammary proliferation of the lactiferous ducts. It generally occurs unilaterally and arises at an average age of between 43-45 years, predominantly in females. It is characterized by the proliferation of ductal epithelium and myoepithelial cells, often forming complex glandular and papillary structures within the nipple. Common presentation of the tumor includes nipple erosion, erythema, serosanguinous discharge, induration, or tumor formation at the nipple. Clinical presentation closely resembles other benign or malignant conditions of the nipple, such as nipple eczema, Paget's disease, or invasive breast carcinoma. These similarities can lead to initial misdiagnosis or underestimation of the condition. Additionally, the rarity of nipple adenoma means it is not always the first consideration for clinicians, further contributing to delayed diagnosis.

We herein describe the clinical and histopathological characteristics of three cases of nipple adenoma. Three female patients represented with nipple erosion, serosanguinous discharge or palpable mass. Patients were advised to have an ultrasound or MRI and one performed an cytological examination (FNA). MRI and ultrasonography revealed no mass lesions and FNA revealed subchronic inflammation. One patient had co-existence of nipple adenoma and breast cancer in which adenoma was accidental finding. Complete excision of the lesions were performed. Histologically, it is characterized by a well-circumscribed tumor with proliferation of glandular and tubular structures lined with an inner layer of epithelial cells and an outer layer of myoepithelial cells. Mitoses are seen, but cytological atypia is absent. Immunophenotypic definition, through the use of a panel of specific antibodies for the myoepithelial cells, includes p63, h-caldesmon, calponin 1, α-smooth muscle actin, CK5/6 and CD10. The positivity of at least two markers is sufficient for diagnosis.

Nipple adenoma, although rare, is an important benign condition that can mimic malignant diseases of the breast. Accurate diagnosis relies on a combination of clinical, radiological, and histopathological findings. Surgical excision remains the definitive treatment, providing both therapeutic and diagnostic benefits. Long-term prognosis is excellent, with low recurrence rates. The association between nipple adenoma and breast cancer still remains unclear so regular follow-up of patients with nipple adenoma to exclude breast cancer is recommended. This cases highlights the importance of considering nipple adenoma in the differential diagnosis of nipple masses to avoid unnecessary aggressive treatments.

Keywords: myoepithelial cells; surgical excision ; immunohistochemistry

P22 AN EXTRARENAL RHABDOID TUMOR OF THE BLADDER: AN EXTREMELY RARE FORM OF MALIGNANCY IN EARLY INFANCY

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INTRODUCTION

A rhabdoid tumor is a rare, aggressive fast-growing childhood cancer occurring in infants and young children. Extrarenal malignant rhabdoid tumors (MRT) can develop in the liver, lungs, skin, urinary bladder and soft tissues. We present a case of the rare urinary bladder MRT in a six-month-old girl.

CASE REPORT

A six-month-old girl was admitted due to a palpable round mass in the projection of the bladder. After radiological evaluation, a clinical suspicion of rhabdomyosarcoma was established, the tumor was excised. Macroscopically it was a cluster-like tumor on a narrow stalk. Microscopically, a metaplastic multi-layered squamous epithelium was found on most of the surface, under the epithelium proliferation of botryoid arrangement was found. Areas with atypical cells of eosinophilic cytoplasm, polymorphic nuclei, a visible nucleolus, and numerous mitoses were found. An immunohistochemical analysis didn't confirm the clinical diagnosis of rhabdomyosarcoma, molecular analysis was done to exclude rhabdomyosarcoma and Ewing sarcoma. After evaluation done by two pathologists and a molecular biologist diagnosis did correspond to a tumor with heterologous elements, of which the undifferentiated "small round cell" sarcoma component stands out and an additional molecular analysis was performed. Based on the findings of additional molecular analyses, a stable microsatellite status was determined, the tumor is not loaded with mutations, but there is a loss of SMARCB1. This loss corresponds to the diagnosis of an extrarenal rhabdoid tumor.

CONCLUSION

Despite aggressive therapy and the existence of immunotherapy for SMARCB1-deficient tumors it is still very difficult to achieve remission in patients with metastatic disease. This patient requires the teamwork of various medical professionals, reminding us of the importance of a multidisciplinary team in the diagnosis and treatment of aggressive childhood tumors.

P23 PLEOMORPHIC NEUROENDOCRINE TUMOR OF THE PANCREAS (GRADE II) IN A 49-YEAR-OLD FEMALE: A CASE REPORT

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BACKGROUND

Pleomorphic neuroendocrine tumors (NETs) of the pancreas are exceedingly rare and present significant diagnostic and therapeutic challenges. These tumors exhibit atypical histological features and variable clinical presentations, often complicating diagnosis and management. This case report details the clinical presentation, diagnostic evaluation, treatment, and follow-up of a Grade II pleomorphic pancreatic NET in a 49-year-old female patient.

CASE PRESENTATION

A 49-year-old female presented with persistent pain under the right rib cage. Her medical history was unremarkable, with no familial predisposition to neuroendocrine tumors.

Histopathological finding: The tumor tissue is composed of atypical, highly polymorphic cells with prominent nucleoli, lacking organoid growth patterns, but the number of mitoses is 4 per 10 high power fields (HPF) and the proliferation index Ki67 is up to 5%. Therefore, the findings correspond to a pleomorphic neuroendocrine tumor (NET) Grade 2. The tumor tissue showed possitivity on Synaptophysin +, Chromogranin +, INSM-1 +, CK7 -, CK20 -.

CONCLUSION

This case highlights the importance of a multidisciplinary approach in the management of rare pleomorphic pancreatic NETs. Surgical resection remains the cornerstone of treatment, supplemented by tailored adjuvant therapy. Regular follow-up is crucial for early detection of recurrence. Further research is necessary to establish standardized protocols for the diagnosis and management of pleomorphic pancreatic NETs.

Keywords: Pleomorphic neuroendocrine tumor, pancreas, Grade II, chromogranin A, octreotide, pancreaticoduodenectomy, case report.

P24 SPINAL SUBDURAL HEMORRHAGE IN A CASE OF SHAKEN BABY SYNDROME – AN IMPORTANT AUTOPSY FINDING

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Shaken baby syndrome (SBS) is certainly the most recognized pattern of abusive head trauma in children. Forceful repetitive head movements produced by violent shaking of an infant present a mechanism that is widely accepted in the forensic community as being suitable to produce injuries. The triad of intracranial subdural hematoma, retinal hemorrhages, and hypoxic-ischemic encephalopathy is considered to be highly suggestible for SBS, especially when supported by circumstantial evidence. However, the initial clinical presentation and even the gross findings at autopsy can be of variable extent or even absent, and cases of dead infants can be classified as natural death and become the subject of a pathoanatomical autopsy, instead of a forensic autopsy.

We present a case of a two-month-old infant, whose father called the emergency medical team (EMT), reporting the sudden collapse of the infant. Upon arrival of the EMT on the scene, breathing and pulse were absent with asystole on electrocardiogram (ECG). Spontaneous cardiac action was recovered by resuscitation measures, with the Glasgow Coma Scale (GCS) of 3 and the need for assisted respiration. Clinical examination at the hospital admission revealed no injuries. CT scans showed extensive brain swelling, hemorrhage in the subdural space of the brain, scant subarachnoid hemorrhage, and bilateral retinal hemorrhage. Repeated CT scanning of the brain in the following days showed progression of encephalopathy, which was in accordance with poor clinical condition. On day 4 of the hospitalization, death was pronounced. The forensic autopsy confirmed the findings of diagnostic imaging, but also revealed pronounced hemorrhage in the subdural space along the spinal cord canal, clearly visible in the cervical, thoracic, and lumbar segments. Death was classified as violent, caused by traumatic subdural hemorrhage and brain injury.

We live in the era of continuous extension of the clinical diagnostic workup. Still, some important findings can be clinically overlooked. Therefore, the responsibility of pathologists and forensic medicine experts to perform detailed and extensive autopsies remains of great importance. Performing autopsies in such a manner will on many occasions provide additional findings useful for making medicolegal expertise, which were clinically overlooked, or interpreted in an altogether different manner. In cases of shaken baby syndrome, the autopsy finding of a spinal subdural hemorrhage can be the first, and also the deciding fact to conclude that the death of an infant was indeed violent in manner. Therefore, a detailed autopsy, including the examination of the spinal cord canal should be carried out in cases of infant death.

Key Words: Shaken Baby Syndrome; Traumatic Brain Injury; Spinal Subdural Hemorrhage; Forensic Autopsy.

P25 A MAN WITH UTERINE LEIOMYOMA AS A PART OF PERSISTENT MÜLLERIAN DUCT SYNDROME

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We present the case of a 59-year-old man, father of two children, who complained about dull pelvic pain accompanied by frequency, nocturia, urgency and precipitancy. An unknown retrovesical structure was detected by ultrasound and computerized tomography. Intraoperatively, a partly encapsulated, firm mass, measuring 11x6x7 cm was found between the bladder and the rectum, without infiltrating them. The cut surface of the mass was whorled, grey-white, with a central cavity measuring 3.5 cm in diameter. Histologically, part of the sample was an oval tumor composed of uniform smooth muscle bundles showing positive immunohistochemical reaction for smooth muscle actin and desmin, and a proliferation index measured by Ki67 was up to 1%. The central cavity contained dilated glandular formations lined by regular columnar epithelium showing a positive reaction to cytokeratin 7, estrogen receptor and progesterone receptor. Mitoses or atypia were not observed. In the rest of the sample, areas corresponding to the myometrium were found. Findings were interpreted as a uterine leiomyoma and remnants of the uterus with fallopian tubes and a diagnosis of persistent Müllerian duct syndrome (PMDS) was established. It is a rare disorder characterized by the appearance of Müllerian derivatives (fallopian tubes, uterus and upper two-thirds of the vagina) in a completely virilized individuals (46, XY) with normally developed external and internal male genitalia. Among the known causes of this disorder are mutations of AMH and AMHR2 genes. Patients usually present with cryptorchidism and inguinal hernia. Irritative voiding has not yet been described as main symptom of PMDS. The major complications of the disorder are infertility, testicular tumorigenesis and malignant transformation of Müllerian structures. In addition to our case, to the best of our knowledge, only one case of PMDS with uterine leiomyoma has been described in the literature so far.

Keywords: Persistent Müllerian Duct Syndrome; Leiomyoma; Uterus; Fertility; Lower Urinary Tract Symptoms

P26 THE EFFECT OF HYPOXIA ON BIOCHEMICAL PARAMETERS IN VITREOUS HUMOR OF DOMESTIC PIGS

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The vitreous humor (humor vitreous) is an anatomical structure of the eye resembling a gel that fills the space between the lens and the retina. Its anatomical position and composition make it an ideal substrate for biochemical analysis in forensic investigations. The onset of postmortem changes is delayed for a certain period of time after death, so as well as estimation of the postmortem interval (PMI), it is sometimes possible to determine the cause of death. Given the sensitivity of renal tissue to hypoxia, this preliminary study aimed to determine whether ante mortem hypoxia causes changes in the renal biochemical parameters in the vitreous humor of the eye.

This preliminary study was conducted on two groups of domestic pigs (Sus scrofa domesticus), one group exposed to hypoxia and a control group (N=6). The research group was exposed to hypoxia for one hour (Fi O2 7%). The blood and eye samples of the research group were taken immediately after euthanasia of the pigs, while the samples of the control group were taken immediately after regular slaughter. The serum was separated from the coagulated blood by centrifugation. After enucleation, the eyes were wrapped in parafilm, and a needle was inserted into the eye and fixed along the lateral edge of the optic nerve. The separated serum and vitreous of the eye were stored at -20°C until analysed. Before analysis, the vitreous and serum samples were thawed, centrifuged, and analysed using an Architect C4000 automated biochemical analyzer (Abbott Park, Illinois, USA). The biochemical analysis determined the concentrations of urea and creatinine, and their ratio (UCR), as well as the concentrations of calcium and phosphates. A histopathological analysis of the pigs' kidneys was performed. Statistical analysis of the data was performed using computer software, and statistical hypotheses were tested at a significance level of $p<0.05$.

Histopathological analysis of the kidneys from the pigs exposed to hypoxia showed changes in the structure of the renal parenchyma in the form of mild acute cortical tubular necrosis. Biochemical analysis revealed significantly higher concentrations of creatinine, UCR, calcium, and phosphates in the serum of the hypoxic pigs compared to the vitreous, as well as the creatinine, UCR, and phosphate levels in the control group ($p<0.05$). When comparing pig groups, significantly higher concentrations of urea and UCR were found in the vitreous of the hypoxic pigs, as well as significantly lower concentrations of creatinine and a higher UCR in their serum compared to the control pigs ($p<0.05$).

It is important to note that there is limited knowledge about the redistribution of biochemical parameters between blood, vitreous and aqueous humor. Changes in the serum urea concentration are reflected in changes in the vitreous. Considering the higher urea concentrations in the vitreous of hypoxic animals compared to their serum levels, it can be concluded that urea in the vitreous is a potential marker for detection of ante mortem hypoxia.

Key words: domestic pigs; vitreous humor; biochemistry; hypoxia; urea; creatinine; UCR; phosphates; calcium

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P27 ANGIOSARCOMA OF THE LUNG: CASE REPORT

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INTRODUCTION

Angiosarcoma is a rare, highly aggressive, malignant tumour composed of endothelial cells of vascular or lymphatic origin. More than half of the cases arise on the skin, while some occur in deep soft tissues, most often in the deep muscles of the lower extremities, retroperitoneum, trunk, and head and neck. Men are more affected than women, with a peak incidence around the age of seventy. Half of the patients develop metastases, most often to the lungs, lymph nodes, soft tissues, bone and liver. The prognosis is poor, as more than half of patients die within one year. Primary pulmonary angiosarcoma is extremely rare, and only a few dozen cases currently exist in the literature.

CASE REPORT

We report a 41-year-old male patient admitted to the hospital because of an extensive right-sided pleural effusion, contralateral displacement of structures and pulmonary atelectasis. He was experiencing symptoms of chest pain, febrility and occasional cough for a month. Cytologic examination of the haemorrhagic pleural effusion revealed metastatic adenocarcinoma. A CT scan showed an infiltrate in the apical segment of the right upper lobe, deposits on the pleura and enlarged lymph nodes in the right mediastinum. Exploratory thoracotomy recorded the tumour process surrounded by blood that affected the structures of the hilus, part of the pericardium, and the pleura. Biopsy revealed diagnosis of epithelioid angiosarcoma. The patient underwent a lobectomy. The pathohistological analysis demonstrated mitotically active, partially haemorrhagic and necrotic tumoral tissue composed of solid formations and individual atypical epithelioid cells. Focally, anastomosing vascular channels lined by atypical endothelial cells were present. Tumoral cells were diffusely positive for CD31, ERG, OSCAR, and, in larger clusters, for CD34 and BAP1. Some tumoral cells were positive for FLI-1. Infiltration of pulmonary parenchyma, as well as mediastinal lymph nodes, was observed.

CONCLUSION

Primary pulmonary angiosarcoma is a rare malignant tumour with a poor prognosis. There is no specific clinical presentation and radiology findings, so histopathological and immunohistochemical findings remain crucial for diagnosing this tumour.

P28 PIGMENTED EPITHELOID MELANOCYTOMA: A CASE REPORT.

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Pigmented epithelioid melanocytoma (PEM) is a rare malenocytic neoplasam classified as a high-grade melanocytoma, mainly affecting children and young adults. According to available literature in the majority of cases it has an indolent clinical course and metastatic potential limited to regional lymph nodes. Distant metastasis have been reported, but are extremely rare.

We present a case of a 10 year old patient with a black pigmented papule measuring 0,8 cm on the skin of his back. Dermoscopically the papule was structureless, with a few black irregularly shaped satellite lesions.

Excisional biopsy was performed and we received resected skin measuring 2,2:1,2:1 cm with black papule measuring 0,7 cm. Histopathological examination showed tumor located in papillary and reticular dermis composed of abundant melanophages admixed with individual tumor cells. Tumor cells were large and polymorphic with prominent nuclei, centrally located eosinophilic nucleoli and weakly pigmented cytoplasms. Binuclear and multinuclear (Hodgkin-like) cells were also found. Immunohistochemical staining showed expression of HMB45 and Melan A, as well as loss of expression of PRKAR1A. There were no evident mitosis. On the periphery, perivascular extensions of described tumor were observed, consistent with the clinical presentation. The tumor was located 3.6 mm from the nearest resection margin. Clinical follow-up showed no new lesions.

Based on the cases reported to date, PEM is considered to have a low potential for distant metastasis and lethal outcome. However, considering its rarity and insufficient amount of scientific data it is favorable to continue periodic clinical follow-up in PEM patients.

P29 MULTIPLE PHEOCHROMOCYTOMA IN A PATIENT WITH HEREDITARY MEN2 SYNDROME

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Multiple endocrine neoplasia type 2 (MEN2) is a rare autosomal dominant familial disease which causes tumors in various endocrine glands, commonly classified into two subtypes (MEN2A and MEN2B) according to clinical presentation. MEN2 is caused by germline mutations of the RET gene, a proto-oncogene located on chromosome 10q11.2 which encodes a tyrosine kinase receptor primarily expressed in neuroendocrine and neural cells. The MEN2A subtype accounts for over 80% of cases of MEN2. Over 90% of patients develop medullary thyroid carcinoma (MTC), up to 50% develop pheochromocytomas, and 30% develop primary hyperparathyroidism. We report a case of a patient diagnosed with MEN2-associated MTC and three pheochromocytomas following her mother's diagnosis of MTC.

A 33-year-old female patient consulted an endocrinologist after her mother was diagnosed with MTC. Ultrasound and fine needle aspiration confirmed the presence of MTC with metastasis in the cervical lymph nodes, with elevated calcitonin levels (4633 ng/L). A total thyroidectomy with bilateral neck dissection was performed. Histopathologycal analysis found bilateral MTC measuring up to 2.3 cm in diameter in the right lobe and 2.4 cm in the left lobe, as well as a metastasis in the lymph node measuring 2 cm.

A subsequent CT scan revealed two tumors in the in the right adrenal gland and one tumor in the left gland, all measuring between 2.5 cm and 2.7 cm in diameter. A laparoscopic right complete and left partial adrenalectomy was performed. Histologically, the three tumors were pheochromocytomas, with the largest tumor in the right gland being classified as "concerning for malignancy" according to the Pheochromocytoma of the Adrenal gland Scaled Score (PASS). Microscopically, the tumor was highly cellular, composed of solid nests of polygonal cells with marked nuclear pleomorphism and prominent nucleoli. A large area of necrosis was observed, as well as 5 mitosis per 10 high power fields, of which some were atypical. The other two tumors showed no necrosis and up to 1 mitosis per 10 high powered fields.

Genetic testing found that the patient had the C634Y mutation of the RET gene on exon 11, the most common variant associated with MEN2 pheochromocytoma. The patient's mother was also found to have the same mutation. Genetic testing and endocrinology workup were advised for the patients younger brother. Screening and intervention prior to the development of advanced disease have proven to increase survival in patients with hereditary MTC.

P30 CASE REPORT OF CARUNCULAR ONCOCYTOMA: RARE OCULAR NEOPLASM

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OBJECTIVE

Caruncle is a small, globular, modified skin present at the inner corner of the eye. Caruncular lesions are rare lesions, that can be related to sweat glands, hair follicles and sebaceous glands, and accessory lacrimal gland harbored in the caruncle. Oncocytoma is a benign neoplasm of the glandular and secretory epithelium that can involve many organs; and can occur in relation to the cutaneous and ocular adnexa.

CASE REPORT

We present a case of a 75-year-old female patient with an elevated lesion at the inner corner of the eye with degeneration of the caruncle. The lesion was excised and the specimen was sent to the Department of Pathology and Forensic Medicine in University Hospital Osijek. On gross examination, the specimen measured 1,4 x 0,5 cm. Histology examination revealed the well-circumcised lesion measuring 3 mm in diameter with tubular architecture composed of cells that had regular vesicular nuclei and intensely eosinophilic cytoplasm. The cells showed positive immunohistochemical stain for CKAE1/AE3 and CK7, focally positive for alfa-1-antitrypsin, GCDFP, and CEA, and were negative for S100, SMA, ER, and PR stains, hence the diagnosis of caruncular oncocytoma was made. On histologic examination, the tumor was present at resection margins. To the best of our knowledge, so far the patient has shown no recurrence of the tumor.

CONCLUSION

Although caruncular lesions are rare and usually benign; various tumor types can arise at this site, and some tumors, even if considered benign, can be locally aggressive, thus histologic examination is essential to provide accurate diagnosis and therapy.

P31 ASSESSMENT OF TUMOUR-INFILTRATING LYMPHOCYTE (TIL) RATIO IN FELINE AURICULAR SQUAMOUS CELL CARCINOMA USING CD3 AND CD79 ANTIBODIES

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Squamous cell carcinoma (SCC) is a malignant neoplasm that originates from epidermal cells and frequently occurs in ear, nasal planum, eyelid and temporal region of cats. Uniform classification systems such as Broder's and Bryne's classification system are used to assess the malignancy of tumour.

Tumour-infiltrating lymphocytes (TILs) are immune cells of non-tumorous origin that infiltrate the tumour area and are a part of the tumour microenvironment. The location and the type of TILs can affect the clinical outcome of the disease and the survival rate.

The aim of the study was to assess the degree of malignancy of SCC in ear based on the number and proportion of CD3+ and CD79+ lymphocytes. Also, to compare two grading systems in histopathological diagnosis. The study was performed on 30 archived samples of the auricular SCC. The histopathological samples were graded according to Broder's and Bryne's classification systems. CD3 and CD79 positive cells were counted in the 10 representative areas without necrosis.

The majority of samples (60%, n=18) were from female individuals, and most were mixed-breed cats (40%, n=12). The average age of the sampled cats was 9 years. Multifocal lymphoplasmacytic infiltrates and tumour necrosis were observed in all samples (n=30). The average number of mitoses was 3.5/HPF. There was no statistically significant difference (Kruskal-Wallis and Mann-Whitney U test) in the number of TILs between malignancy grades. However, it was observed that the first grade tumours had a lower mean number of TILs (CD3+ and CD79+) than the second grade tumours according to the Broder's system. Due to the importance of TILs for the understanding of malignant diseases, the introduction of new, more objective grading systems is needed in veterinary medicine.

P32 COLLECTING DUCT CARCINOMA: A CASE REPORT

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Collecting duct carcinoma (CDC), also known as Bellini carcinoma, is a rare subtype of renal cell carcinoma, making up less than 1% of all renal malignancies. It typically affects adults with a mean age of around 50-60 years with slightly male predominance. The exact etiology of CDC remains unclear, however, it is thought to arise from the collecting ducts of the renal medulla. Risk factors may include smoking, exposure to certain chemicals and genetic predispositions. Pathologically, CDC is characterized by aggressive behavior, infiltrative growth, and tendency for early metastasis. Histologically, CDC can exhibit solid, tubulopapillary, or cribriform growth patterns, with high-grade nuclear features, prominent nucleoli, and frequent mitoses. Immunohistochemical analysis often reveals positivity for PAX8, vimentin and CK7 and is negativity for GATA3 and racemase (AMACR), helping with the diagnosis. Differential diagnosis of CDC includes other renal cell carcinoma, such as papillary renal cell carcinoma (PRCC) and urothelial carcinoma involving the renal pelvis. PRCC, especially solid type PRCC can resemble CDC, but lack prominent nucleoli and PRCC is racemase (AMACR) positive. Urothelial carcinoma also resembles CDC but it is differentiated based on immunohistochemical staining profile, it is typicaly positive for urothelial markers GATA3.

Here we present a case of a 63-year-old patient initially evaluated for right lumbar pain. A MSCT scan of the chest and abdomen revealed an expansive, heterogeneously enhancing mass in the right kidney, infiltrating surrounding structures and displaying metastatic spread to mediastinal lymph nodes and lungs. Following nephrectomy, histopathological analysis confirmed high-grade CDC (nuclear grade G3) with characteristic histological features including solid growth pattern, large nuclei, pleomorphic cells with prominent nucleoli, and numorous mitotic activity. Intracytoplasmic and intraluminal mucin was also present. Glomeruli surrounding the tumor tissue were preserved. Tumor necrosis was present in 30% of tumor mass. At first, histologically tumor resembled high-grade urothelial carcinoma. However, through immunohistochemical analysis, the tumor was positive for PAX8, CD10, vimentin, and focally positive for CK7, while negative for GATA3 and racemase (AMACR). Considering the immunohistochemical and histological findings, the tumor corresponds primarily to high-grade collecting duct carcinoma (Bellini carcinoma) of nuclear grade G3 (WHO/ISUP). The tumor infiltrated the renal hilum, collecting system, renal parenchyma, and perirenal fat with abundant lymphovascular invasion and perineural infiltration. Resection margins of blood vessels were positive, while the resection margin of the ureter was negative. In this case we show typical histological features and immunohistochemical analysis of CDC and also, how to differentiate it from from other renal malignancies which is crutial for appropriate treatment.

Key words: collecting duct carcinoma, Bellini, kidney, immunohistochemistry, PAX8, AMACR

P33 CLEAR CELL PAPILLARY RENAL CELL CARCINOMA: A CASE REPORT

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Clear cell papillary renal cell carcinoma (ccpRCC) is a distinct subtype of renal cell carcinoma (RCC) recognized by the World Health Organisation in 2016. It shares features with both clear cell RCC (ccRCC) and papillary RCC (pRCC), necessitating precise diagnostic criteria to avoid misclassification. ccpRCC exhibits unique clinical behavior and characteristics, occurring typically between ages 18 to 88 with no gender preference. Initially associated with end-stage renal disease (ESRD), ccpRCC can also arise spontaneously in normal kidneys. The exact genetic causes are unknown, and while often non-aggressive, some advocate reclassifying it as benign or low malignant potential due to its indolent nature and similarities to benign neoplasms.

This case report presents a 69-year-old male patient with an incidental finding of ccpRCC during routine imaging for unrelated symptoms. The patient underwent a successful partial nephrectomy, and histopathological analysis confirmed ccpRCC based on distinct histological characteristics such as tubulopapillary structures with bright cells and "piano key-like" nuclei and immunohistochemical characteristics, including strong positivity for cytokeratin 7 (CK7) and carbonic anhydrase IX (CAIX). Immunohistochemistry also revealed negativity for racemase (AMACR) and positivity in cystic parts for CD10 and negativity for CD10 in solid parts of the tumor. The genetic landscape of ccpRCC remains elusive, with specific chromosomal patterns distinguishing it from other RCC subtypes. Molecular studies suggest potential involvement of the hypoxia-inducible factor (HIF) pathway. Although generally associated with a favorable prognosis, ongoing research aims to clarify the underlying pathobiology and molecular mechanisms of ccpRCC for improved diagnostic and therapeutic strategies.

Key Words: clear cell papillary renal cell carcinoma, clear cell renal cell carcinoma, papillary renal cell carcinoma, immunohistochemistry

P34 CASE REPORT: SUPERFICIAL ANGIOMYXOMA IN A 66-YEAR-OLD PATIENT

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OBJECTIVE

Superficial angiomyxoma is a rare benign soft tissue tumor often found in the skin and subcutaneous tissues of the head, neck, and trunk. Despite its benign nature, it is known for a high local recurrence rate and can be locally aggressive, if not completely excised. This report presents a case of superficial angiomyxoma in a 66-year-old male patient.

CASE REPORT

A 66-year-old male patient, presented with an elevated tumor mass on the right occipital scalp that clinically appeared as a dermal cyst or pilomatricoma. The patient underwent surgical excision that was performed without complications and material was sent for pathohistological examination. Macroscopically, a lesion measuring 3.5 x 3 x 2 cm was found. On microscopic examination, the lesion was characterized by myxoid stroma with bland spindle to stellate-shaped cells and numerous blood vessels. Necrosis, as well as atypical mitoses, was not found. Surgical margins were clear and well-defined. Immunohistochemical staining of lesion showed positivity for CD34 and vimentin, and negativity for S100. Based on clinical and histopathological findings, the lesion was diagnosed as a superficial angiomyxoma. Postoperatively, the patient's wounds healed well with no signs of recurrence observed at follow-up. The patient was advised on proper wound care and photoprotection and scheduled for routine follow-ups.

CONCLUSION

This case highlights the importance of recognizing superficial angiomyxoma, a rare but significant entity due to its potential for recurrence, and clinical similarity to other skin lesions. Complete surgical excision with clear margins is essential for management, and ongoing follow-up is necessary to monitor for recurrence.

P35 UNUSUAL CASE OF EXTRAPELVIC ENDOMETRIOSIS ISOLATED WITHIN THE RECTUS ABDOMINIS MUSCLE

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BACKGROUND

Extrapelvic endometriosis affects approximately 6% of all women with endometriosis, of which endometriosis of the anterior abdominal wall (AWE) accounts for up to 1%. Although the etiopathogenesis remains unclear, it is usually associated with previous gynaecological surgery and is located near the surgical scar. Nevertheless, due to the unusual localization and the absence of classic symptoms in about 50% of patients, the correct preoperative diagnosis is quite difficult and is often misdiagnosed due to a variety of possible differential diagnoses and inconclusive imaging. Though extremely rare, yet cosidering possible malignant transformation into endometrioid carcinoma, the treatment of choice for endometriosis of the rectus abdominis is wide local excision with negative margins.

CASE PRESENTATION

A 39-year-old, otherwise healthy woman visiting her outpatient gynaecologist regarding five months of increasing abdominal pain during exercise or physical strain and a painful, palpable, hard mass in the left infraumbilical region. Ultrasonography (US) revealed a heterogeneous, mainly hypoechoic formation within the left rectus abdominis muscle with a dimeter of approximately 2 x 1.5 cm, while Doppler sonography showed blood vessels within the lesion, without rapid blood flow. Magnetic resonance imaging (MRI) confirmed a 2.1 x 0.9 cm focal lesion in the left rectus abdominis muscle of unknown aetiology. No other intra-abdominal lesions were noted, and there was no association with the caesarean section scar. Whereas cytologic examination after US-guided fine-needle aspiration (FNA) biopsy revealed both groups and single atypical cells that were clustered and overlapping, with moderate to severe, poorly circumscribed basophilic cytoplasm, an excisional biopsy was performed. Microscopic pathohistological analysis revealed morphologically normal endometrial stroma and glands between skeletal muscles with positive margins, and the lesion was diagnosed as endometriosis. As the endometriotic focus could not be completely removed, further supportive drug treatment with progestogens was initiated after consultation with the patient to prevent further surgery and the recurrence of endometriosis. After 5 years of follow-up, the patient is still symptom-free and without recurrence of the disease.

CONCLUSION

Despite lately significant progress in imaging techniques, the final diagnosis of isolated extrapelvic endometriosis within the rectus abdominis muscle is still usually made late and by pathohistological examination after excision or biopsy. Although this form of endometriosis is extremely rare, it must be considered as a differential diagnosis due to the significant increase in caesarean section rates in women of childbearing age in recent decades, regardless of the absence of typical symptoms or a non-specific aberrant localization, as was present in this case. A multidisciplinary approach is recommended to achieve optimal diagnostic methods for early diagnosis, the most appropriate therapeutic treatment, and optimization of patient outcomes by minimizing the risk of recurrence and preventing the likelihood of malignant transformation of this rare form of extrapelvic endometriosis.

Keywords: extrapelvic endometriosis, unusual localisation, rectus abdominis, incomplete resection, follow up

P36 EPITHELIOID FIBROUS HISTIOCYTOMA

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OBJECTIVE

Epithelioid fibrous histiocytoma (EFH) is a rare type of skin tumor primarily characterized by the presence of Anaplastic Lymphoma Kinase (ALK) gene rearrangement, often involving various fusion partners. It is believed to originate from fibroblasts within the dermal microvascular unit and dendritic histiocytes. Previously thought to be a variant of fibrous histiocytoma, this fibrohistiocytic tumor is now recognized as a distinct entity. It was originally described by Wilson Jones in 1988, based on a case series involving nineteen lesions. EFH may exhibit morphological variations, but the primary histopathological criterion is the presence of epithelioid cells comprising at least 50% of the lesion.

CASE REPORT

We present the case of a thirty-four-year-old male who presented to the physician with a slowly growing, painless tumor in the area of the left wrist. The clinical differential diagnosis included squamous cell carcinoma or basal cell carcinoma. A skin biopsy measuring 1.7x0.9x0.5 cm with a whitish, dome-shaped lesion on the surface, measuring 0.8 cm in diameter, was submitted for pathology. Histologically, the tumor was well-circumscribed, located in the dermis, and surrounded by an epidermal collarette. The tumor was made of clusters of epithelioid cells with abundant eosinophilic cytoplasm and vesicular nuclei with prominent nucleoli, occasionally accompanied by multinuclear tumor cells. The connective tissue stroma focally contained mildly dilated blood vessels, mononuclear infiltrates, and rare siderophages. Up to one mitosis per 10 high-power fields was observed on examined sections. Immunohistochemically, the tumor cells exhibited focal positivity for CD68 and ALK, while melan-A reaction was negative. The excision margins were free of tumor. On the basis of histological and immunohistochemical characteristics of the tumor, the diagnosis of epithelioid fibrous histiocytoma was established.

CONCLUSION

Epithelioid fibrous histiocytoma is rare skin tumor with ALK gene rearrangement, arising from fibroblasts and dendritic histiocytes. Although predominantly composed of epithelioid cells, other variants have also been described. The most crucial differential diagnosis involves melanocytic tumors with epithelioid morphology, such as Spitz nevi or even melanoma. However, immunohistochemistry can often resolve this dilemma.

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