POSTERS

BONE MARROW CELL APOPTOSIS IN A PATIENT WITH MONOCYTIC LEUKEMIA

Lj. Vrbanus, M. Sučić, M. Marković-Glamočak, S. Ries, K. Gjadrov-Kuveždić, B. Labar

Division of Cytology, Clinical Department of Pathology and Cytology; Division of Hematology, University Department of Internal Medicine, Zagreb University Hospital Center and Zagreb University School of Medicine, Zagreb, Croatia

The aim is to report on a patient with monocytic leukemia and excessive bone marrow cell apoptosis. Cytomorphology of bone marrow (BM) and peripheral blood (PB) smears was analyzed after standard Pappenheim and cytochemical staining. Flow cytometry immunophenotyping and cytogenetic analysis of BM were also performed. A 76-year-old man with heart disease was admitted to the hospital for progressive weakness and fever. BM fine needle aspiration (FNA) was done after the finding of leukocytosis and thrombocytopenia in PB. BM cytomorphological analysis revealed excessive apoptotic cells (almost 99%) with only few cytomorphologically preserved cells. In PB there were 80%-90% of monocytic cells (46% monoblasts, 29% promonocytes and 11% monocytes). Cytochemistry confirmed the monocytic cell lineage while almost all monocytic cells in PB and apoptotic cells in BM were esterase positive. These findings pointed to acute monocytic leukemia M5b type. BM flow cytometry immunophenotyping revealed apoptotic cells with no specific lineage cell antigens. FISH was negative for t(9;22) and 11q23. Because of the patient's age and heart disease reduced-dose cytostatic therapy was introduced, which led to clinical improvement and reduction of leukocytosis in PB. In conclusion, cytomorphology and cytochemistry of PB point to proliferation of immature monocytic cells in patients with BM apoptosis. Apoptosis is increased in myelodysplastic syndromes but some reports have indicated Fas (CD95) and LAIR-1 mediated apoptosis in M4 and M5 AML types.

GLOSSAL ANGIOMYOMA: CASE REPORT

T. Bujas[1], V. Štitić[1], M. Mlinac-Lucijanić[1], S. Anzić[1], I. Pavić[2], H. Čupić[2]

[1]Department of Pathology and Forensic Medicine, ENT Department, Karlovac General Hospital, Karlovac; [2]Ljudevit Jurak University Department of Pathology, Sestre milosrdnice University Hospital, Zagreb, Croatia

Angiomyoma is an uncommon, benign, soft tissue tumor characterized by bundles of smooth muscle cells intermixed with numerous vascular spaces, which usually develops in lower extremities. Most oral cases occur in the lips and tongue, the latter being quite a rare site. A 58-year-old man was examined at ENT Department, Karlovac General Hospital. A painless, ball shaped, red colored and well vascularized tumor was found on the left side extending to the front part of the tongue, measuring up to two centimeters. The tumor was first noticed several months before and slowly enlarged. Preoperative laboratory tests including electrocardiogram and x-rays were unremarkable. The patient underwent surgical procedure. Histological, histochemical (Mallory stain) and immunohistochemical (smooth muscle actin) analysis confirmed the diagnosis of angiomyoma. The patient had extensive bleeding for several days after the surgery but recovered after one week. On follow up examination the patient was well, with no recurrence of the angiomyoma. To the best of our knowledge, this is the case of glossal angiomyoma described in the Croatian population. It was a very rare case of angiomyoma. Most of the cases reported showed specific localization such as extremities. The world medical literature contains up to ten similar cases of angiomyoma localized in the tongue, as in our patient.

TRAFFIC ACCIDENT VICTIMS IN KARLOVAC DISTRICT DURING ELEVEN-YEAR PERIOD

T. Bujas, M. Mlinac-Lucijanić, V. Štitić

Department of Pathology and Forensic Medicine, Karlovac General Hospital, Karlovac, Croatia

Vehicle accidents in Croatia, especially during summer time, are among the leading causes of death and

the first one in young people. The mechanism of injury influences the patterns of injury in victims of vehicle accidents and pedestrian accidents. The aim of the study was identification and analysis of injury profiles of motor-vehicle trauma patients. Data on all traffic accident victims including car accidents and pedestrian accidents recorded during the 1997-2007 period in the computer database of the Department of Pathology and Forensic Medicine, Karlovac General Hospital, were analyzed. In the study period, there were 251 deaths (M/F=186:65), male age range 4-88 (mean 47.7) years and female age range 8-79 (mean 47.8) years. The majority of cases (179 males and 58 females) occurred in the old part of the highway until 2003. The number of accidents started to decline from 2003. All injuries were serious physical injuries with fatal consequences (brain contusion, aortic rupture, multiple fractures, etc.). Study results pointed to clear association of different road-user categories with age and sex incidence patterns, outcomes and injury profiles. The number of accidents fell down because of the improved conditions and safer drive on the new highway, although the number of accidents rose again, resulting in even more severe accidents, in the highway segment from Kapela onward, which is not under the Karlovac District.

AUTOPSY AS A FUNDAMENTAL PART OF QUALITY ASSURANCE IN THE INTENSIVE CARE UNIT

I. Pavić[1], D. Ivanović[1], A. Demirović[1], P. Radulović[1], L. Stemberger[2], D. Baličević[1]

[1]Ljudevit Jurak University Department of Pathology, Sestre milosrdnice University Hospital; [2]School of Medicine, University of Zagreb, Zagreb, Croatia

The role and number of autopsies performed in hospitals have declined over the last decades. An increasing number of retrospective studies analyzed tried to establish the role of autopsy as a fundamental part of progress in medical knowledge. Intensive care unit (ICU) data pointed to major discrepancies between clinical and autopsy diagnoses in 10%-25% of cases. The aim of this study was to assess the correlation between clinical diagnosis and subsequent autopsy findings in adult patients and to identify the types of errors in the diagnosis to help upgrade the quality of care at ICU. We retrospectively reviewed medical records and final autopsy reports of patients admitted to surgical and non-surgical ICU at our hospital from January 1, 2001 until December 31, 2005, classifying clinical and pathological diagnoses according to the International Classification of Diseases 10th revision (1994). In order to compare discrepancies between premortem and postmortem diagnoses, we used modified classification of Goldman, which divides diagnoses into 5 classes: class I and II discrepancies were termed major, class III and IV as minor if clinically diagnosable or not, and class V as non-discrepant diagnosis. This study addressed class I: a discrepant primary diagnosis with adverse impact on survival (e.g., unrecognized treatable infection diagnosed as inoperable tumor mass); and class II: a discrepant primary diagnosis with equivocal impact on survival (e.g., pulmonary embolus diagnosed and treated as acute myocardial infarction). During the study period, there were 5133 hospital deaths, including 2760 (53.7%) and 722 (15.0%) patients that died at internal and surgical departments, respectively. The total number of autopsies (n=1415) performed accounted for a minor part (27.6%) of the total number of patients that died at internal (n=970; 68.5%) and surgical (n=122; 8.6%) departments. The share of autopsy at internal department ICU was 37.4% (363 of 970) and at surgical ICU 69.7% (85 of 122). Out of 448 ICU autopsies analyzed, 109 (24.3%) were classified as Goldman class I and 43 (9.6%) as class II. There was no significant sex difference. The most common discrepant cause of death was cardiovascular disease (46.6%). The share of pulmonary embolism (up to 40%) was the leading misdiagnosed cause of death in both classes (I and II). It is concluded that even in the era of modern diagnostic technologies, pertinent information on autopsies performed is one of the fundamental parts of diagnostic methods that can improve future management of ICU patients.

GENDER AND TRISOMY 21 ANALYSIS ON ABORTED FETUS TISSUE

P. Korać, R. Lasan-Trčić, M. Dominis

Department of Pathology and Cytology, Merkur University Hospital, Zagreb, Croatia

Amniocentesis examination showed a female fetus with trisomy 21 suggesting Down syndrome. After medical pregnancy termination, administrative mistake took place and the fetus was regarded as male. The only materials left were the heart and femur stored in formalin. Amniocentesis results could only be confirmed by

the available tissue examination. The heart was submitted to formalin fixation and embedded in paraffin following standard procedure. The femur needed to be decalcinated for a longer period than standard bone marrow trephine biopsy and then was submitted to formalin fixation and embedded in paraffin. FISH technique was performed on sections from both tissues using probes for chromosomes X and Y, and a probe for chromosome 21. Results showed two signals that represented X chromosome and three signals that represented chromosome 21. The data suggested that final description of the aborted fetus was an administrative mistake indeed. It was a female fetus that had Down syndrome.

WNT SIGNAL TRANSDUCTION PATHWAY IS TARGETED IN MENINGIOMA

M. Zeljko[1], N. Pećina-Šlaus[1,2], T. Nikuševa-Martić[1,2], D. Tomas[3], H. Čupić[3], V. Beroš[4]

[1]Laboratory of Neurooncology, Croatian Institute for Brain Research, School of Medicine, University of Zagreb; [2]Department of Biology, School of Medicine, University of Zagreb; [3]Ljudevit Jurak University Department of Pathology, Sestre milosrdnice University Hospital; [4]University Department of Neurosurgery, Sestre milosrdnice University Hospital, Zagreb, Croatia

The molecular mechanisms and candidate genes involved in the development of meningiomas still need investigation and elucidation. In the present study, 33 meningiomas were analyzed for genetic changes of the tumor suppressor gene adenomatous polyposis coli (APC), a component of the WNT signaling. Gene instability was tested by polymerase chain reaction/loss of heterozygosity (LOH) using the restriction fragment length polymorphism (RFLP) method. RFLP was performed by two genetic markers, Rsa I in APC exon 11 and Msp I in APC exon 15. Results of the analysis showed altogether 15 samples with LOH of the APC gene out of 32 heterozygous patients (47%). Seven patients had LOHs at both exons, while 4 LOHs were exclusively found on exon 11 and exon 15 each. According to histopathologic grade, the changes were distributed as follows: LOH was found in 46% of meningotheliomatous, 33% of fibrous, 75% of mixed (transitional) and 75% of angiomatous meningiomas. One LOH was found in a single case of psammomatous meningioma. None of the LOHs was found in atypical and anaplastic cases. Immunostaining showed that samples with LOHs were characterized by the absence of APC protein expression or presence of mutant APC proteins ($\chi^2=13.81$; $df=2$; $p<0.001$). We also showed that nuclear localization of beta-catenin correlated with APC genetic changes ($\chi^2=21.96$; $df=2$; $p<0.0001$). The results of this study suggest that genetic changes of APC gene play a role in meningioma formation.

ANALYSIS OF E-CADHERIN AND BETA-CATENIN GENES IN GERMINOMA AND TERATOMA CASES

N. Pećina-Šlaus[1,2], T. Nikuševa-Martić[1,2], M. Zeljko[1], D. Tomas[3]

[1]Laboratory of Neurooncology, Croatian Institute for Brain Research, School of Medicine, University of Zagreb; [2]Department of Biology, School of Medicine, University of Zagreb; [3]Ljudevit Jurak University Department of Pathology, Sestre milosrdnice University Hospital, Zagreb, Croatia

Genetic basis and the mechanisms of development of germ cell tumors of the central nervous system (CNS) are still unexplained. Changes of E-cadherin (CDH1) and beta-catenin (CTNNB1) genes in two CNS germ cell tumors are reported. Both gene products are components of adherens junctions, but are also involved in the Wnt signaling pathway. A case of germinoma of the CNS and a case of spinal channel teratoma were tested for loss of heterozygosity (LOH) of E-cadherin gene by PCR amplification of tetranucleotide polymorphism (D16S752). Changes of beta-catenin were tested by heteroduplex method. Both germ cell tumors analyzed demonstrated LOH of the CDH1 gene. Analysis of exon 3 of the CTNNB1 gene showed additional band in the germinoma, suggesting that this sample harbored mutation in beta-catenin gene. Immunostaining showed that LOHs in our samples were accompanied by the absence of E-cadherin protein. We also investigated E-cadherin expression in another four germinomas, of which three were negative and one was mildly positive. Our findings may contribute to better understanding of the germ cell tumor genetic profile.

DEVELOPMENT OF THE RAT EPIGLOTTIS

S. Marinović-Kulišić[1,2], G. Jurić-Lekić[2], F. Bulić-Jakuš[3], V. Radujković[2], G. Grahovac[2], M. Vlahović[3], A. Katušić[3], N. Sinčić[3], Lj. Šerman[3]

[1]University Department of Dermatology and Venereology, Zagreb University Hospital Center; [2]Department of Histology and Embryology;
[3]Department of Biology, School of Medicine, University of Zagreb, Zagreb, Croatia

The ability for differentiation of various undifferentiated embryonic cells and tissues has been extensively investigated for regenerative medicine purposes, i.e. replacement of tissues or organs damaged by trauma or disease. Although epiglottis was used for palpebral reconstruction in human medicine, there are almost no data on the early development of this organ in the rat or its ability to differentiate in a transplant. Moreover, the adult rat epiglottis has not yet been subjected to TEM analysis. Fisher rat epiglottises were microsurgically isolated under a dissecting microscope from 17-day-old Fisher rat embryos and fixed or transplanted under kidney capsules of adult rats where they were left for 14 days. The DNA demethylating agent 5-azacytidine (5azaC) (5 mg/kg) was injected intraperitoneally to the experimental group over the first three days. Adult rat epiglottises were explanted from 3-month-old rats and fixed. Classic histologic and TEM analysis as well as immunohistochemical detection of the Proliferating Cell Nuclear Antigen (PCNA) and quantitative stereological analysis of its expression (numerical density Nv) were performed. PCNA was expressed in almost all cells of the 17-day-old epiglottis, while in transplants its expression was restricted to undifferentiated cartilage and epithelial cells. Differentiation of the cartilage and epithelia in transplants proceeded well but did not reach the stage of differentiation in adult epiglottis because they lacked elastic fibers and stratified squamous epithelium. 5azaC increased PCNA expression (Nv) in transplants. This investigation provided some new data on the rat epiglottis development.

5-AZACYTIDINE SEEMS NOT TO DISTURB ODONTOGENESIS IN RAT EMBRYONIC MANDIBLE TRANSPLANTS TO ECTOPIC SITE

I. Turković[1], G. Jurić-Lekić[1], F. Bulić-Jakuš[2], V. Lokošek[1], V. Radujković[1], M. Vlahović[2], A. Katušić[2], Lj. Šerman[2], N. Sinčić[2]

[1]Department of Histology and Embryology;
[2]Department of Biology, School of Medicine, University of Zagreb, Zagreb, Croatia

In this study, differentiation of the rat embryonic mandibular tooth germs under the influence of the DNA demethylating drug 5-azacytidine (5azaC) was investigated. The 13- and 14-day-old Fisher rat embryonic mandibles were microsurgically isolated under a dissecting microscope. Adult male rats of the same strain were anesthetized and the mandibles were transferred by the braking pipette to the subcapsular kidney space. 5azaC (5 mg/kg) was applied intraperitoneally over three days to the experimental group of animals while controls were treated by PBS. After two weeks, transplants were fixed for routine histology, embedded in paraffin and sectioned. In both experimental and control group of animals, transplants were surviving well. Dental germs developed to the bell stage of tooth development and, apparently, no differences were found in odontogenesis of the experimental and control group of transplants. Because it is known that 5azaC can cause changes in gene expression and disturb development, further studies are to be done to investigate whether odontogenesis in this system is really less susceptible to this DNA demethylating agent.

CARTILAGINOUS CHORISTOMA OF THE TONGUE IN A 16-MONTH-OLD FEMALE

L. V. Batelja[1], B. Marn[2], S. Seiwerth[1]

[1]Department of Pathology, School of Medicine, University of Zagreb;
[2]Children's Hospital Zagreb, Zagreb, Croatia

Cartilaginous choristomas are a rare group of distinctive tongue tumors. They are usually seen in adults, very rarely in infants. So far, 28 cases of cartilaginous choristomas have been published since 1890 in the English literature. The aim is to present a case of cartilaginous choristoma in the youngest patient reported to date. In a 16-month-old girl, an asymptomatic nodular mass was

detected on routine physical examination. The lesion was located in the base of the tongue. It was sessile, well-demarcated, solid and 0.5 cm in diameter. Surgical excision was performed. The postoperative course was uneventful. No evidence of recurrence was found at the follow up examination 4 months after surgery. Pathological findings: the specimen was 0.5: 0.4: 0.4 cm and solid in consistency but could be sectioned without decalcification. Microscopic examination showed the lesion to be covered by stratified squamous epithelium; under the epithelium there was mature hyaline cartilage without ossification, surrounded by fibrous connective tissue. Chondromatous choristomas are rare and interesting entities, which should be kept in mind when evaluating lingual lesions.

EXPRESSION OF HYPOXIA-INDUCIBLE FACTOR 1-ALPHA (HIF-1ALPHA) AND VASCULAR ENDOTHELIAL GROWTH FACTOR (VEGF) IN NEPHROBLASTOMA

A. Pajić[1], P. Radulović[2], A. Čizmić[1], M. Župančić[1], M. Bastić[1], B. Krušlin[2]

[1]Children's Hospital Zagreb;
[2]Ljudevit Jurak University Department of Pathology, Sestre milosrdnice University Hospital, Zagreb, Croatia

Angiogenesis has an important role in the progression of solid tumors and is crucial for tumors larger than 1 to 2 mm. Hypoxia-inducible factor 1-alpha (HIF-1alpha) is an important transcriptional factor for regulating expression of the angiogenic cytokine, vascular endothelial growth factor (VEGF). The aim was to assess the expression of HIF and VEGF in nephroblastoma specimens and to correlate these results with the clinicopathologic tumor characteristics. We used Wilms' tumor specimens from patients that underwent nephrectomy at Children's Hospital Zagreb during the 1998-2005 period. There were 40 patients, i.e. 26 (65%) male and 14 (35%) female, aged 1-9 (mean 3.7) years. Tumor size ranged from 2 to 10 (mean 5.3) cm. There were 11 (27%) epithelial, 20 (50%) blastemal and 9 (23%) stromal histologic subtype tumors. Anaplasia was present in 20% of cases. Immunohistochemical analysis was performed using polyclonal rabbit HIF-1alpha and monoclonal mouse VEGF antibodies. Specimens were scored semiquantitatively, determining the percent of immunoreactive cells in 10 high power fields, where 0 denoted no reaction, 1 less than 33% of positive cells, 2 >33-66% of positive cells, and 3 more than 66% of positive cells. Immunohistochemical analysis indicated HIF and VEGF to be expressed in most of the specimens (VEGF 95% and HIF 92.5%). Coexpression was found in 92.5% of cases. Correlation of HIF expression with anaplasia was statistically significant (χ^2-test $p=0.02986$), while the expression of VEGF was significantly related to the size of tumor (Kruskal-Wallis ANOVA test $p=0.0027$). In conclusion, HIF-1alpha and its regulatory end product, the angiogenic cytokine VEGF, are simultaneously expressed in Wilms' tumor, where angiogenesis has an important role in tumor progression. Strategies targeting growth factors responsible for neovascularization in tumor tissue may prove efficacious in therapy of Wilms' tumor.

CYTOLOGIC FEATURES OF MEDULLOBLASTOMA IN CEREBROSPINAL FLUID: REPORT OF TWO CASES

E. García-Ureta, O. Robles Veiga, R. Álvarez Rodríguez, J. Pombo Otero, P. Vázquez Bartolomé

Citologia Servicio De Anatomía Patológica Hospital Universitario Juan Canalejo, La Coruña, Spain

Although medulloblastoma is the most common malignant tumor of the brain in children, to the authors' knowledge there are limited data on the respective cytologic findings. We report on two cases where cerebrospinal fluid (CSF) studies indicated the presence of malignant cells. CSF was obtained by lumbar puncture and examined by cytology for cellularity, percentual differential recount and presence of malignant cells. Cytologic extensions were prepared by cytocentrifugation and stained using the PAP and MGG techniques. In both cases, cytologic examination of CSF revealed abnormal cells. The cells were arranged either individually or in small groups. The cells showed round to oval nuclei, coarse chromatic clumping and scant cytoplasm. The diagnosis of malignancy is quite easy. However, cytologic characterization of these tumors is difficult because of the lack of specific cytologic criteria. Morphologically, the tumor cells are indistinguishable from other anaplastic small-cell tumors.

FINE NEEDLE ASPIRATION CYTOLOGY (FNAC) IN THREE CASES OF PLEOMORPHIC ADENOMA IN CHILDREN

E. García-Ureta, O. Robles Veiga, R. Álvarez Rodríguez, J. Pombo Otero, P. Vázquez Bartolomé

Citologia Servicio De Anatomia Patologica Hospital Universitario Juan Canalejo, La Coruńa, Spain

Pleomorphic adenoma is the most common salivary gland neoplasm in children. However, only a few cases of pleomorphic adenoma with cytologic diagnosis have been reported in literature. Here we present cytologic features of three patients. We assessed the cytologic aspect in 3 male patients aged 5, 6 and 7 years. The puncture technique and handling of the aspirated material were performed under normal conditions. Smears were stained using both Papanicolaou and MGG methods. The level of cellularity ranged from moderate to abundant in all three cases. The combined presence of epithelial and mesenchymal elements was recorded in all patients. Epithelial cells were relatively small, uniform in size, had round or oval eccentric nuclei, a bland, granular chromatin, and moderate amounts of densely stained cytoplasm. One of them showed abundant cells with a plasma-like appearance. Red-stained intercellular material (MGG) was seen in all three cases. With these findings, the cytologic diagnosis of pleomorphic adenoma was made and verified by histologic studies. The main differential diagnosis is adenoid cystic carcinoma. Fine needle aspiration cytology is a valuable method to reach an accurate diagnosis in children with clinical presentation of a suspect mass in the parotid gland.

EXPRESSION OF C-MYC AND CD31 IN MEDULLOBLASTOMA

T. Džombeta[1], N. Cigrovski[1], A. Demirović[2], G. Stanić[3]

[1]School of Medicine, University of Zagreb;
[2]Sestre milosrdnice University Hospital;
[3]Sveti Duh General Hospital, Zagreb, Croatia

Medulloblastoma is a highly malignant brain tumor of neuroectodermal origin. Changes in cell physiology that determine malignant phenotype are, among others, self-sufficiency in growth signals and angiogenesis. C-myc is a protooncogene and CD 31 is an adhesion molecule highly expressed on endothelial cells. The increased expression of c-myc is related to neoplastic transformation and angiogenesis. We retrospectively reviewed 11 cases of medulloblastoma in children, in which we analyzed the expression of CD31 and c-myc. Formalin-fixed, paraffin embedded tumor tissue was immunostained. Immunohistochemical analysis was performed following microwave streptavidin immunoperoxidase (MSIP) protocol on a DAKO TechMate™ Horizon automated immunostainer (DAKO). The intensity of staining for c-myc was graded semiquantitatively in 1 high-power field (HPF) and denoted as (-) for no immunostaining, (+) for weak staining, (++) for moderate staining and (+++) for intense staining. CD 31 was assessed as microvascular density (MVD) *per* 1 HPF and results were expressed semiquantitatively as 1 for up to 20 blood vessels *per* HPF, 2 for >20 to 40 blood vessels *per* HPF and 3 for more than 40 blood vessels *per* HPF. Most (n=6) medulloblastomas showed weak (+) c-myc expression. MVD was 1 in 5 cases, 2 in 4 cases and 3 in 2 cases. In conclusion, the expression of c-myc and CD 31 may have an important role in assessing the biological behavior of the tumor and therefore could be used as molecular markers of disease evolution and progression. However, further investigation in a larger number of cases is obviously needed.

LIPOFIBROMATOSIS IN A TEN-YEAR-OLD GIRL

Z. Marušić[1], C. Lež[2], B. Krušlin[1], D. Tomas[1]

[1]Ljudevit Jurak University Department of Pathology, Sestre milosrdnice University Hospital, Zagreb;
[2]Department of Pathology, Zabok General Hospital, Zabok, Croatia

Lipofibromatosis is a rare pediatric fibrofatty tumor proposed as a distinct entity in 2000, previously designated as infantile fibromatosis or fibrous hamartoma of infancy. It has been reported exclusively in children, mostly males (male to female ratio 2:1), from infancy to the early second decade of life, with a predilection for extremities. Some of the cases were congenital. We report a case of plantar lipofibromatosis in a 10-year-old girl who had experienced plantar pain for several months prior to excision. She had not previously had any similar symptoms or surgical procedures for soft tissue tumor. The tumor was yellowish-white in color, measuring up to 2.5 cm. It was ill defined and fixed, located above the plantar fascia but did not extend into the fascia. Microscopically, the tumor was composed of alternating streaks of mature adipose tissue and a fibrous spindle cell com-

ponent mainly involving the septa of adipose tissue. Mitotic activity and nuclear atypia were absent. Spindle cells were focally reactive to smooth muscle actin (SMA), CD34 and S 100 protein, and non reactive to bcl-2 and epithelial membrane antigen (EMA). Due to the diffuse pattern of growth, it could not be definitely concluded whether or not the tumor had been completely excised. Since lipofibromatosis has a high rate of non-destructive local recurrence, further check-ups were recommended. Lipofibromatosis is a rare pediatric tumor with a predilection for extremities, which should be considered in children in the first and early second decade of life. It has no metastatic potential, but there is a potential for local recurrence, which calls for occasional clinical follow up.

GLANDULAR PAPILLOMA OF THE BRONCHUS: REPORT OF A CASE AND REVIEW OF THE LITERATURE

D. Kolenc[1], Š. Križanac[1], M. Golemac[1], D. Baričević[2], N. Rakušić[2], B. Krušlin[1]

[1]Department of Pathology, School of Medicine, University of Zagreb;
[2]Jordanovac University Hospital for Lung Diseases, Zagreb, Croatia

Glandular (or columnar cell) endobronchial papilloma is a very rare neoplasm and only eight cases have been described. The WHO defines glandular papilloma as a papillary tumor lined by ciliated or non-ciliated columnar cells, with a varying number of cuboidal cells and goblet cells. We report a case of glandular papilloma on the right upper lobe bronchus in a male patient. A 74-year-old man was admitted to the hospital because of dyspnea, cough, loss of weight and dysphagia. The patient was suffering from hypertension and chronic obstructive pulmonary disease. The patient had an infiltrative lesion of the lower left pulmonary lobe, which was cytologically diagnosed as squamous cell carcinoma. Fiberoptic bronchoscopy demonstrated an irregular polypoid lesion arising from the superior segment of the right upper bronchus and biopsy was performed. The resected tissue measured up to 0.6 cm. Histologically, the tumor tissue consisted of non-inflamed thick arborizing stromal stalk with prominent thin-walled blood vessels covered by glandular epithelium. There was no evidence of atypia and mitosis. In contrast to squamous papillomas, columnar (or cuboidal) papillomas are very uncommon, with eight cases reported in the English literature to date. Published reports suggest that columnar papillomas occur most commonly in middle age (mean age, 58 years; range, 26 to 74 years), with a male predominance (6:2), and are mainly located in the right side (also 6:2), especially in the right lower lobe.

REINKE'S CRYSTALS IN TESTICULAR BIOPSIES OF INFERTILE MEN

D. Ježek[1], V. Kozina[1], L. Kubinova[2], B. Drakulić[1], K. Šemanjski[1], Lj. Banek[1], G. Jurić-Lekić[1], N. Knežević[3]

[1]Department of Histology and Embryology, School of Medicine, University of Zagreb, Zagreb, Croatia; [2]Department of Biomathematics, Institute of Physiology, Academy of Sciences, Prague, Czech Republic; [3]University Department of Urology, Zagreb University Hospital Center, Zagreb, Croatia

Reinke's crystals are a unique feature of human Leydig cells. They could be occasionally found within the cytoplasm and nucleus of these cells. The crystals are composed of 10-nm thick filaments that are believed to be of protein structure. Our aim was to determine the number of crystals in control, azoospermic and cryptorchid testes. In addition, we tried to visualize the crystal 3-D structure. Testicular biopsies were obtained by an "open biopsy" method. Tissue was fixed in Gendre, dehydrated and embedded in paraffin. Serial sections were stained by H&E and a modified Masson's method. So far, the numerical density of crystals was measured in 10 biopsies from azoospermic patients (without history of cryptorchidism), 10 testicular samples from patients with cryptorchidism and 3 control specimens. For 3-D reconstruction of Reinke's crystal, confocal microscopy and the Ellipse 3D software (ViDiTo, Slovakia) were used. Preliminary results indicate an increase in the number of crystals in cryptorchid testes and a slight decrease in azoospermic patients when compared to controls. Preliminary 3-D analysis of the crystal confirmed its biocrystalline nature. Further morphometric investigation of the crystal is in progress.

ECTOMESENCHYMAL CHONDROMYXOID TUMOR OF THE TONGUE: A CASE REPORT

M. Perić-Balja[1], P. Radulović[2], Z. Marušić[2], N. Pegan[3], H. Čupić[2]

[1]Department of Pathology, University Hospital for Tumors; [2]Ljudevit Jurak University Department of Pathology; [3]University Department of ENT, Sestre milosrdnice University Hospital, Zagreb, Croatia

Ectomesenchymal chondromyxoid tumor of the tongue was first described as an entity in 1995. To date, only 27 cases have been reported in the literature. Clinically, this benign neoplasm presents as a solid, painless, slowly growing mass that typically involves the anterior dorsal tongue. We report an additional case. We present a case of a 53-year-old female patient with a solid, slowly growing, painless mass on the anterior dorsal tongue that had appeared 2 months before. A segment of the tongue with a mildly elevated tumor of yellowish solid cut surface, measuring 0.8 cm in diameter, was excised and referred for histopathologic analysis. Microscopically, the tumor was well-circumscribed, nonencapsulated, composed of lobules containing ovoid and round to polygonal cells, with small nuclei and mildly basophilic cytoplasm, set in a chondromyxoid background. The tumor cells were immunoreactive to GFAP, focally reactive to SMA and S-100 protein, and non-reactive to EMA, cytokeratin and CD 34. Ectomesenchymal chondromyxoid tumor of the tongue is a tumor that fails to meet the established clinicopathologic criteria for any existing myxoid neoplasm of the tongue, including nerve sheath myxoma, myoepithelioma, ossifying fibromyxoid tumor of soft parts, extraskeletal myxoid chondrosarcoma, chondroid choriostomas or heterotopias. There are no clinical features that may distinguish it from the above mentioned neoplasms. Therefore, the diagnosis can be only established by means of histology and immunohistochemistry.

CYCLOSPORINE INDUCED BIOCHEMICAL REMISSION IN CHILDHOOD AUTOIMMUNE HEPATITIS

O. Žaja-Franulović, M. Požgaj-Šepec, Z. Jurčić

University Department of Pediatrics, Sestre milosrdnice University Hospital, Zagreb, Croatia

Autoimmune hepatitis (AIH) is a rare inflammatory disease of the liver that may progress to cirrhosis. Currently used immunosuppressive therapy with prednisone and azathioprine fails to induce remission in a significant percentage of patients. We report our experience in AIH pediatric patients treated with cyclosporine (Cys; Neoral) as first-line immunosuppression. During the 1999-2007 period, eight children with AIH, diagnosed according to the established international criteria were recruited. Two were withdrawn from the study because Cys therapy had just been initiated for several months. According to the suggested protocol, Cys was administered orally in 2 divided doses (3-5 mg/kg/d), adjusted to maintain therapeutic serum Cys levels of 200-300 ng/mL. After 3 months, when transaminase activity tended to normalize, oral dose of Cys was adjusted to achieve serum concentration of 100-200 ng/mL. Conversion to low dose of prednisone (0.3-0.5 mg/kg/d) and azathioprine (1-2 mg/kg/d) was started after 6 months, with gradual tapering of Cys dose, and discontinued over a period of 2 weeks. Six patients, age range 4.0-17.7 years (10.56 ± 5.51), initially had elevated transaminases and gamma globulin, with proven inflammatory/necrotic process in 5/6 patients that underwent liver biopsy. Serum ANA/SMA autoantibodies were positive in all but one patient with positive LKM1 serologic marker. In all patients, complete or near normalization of transaminase activity in serum occurred within the first 3-6 months of therapy and there was no relapse after Cys withdrawal. During the follow up, biochemical relapse occurred in one patient after discontinuation of minimal prophylactic corticosteroid doses. Immune mediated extrahepatic disease was present or developed in two patients, i.e. ulcerative colitis and hemolytic anemia in one each. Side effects of Cys were minimal and well tolerated. Data on the use of Cys in children with type 1 and 2 AIH are limited. Our results indicate that Cys given as first-line therapy is able to induce complete biochemical remission in children with AIH.

HID-AB MUCIN HISTOCHEMICAL ANALYSIS IN GOBLET AND NON-GOBLET BARRETT ESOPHAGITIS

I. Pavić, D. Ivanović, A. Demirović, P. Radulović, D. Baličević

Ljudevit Jurak University Department of Pathology, Sestre milosrdnice University Hospital, Zagreb, Croatia

The syndrome of peptic ulceration of the esophagus arising in the gastric type epithelium associated with

an esophageal stricture described by Barrett in 1950 was considered, incorrectly, to be due to congenitally short esophagus. Since then, the syndrome has been called Barrett's esophagus; however, replacement of squamous epithelium by columnar epithelium, resembling gastric or intestinal mucosa, has been described later, mostly due to reflux esophagitis. Recently published studies that used various mucin histochemical stains in observed specimens to identify neutral mucins and acid mucins (sialomucins and sulfomucins) indicate that the intestinal type does not necessarily resemble normal small intestine. It is presumed that the diagnosis of Barrett's esophagus is not forced only by histologic findings of goblet cells but also of acid mucin-positive non-goblet columnar cells (NGCC) in the surface epithelium of biopsy specimens. However, the significance of the acid mucin-positive NGCC finding in the surface epithelium from the distal esophagus/gastroesophageal junction (GEJ) in the absence of goblet cells (GC) remains unknown. The aim of the study was to assess the prevalence of sulfomucins in endoscopic biopsies of patients with a columnar lined (Barrett's) esophagus. We compared histopathologic features of biopsy specimens in the surface, foveolar and glandular epithelium taken from the distal esophagus/GEJ diagnosed as Barrett's esophagus in the presence of special columnar epithelium with and without goblet cells. We randomly selected biopsy specimens of 33 patients from our database from the 2000-2008 period. The specimens were stained with alcian blue/periodic acid-Schiff stain (AB-PAS) and high-iron diamine/alcian blue (HID-AB) dividing results into two groups: Barrett's esophagitis with and without GC. Out of 33 stained specimens, 21 were of special columnar intestinal metaplastic (IM) type (type I = 0, type II = 10, type III = 11) with 9:12 male/female ratio, and 12 were NGCC (type I = 0, type II = 7, type III = 5) with 8:4 male/female ratio. In the GC and NGCC group, acid-mucin (sulfomucin)-positive cells were detected in 11 (52%) and 5 (42%) cases, respectively. In the lack of classic special columnar epithelium (with goblet cells) in the esophagus, the presence of metaplastic junctional type of mucosa may quite probably be considered as an initial step towards transformation to the classic Barrett's mucosa, most of all because of the definition of Barrett as a precancerous condition for esophageal adenocarcinoma. As Barrett's esophagus is a precancerous lesion, additional research is needed to evaluate whether the neoplastic progression is related to its mucin profile or the detection of acid-mucin (sulfomucin)-positive non-goblet cells is an early form of intestinal metaplasia, thus deserving attention and follow up.

COMPOSITE GLANDULAR-ENDOCRINE CELL CARCINOMA OF THE STOMACH

L. Stemberger[1], J. Slipac[1], A. Demirović[2], I. Pavić[2], D. Baličević[2]

[1]School of Medicine, University of Zagreb;
[2]Ljudevit Jurak University Department of Pathology, Sestre milosrdnice University Hospital, Zagreb, Croatia

Composite glandular-endocrine cell carcinoma, also called adenocarcinoid, is recognized as a special type of gastric tumor composed of ordinary adenocarcinoma and neuroendocrine tumor. The existence of composite tumors poses nosologic, histogenic and diagnostic problems. Adenocarcinomas containing endocrine cells appear to be as biologically aggressive as the usual adenocarcinomas of the stomach. This type of tumor in the stomach is a very rare finding and, to our knowledge, there are only few reports in the literature, without specific numbers to describe its incidence. We report on a rare case of gastric collision tumor composed of adenocarcinoma and carcinoid. A 63-year-old-man complained of inappetence and weight loss within the previous 2 weeks, with nausea after meal and occasional vomiting. He had epigastralgia on pressure and while coughing. Physical examination showed icterus and 5 cm palpable liver. Laboratory findings revealed anemia, elevated liver enzymes and tumor markers (CEA, Ca 19-9, AFP, CA 15-3, CGA). Ultrasound of the abdomen showed multiple focal hyperechogenic areas of the liver, which seemed to be metastatic lesions. Gastroscopy demonstrated a large invasive ulcerative lesion of the gastric body and biopsy was performed. Histologic analysis revealed a tumor composed of atypical pseudoglandular areas lined with cytokeratin positive tumor cells. Partially within the stroma, aggregates of unimorphic cells with fine granulated chromatin, some of them forming acinar structures, were found. These structures expressed strong chromogranin and mild synaptophysin positivity. Small biopsy specimen in conclusion was interpreted as an aggressive adenocarcinoma partially formed of clusters of cells with prominent neuroendocrine component. The patient's serious health condition prevented any surgical treatment. Therefore, only small gastric biopsy specimen was analyzed. At this point, the importance of ad-

equate gastroendoscopic biopsy and accurate analysis of the biopsy specimen considering its limited size should be emphasized.

BILATERAL WILMS' TUMOR IN A NEWBORN WITH TRISOMY 18

M. Kos, T. Leniček, M. Ulamec

Ljudevit Jurak University Department of Pathology, Sestre milosrdnice University Hospital, Zagreb Croatia

Wilms' tumor is the most common malignant renal tumor in children. It is bilateral in 4%-13% of affected children. Five percent of bilateral Wilms' tumor cases have synchronous presentation and are often associated with the presence of nephrogenic rests, congenital malformations or predisposing syndromes. We present a case of bilateral Wilms' tumor found on autopsy in a newborn with trisomy 18. A 27-year-old woman (P 2, G 2) presented at 35 wks gestation because of polyhydramnios. Until admission her pregnancy was controlled elsewhere. Double test showed low risk, and previous ultrasonographic examinations were unremarkable. She was admitted to the hospital and amniodrainage was performed. Two weeks after admission, she complained of lower abdominal pain; amnioscopy was done during which the membranes ruptured. Cesarean section was performed and a male infant (2350 g, 47 cm, Apgar scores 6/10, 7/10) was delivered. The newborn succumbed to respiratory failure several hours later. On external examination, globular head with facial dysmorphia (hypertelorism, small, rounded mouth, micrognathia), clinodactyly and overlapping of fingers were evident. The findings at autopsy were unremarkable, except for both kidneys which were enlarged. Solid, pale grey, slightly nodular tumorous tissue was evident on cut section, effacing most of the cortex-medullar interface of both kidneys. Both testes were in the inguinal canal. No other abnormalities of the urinary system were found. Histopathologic examination of both kidneys revealed that most of the kidney parenchyma was replaced by tumorous tissue. It consisted of highly cellular blastematous areas of small, round-to-oval primitive cells and epithelial component characterized by the formation of tubular and glomerular structures. The cause of death was pulmonary atelectasis. The diagnosis of Edwards syndrome (trisomy 18) was made based on karyotype, done on cord blood after birth. Wilms' tumor is only exceptionally seen as a congenital neoplasm and bilateral synchronous presentation in a newborn is extremely rare. Trisomy 18 is a condition that is associated with the possible increased risk of Wilms' tumor. Although it may develop in long-term survivors with trisomy 18, to our knowledge this is the first reported case of congenital, bilateral nephroblastoma in a baby with Edwards syndrome.