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Detection of clonal T cell receptor gamma gene rearrangements in mycosis fungoïdes

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Background & objectives: The diagnosis of Mycosis Fongoides (MF), especially early MF, is challenging. It might be difficult to distinguish it from inflammatory disorders. Monoclonal rearrangement can be helpful. The aim of the study was to describe molecular aspects of MF.
Methods: We conducted a retrospective study that included all cases of MF confirmed by histopathological and immunohistochemical (IHC) examination in the Pathology Department in collaboration with the Dermatology Department at Habib Thameur Hospital of Tunisia from 2008 to 2020. Genomic DNA was extracted from lesional tissues and rearrangements of TCR-gamma chain gene were amplified using the IdentiClone polymerase chain reaction (PCR).
Results: We enrolled 56 patients. The mean age at diagnosis was 51.8 years (15 - 83 years) with a male to female ratio of 1.94. Cases were: 35 classic MF, 12 pilotrope MF, five CD8-positive MF, three granulomatous MF and one hypopigmented MF. The rearrangement of the TCR-ϒ was performed in 30 cases. It was monoclonal in 18/30 cases (60%) and polyclonal in 12 cases (40%). At an early stage, monoclonality was present in 6/13 cases (46%) and polyclonality in 7/13 cases (54%). Polyclonality was found in 11 biopsies (73%) dating back more than 5 years, with a statistically significant association between clonality and the year the sample was received (p=0.05).
Conclusion: The detection of clonal TCR rearrangement can be helpful in establishing the diagnosis of MF. In fact, the International Society for Cutaneous Lymphomas (ISCL) and the European Organization of Research and Treatment of Cancer (EORTC) support a diagnostic algorithm for early MF which includes TCR gene rearrangement analysis. However, some benign and reactive inflammatory lesions may also have clonal rearrangement. As a result, MF diagnosis should be based on confrontation of clinical, histological, immunohistochemical, and molecular data.

PS-12-014

Histopathologic features of mycosis fungoides: a morphologic study on 134 biopsy specimens from 56 patients

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Background & objectives: The diagnosis of mycosis fungoides (MF) is very challenging especially at early stage. The aim of this study was to describe histologic and immunohistochemical presentations of MF.
Methods: We retrospectively reviewed 134 biopsies from 56 patients with documented MF in patch, plaque and tumour stages.
Results: A total of 134 biopsies from 56 patients were reviewed. The 43 cases of early MF showed epidermotropism in 42 biopsies (98%), pilotropism in 37/38 (97%) and syringotropism in 25/39 (64%). Lymphocytic dermal infiltrate was superficial and perivascular in 22/43 biopsies (51%). Necrotic keratinocytes were noted in 3/43 biopsies (9%). Band-like lymphocytic infiltrate of superficial dermis was seen in 30 biopsies (56.6%) at plaque stage and was extended to the entire dermis in 36 biopsies (26.9%) at tumour stage. Fibrosis of papillary dermis was observed in 90 biopsies (67.2%). At immunohistochemistry, 129 biopsies (96.3%) demonstrated CD3+, CD4+ and CD8- phenotype and lack of CD7 expression was observed in 17/22 biopsies.
Conclusion: The histologic diagnosis of MF especially at early stage is one of the most vexing problems in dermatopathology, because the histopathologic features may simulate a variety of inflammatory skin disorders. Immunohistochemistry can help in diagnosis in some cases. Hower, clinicopathological correlation remains the "gold standard" for making an accurate diagnosis.

PS-12-015

Immunohistochemical staining for p16 is a useful adjunctive test in the diagnosis of Bowen's disease

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Background & objectives: Bowen's disease (BD) and actinic keratosis (AK) are squamoproliferative disorders of the skin. Histologically, they may mimic each other and they might be misinterpreted. p16 has been suggested to be a useful tool to make the differential diagnosis between them.
Methods: We gathered 13 cases of BD and 9 cases of AK. The cases were stained for p16 using standard immunohistochemical techniques, and the staining patterns were categorised into one of five different patterns of the classification proposed by Harvey.
Results: Mean age patients with BD and AK were 69 and 68 years respectively. All cases of BD and AK were positive to p16 with both nuclear and cytoplasmic staining. Intensity and extension of staining were different between BD and AK. For BD cases, the anti-p16 staining was pattern 1 for 12 cases (92%) and one case pattern 5. Concerning AK cases, staining was pattern 2 in 5 cases, pattern 3 in one case and pattern 5 in one case. Immunohistochemistry was not contributive in one case.
Conclusion: We have confirmed the previously published findings that immunohistochemistry for p16 in BD shows a consistent pattern of strong staining of all abnormal cells, presenting at least focal palisaded basal cell sparing. This pattern is not seen in AK. Where the staining is typically patches or scattered single cells of weak or moderate intensity.
We believe that p16 can serve as a useful adjunctive test in supporting a diagnosis of BD in difficult cases and in separating it from AK.

PS-12-016

Eccrine porocarcinoma: a clinicopathological study of 8 cases

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Background & objectives: Eccrine porocarcinoma (EPC) is a rare malignant eccrine sweat gland tumour characterized by locally aggressive growth and high rates of extracutaneous metastasis. The aim of this study is to describe clinical and histopathological features of EPC.
Methods: A retrospective review of medical records and histopathology slides of EPC cases between January 2000 and December 2022 was conducted using the cancer registry database of the centre of Tunisia.
Results: Eight EPC cases were included in this study. The mean age of diagnosis was 53.50 years (range 46-70 years) with seven females and one male. Systemic comorbidities were present in one patient. Clinically, EPC was described as ulcerated nodular lesion mimicking a squamous cell carcinoma in half of the cases. The most common localization was the scalp reported in 3 cases. Histopathological analysis revealed a tumour arising from the epidermis

thyroid carcinoma. The main survival time for 3 patients varied from 1to 8 months. The other patients were lost.
Conclusion: Mature teratoma with malignant transformation are rare aggressive tumours that mostly occurs in post-menopausal age. It is characterized by a late stage diagnosis and poor outcome. Treatment is based on surgery and radio-chemotherapy. Immunotherapy and target therapy has been recently introduced to reduce mortality. The overall goals of management are palliation of symptoms, preventing recurrence or spread of disease and preservation of fertility.

E-PS-09-003
Expression of autophagy markers in ovarian cancer
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Background & objectives: Autophagy is a crucial cellular mechanism that coordinates various physiological processes. Many cancers can activate autophagy and make the tumour more aggressive. In this study, we analysed autophagy in ovarian cancers.
Methods: We included 122 patients with ovarian cancers. Tissue microarray was made for immunohistochemical analysis of p62, LC3, and Beclin1 expressions. Their expressions were correlated with tumour histology type, differentiation, and stage. The percentage of positive tumour cells was estimated from the total number of tumour cells. Samples with positive cells were stratified into three ranges of positivity: <10%; 10–50%; >50%.
Results: There was a strong positive correlation between p62 and LC3 expression, while both markers were in negative correlation with Beclin1. The expression of each analysed marker showed a statistically significant association with tumour histological type, stage, and differentiation ($p<0.001$). While p62 and LC3 were more prominently expressed in patients with high-grade serous ovarian cancer (HGSOC), Beclin 1 expression was lower in HGSOC and more prominent in other histology types. A higher expression of p62 and LC3 was observed in later tumour stages, while the opposite was observed for Beclin1 expression. Tumour differentiation positively correlated with p62 and LC3 expression, and negatively with Beclin1 expression.
Conclusion: The expression of p62 and LC3 was more prominent in HGSOC in comparison to other histology types, while Beclin1 expression was more prominent in carcinomas other than in HGSOC. While p62 and LC3 expression was associated with higher tumour stages and tumour grades, the opposite was found for Beclin1. Prominent p62 and LC3 expression in combination with weak Beclin1 expression in HGSOC indicate the potential for application of autophagy inhibitors in patients with this tumour subtype.

E-PS-09-004
Expanding the spectrum of GLI1-activated mesenchymal tumours – a high-grade uterine sarcoma harbouring a novel PAMR1-GLI1 fusion
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Background & objectives: GLI1-activated mesenchymal tumours comprise a group of seemingly unrelated entities, including pericytoma with t(7;12) translocation, plexiform fibromyxoma, gastroblastoma, malignant epithelioid neoplasm with GLI1 rearrangements and GLI1-amplified mesenchymal neoplasms. Herein we report an unusual GLI1-rearranged uterine sarcoma.
Methods: Clinical history:
A 57-year-old female presented with an abdomino-pelvic mass. MRI showed a myometrial mass extending beyond the serosa, with features of peritoneal involvement. The patient underwent oncologic resection. Gross examination revealed a perforated multi-nodular uterine tumour (21cm) with a firm white and soft fleshy cut surface, featuring haemorrhage and necrosis. An omental deposit (9cm) also displayed similar appearance.
Results: Histopathology:
The tumour was morphologically heterogenous, disclosing frankly sarcomatous areas composed of pleomorphic spindle and focally epithelioid cells, intermingled with a component of monomorphic spindle cells arranged in fascicles. There was a rich vascular network and zones of necrosis with peripheral amianthoid-like collagen plaques. Lymphovascular invasion and metastasis to lymph nodes and omentum were identified. The tumour was immunopositive for CD10 and cyclinD1, and negative for MNF116, ER, p16, CD117, DOG1, S100, smooth muscle and melanotic markers. ArcherTM Fusion Sarcoma Assay detected PAMR1(exon1)-GLI1(exon4) fusion, confirmed on RT-PCR and Sanger sequencing. The patient received adjuvant chemoradiotherapy however developed metastatic recurrence and demised 18 months post-surgery.
Conclusion: To the best of our knowledge, this forms the third report of GLI1-rearranged uterine sarcoma. Previous reports showed low-grade epithelioid morphology and harboured canonical fusions (ACTB-GLI1, PTCH1-GLI1). In contrast, this case shows high grade, predominantly spindled morphology and harbours a novel fusion, PAMR1-GLI1. The precise classification of these tumours, and their relation to other uterine sarcomas with high GLI1 expression, including a subset of HG-ESS and LMS, remain uncertain. Emerging GLI/Hedgehog inhibitors provide clinical relevance to recognising these tumours.

E-PS-09-005
Cervical carcinosarcoma: a rare case report
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Background & objectives: Uterine carcinosarcoma is an aggressive biphasic malignant neoplasm, composed of epithelial and mesenchymal elements. Cervical carcinosarcoma (CCS) is exceptionally rare with less than 70 cases described in the English literature.
Methods: We present a case of a 63-year-old woman with a sudden episode of high volume serous vaginal discharge. On physical examination there was a 5 cm exophytic flat friable mass in the cervix. A pelvic magnetic resonance imaging (MRI) showed an expansive lesion with 70x50x56mm in the endocervical canal that did not invade the uterine body.
Results: The biopsy revealed a malignant neoplasm with a predominant sarcomatous component without a specific morphological differentiation, and less than 5% of squamous cell carcinoma. Immunohistochemistry revealed positivity for cytokeratins (AE1-AE3; 34BE12; CK 8/18) and EMA in the squamous component; CK8/18 was heterogeneously positive in the sarcomatous component and p16 was diffusely positive in both components. Accordingly, the proposed diagnosis was cervical carcinosarcoma with homologous mesenchymal component. The patient was submitted to radical surgery and the final post-operative staging was FIGO (2018): IB3. Due to surgical complications adjuvant treatment was not performed.