# VIRCHOWS ARCHIV

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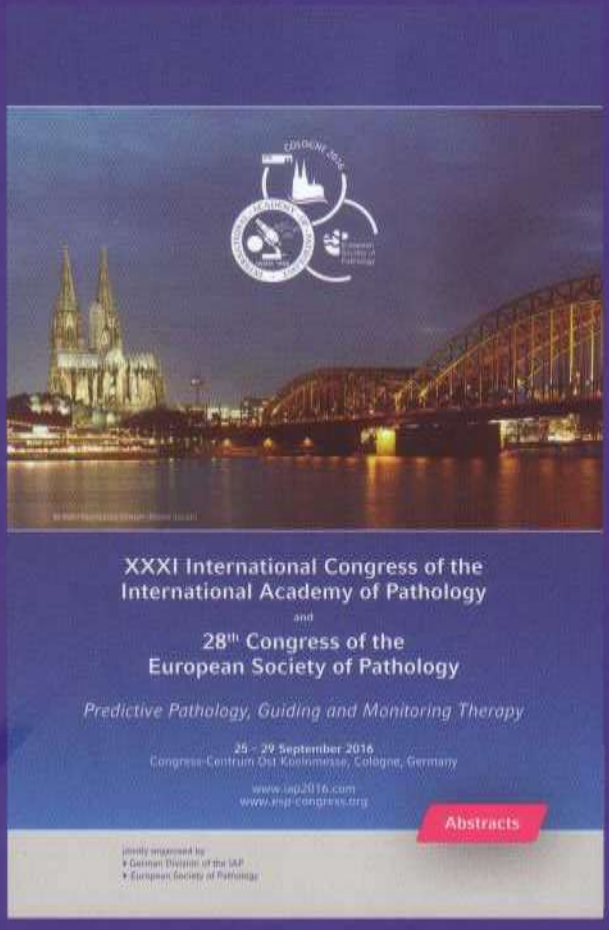


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Time only to assess mitotic count and Ki-67 index took 18.0 to 27.3 min. From the data of collected 760 colorectal NETs, risk of lymph node metastasis in rectal NET was confirmed even in lesions smaller than 10 mm, and vascular invasion was important predictive factor. **Conclusion:** Our basic data will contribute to establish optimal pathological diagnosis and therapeutic system in the future.

**PS-03-015**

**Differences in the pathological features of papillary thyroid microcarcinomas of <5 mm versus >5 mm: A retrospective analysis of 254 cases**

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**Objective:** The prognostic significance of the tumour size in patients with papillary thyroid microcarcinomas (PTMC) remains unclear. The purpose of this study was to compare the pathological features of PTMCs of <5 versus >5 mm in our institution, over a 26 year period.
**Method:** We performed a retrospective study on 254 PTMCs (123 cases of <5 mm and 131 cases >5 mm) registered in the Department of Pathology, Tlrgu-Mure? Emergency County Hospital between 1990 and 2015. Pathological data were retrieved from database registers and pathological reports.
**Results:** The multifocality ($p = 0.040$), the extrathyroidal extension ($p = 0.0001$), the positive resection margin ($p = 0.046$) and the presence of associated thyroiditis ($p = 0.002$) were all found to be significantly more prevalent among PTMCs of >5 mm, compared to PTMCs of <5 mm. Other parameters, like tumour histological type or lymph node involvement did not differ significantly among the study groups ($p = 0.458$ and $p = 0.949$, respectively).
**Conclusion:** Our study revealed important differences in the pathological features of PTMCs of >5 mm, compared to PTMCs of <5 mm. Such results might suggest that PTMCs of <5 mm should be managed in a different way than other PTMCs. Further studies, on larger number of cases, with long follow-up data are however needed to confirm this.

**PS-03-016**

**Detection of BRAFV600E point mutation on archived thyroid FNA smears: Assessment of a feasible, reliable DNA extraction technique, validated by successful application in downsteam molecular analysis**

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**Objective:** Molecular techniques have recently emerged as a potential valuable tool that could improve the diagnostic accuracy of thyroid FNA biopsy. The aim of our study was to investigate the feasibility of BRAFV600E point mutation detection using archived thyroid FNA smears (AT-FNAs).
**Method:** Eleven AT-FNAs, corresponding to the Bethesda diagnostic categories II (n = 4), III (n = 2), IV (n = 3) and VI (n = 2) were included in our study (one smear/case). The DNA extraction protocol was based on a precipitation method (MasterPureTM DNA purification kit, Epicentre), according to the manufacturer instructions and optimized in our laboratory. All cases were subject to RT-PCR amplification and high resolution melting analysis for a housekeeping gene (GAPDH) and for BRAF gene, respectively.
**Results:** We successfully isolated good quantity and purity DNA from all our cases (mean concentration 62.47±37.55 ng/p.1; mean purity: 1.47 ± 0.13). Moreover, the BRAFV600E point mutation could be specifically amplified in all these cases (2 positive, 9 negative), whereas the GAPDH target was amplifiable in all cases, except for two (DNA concentration 15.3 and 13 ng/p.1, respectively).
**Conclusion:** Detection of BRAFV600E point mutation from AT-FNAs is feasible. Our DNA extraction technique offered a good range of DNA quality, concentration and purity, allowing reliable applications for further molecular analysis.

**PS-03-017**

**Biomarkers and microRNA expression on gastroenteropancreatic neuroendocrine tumours**

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**Objective:** To establish the relationship between ATRX, HES1, mTOR, NOTCH1, PDGFR-|3, VEGFR2 and MGMT expression with predictive significance on gastroenteropancreatic neuroendocrine tumours (GEP-NETs) and its correlation with microRNA expression (miR-19a, miR- 96, miR-145, miR-182, miR-200a).
**Method:** A retrospective evaluation of the total samples diagnosed as GEP- NETs (period 2003-2016) was conducted, clinical and pathological characteristics were evaluated in all cases. Biomarkers expression was assessed trough immunohistochemistry using tissue microarrays. Simultaneously, microRNAs that were possibly regulating biomarkers expression in small intestine and colon were identified applying a bioinformatic approach. For the 5 microRNAs identified we measured the expression by qRT-PCR.
**Results:** 143 cases of GEP-NET average age 55(11-83 years-old). Mainly from ileum/jejunum (23,8 %), appendix (19.6 %), colon/cecum/ rectum (16,8 %), pancreas (15,4 %) and stomach (14 %) were included. Expression was positive in Hesl (95.8 %), Notch 1 (91.6 %), ATRX (89.5 %), VEGFR2 (74.8 %), PDGFR-(3 (62.9 %), mTOR (39.9 %), and MGMT (23.8 %). We also found 4 microRNAs upregulated (miR- 96, miR-145, miR-182 and miR-200a) and one downregulated (miR-19a) in tumour compare with normal tissue. The high expression of ATRX was correlated with the loss of miR-19a expression and the downregulation of MTOR and VEGFR2 with the upregulation of miR-96 and miR-200a respectively.
**Conclusion:** Our results must conduct to new studies focused on strict follow up of specific alternative therapies and biomarkers expression to evaluate a possible improve in survival rates of this patients. Finally, epigenetic factors such as microRNA expression regulated key cell signaling pathways involve in GEP-NETs.

**PS-03-018**

**Osteopontin overexpression in papillary thyroid carcinoma with mineralization**

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**Objective:** Pathological mineralization (ectopic calcification) is an often finding in papillary thyroid carcinoma (PTC). The concept of pathological mineralization in papillary thyroid carcinoma included psammoma's bodies, bone formation, stromal and vascular calcification. Osteopontin (OPN) is a glyco-phosphoprotein that is expressed and secreted by numerous human cancers. Osteopontin is upregulated at sites of pathologic, ectopic calcification—presumably at least in part to inhibit debilitating mineralization in these soft tissues. We investigated the expression of OPN and her correlation with pathological mineralization in PTC.
**Method:** OPN expression was investigated by immunohistochemistry in tumours and adjacent thyroid tissue of 11 PTCs with mineralization and 10 PTCs without pathological mineralization.
**Results:** OPN expression was increased in PTC with pathological mineralization when compared to those without ectopic calcification ($p < 0.045$, Mann-Whitney U test).
**Conclusion:** OPN overexpression may be regarded as a protective tissue response to the development of ectopic calcification.