

distributed throughout acini. Interestingly, hE2 immunoreactivity is also associated with small particles found in the acinar lumen, which is in agreement with the presence of small membrane particles containing Prominin-1 in seminal plasma. The analysis of several prostate cancer samples revealed a down-regulation of the hE2 immunoreactivity in the tumor region, independent of their Gleason score (5–10). In those tissues however we found that the hE2 immunoreactivity is up-regulated in luminal cells in the vicinity of the tumor, especially in the areas of inflammation or intensive proliferation of basal cells.

**Conclusions:** These data showed that the overall expression of Prominin-1 in prostate is not limited to the basal stem cells as assumed from a previous study with mAb AC133, but only the Prominin-1 molecule carrying the AC133 epitope appears to label these stem cells. With regard to the prostate diseases, our pilot screen shows that Prominin-1, as detected by hE2 immunoreactivity, is down- and up-regulated in the tumor and inflammatory regions, respectively. Further studies are needed to determine the potential application of Prominin-1-containing particles as a novel biomarker for human prostate cancer.

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POSTER

#### Value of the innovated agarose cell block technique in improving the diagnostic sensitivity of urine cytology in cancer bladder cases

S. Mansy<sup>1</sup>, S. AbdelRazik<sup>2</sup>, H. Yehia<sup>1</sup>, L. Ghanem<sup>1</sup>, T. Amin<sup>3</sup>, M. Moustafa<sup>1</sup>. <sup>1</sup>Theodor Bilharz Research Institute, Electron Microscopy Department, Cairo, Egypt; <sup>2</sup>Kasr ElAini Hospital, Cairo University, Pathology Department, Cairo, Egypt; <sup>3</sup>Theodor Bilharz Research Institute, Urology Department, Cairo, Egypt

**Background:** Proper handling and processing of urine sample have great impact on improving diagnostic sensitivity. Agarose cell block (ACB) technique is an innovated technique by Mansy (2004) based on the use of melted agarose gel as an embedding media, for the processing of the sediment of urine sample in block manner.

**Objective:** The aim of this work is to investigate the validity of ACB technique in processing urine samples simultaneously for light and electron microscopic (EM) examination with the prospect to enhance the quality of diagnosis.

**Material and methods:** The material of this study consisted of 45 voided urine samples collected from 30 patients (Pt) with bladder carcinoma, 14 Pt with non specific cystitis and one Pt who underwent transurethral resection of the primary tumour (TUR-T) followed by adjuvant immunotherapy with BCG. The sediment of the collected urine from each case was processed for the performance of Papanicolaou (Pap) stained smear and the preparation of ACB. The solidified agarose block was divided longitudinally into two halves. One half was processed for paraffin, hematoxylin and eosin (H&E) stained sections and the other half for EM examination.

**Results:** Significant increase in the number of sedimented urothelial cells in the ACB paraffin prepared sections versus the corresponding Pap stained smear was noticed. Moreover, the diagnostic sensitivity of urine cytology was improved with the application of ACB technique. Out of the 30 malignant cases confirmed by histopathology of bladder biopsies (two grade I Ta, one grade I T1, two grade II Ta, five grade II T1, eleven grade II T2, two grade III T2, three grade III T3a, four grade III T3b), 70% were diagnosed by Pap stained urine smear versus 90% by ACB paraffin H&E stained sections and 100% by ACB EM processed samples. Furthermore, simultaneous processing of the same sample for light and EM examination allowed proper study, facilitated the discrimination between normal, dysplastic and malignant urothelial cells, the identification of type of malignancy and the accurate diagnosis of controversial cases specially those revealing severe urothelial dysplastic changes and patient under adjuvant immunotherapy after TUR-T.

**Conclusion:** Thus, ACB technique could be considered a useful technique which helps in increasing the sensitivity of urine cytology and opens a new prospect for cytomorphological study.

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POSTER

#### Clonal origin of multifocal renal cell carcinoma as determined by microsatellite analysis

K. Thrum<sup>1</sup>, K. Junker<sup>2</sup>, J. Schubert<sup>2</sup>. <sup>1</sup>General Surgery, University Hospital, Jena, Germany; <sup>2</sup>Urology, University Hospital, Jena, Germany

**Purpose:** 3% of all carcinomas are renal cell carcinomas. The reported incidence of satellite tumor lesions in renal cell carcinoma (7% to 25%) suggests that there is a risk of local recurrence after nephron sparing surgery. It remains largely unknown whether small satellite tumors show malignant features and whether they are metastases from the primary tumor. Therefore, we determined the clonality of multifocal tumors by molecular genetic analysis.

**Materials and methods:** A total of 20 multifocal clear cell renal cell carcinomas were investigated by microsatellite analysis using 6 markers for chromosome 3p, namely D3S1560, D3S1289, D3S1766, D3S1300, D3S1566 and D3S1663. Polymerase chain reaction was performed according to standard protocols, followed by gel electrophoresis and automated analysis using an automated DNA sequencer (Li-Cor, Lincoln, Nebraska).

**Results:** All primary clear cell tumors were characterized by loss of heterozygosity on 3p. Multifocal tumors showed identical microsatellite alterations with at least 2 marker in all cases. 14 out of 20 matched completely in all 6 marker.

**Conclusions:** Identical loss of heterozygosity detected in different tumors in the same kidney strongly suggest that multifocal clear cell renal cell carcinomas have a common clonal origin in most cases. These findings indicate that satellite tumors are the result of intrarenal metastasis from the primary tumor. The clinical implications of these results need further investigation.

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POSTER

#### The value of PTEN expression in smears of prostate cancer; correlation with prognostic factors and disease outcome

A. Bantis<sup>1</sup>, P. Athanassiadou<sup>2</sup>, M. Gonidi<sup>3</sup>, P. Athanassiades<sup>2</sup>, E. Aggelonidou<sup>2</sup>, A. Liosi<sup>2</sup>, E. Patsouris<sup>2</sup>. <sup>1</sup>University Hospital, Urology Department, Alexandroupoli, Greece; <sup>2</sup>Medical School, Athens University, Pathology Laboratory Cytology Unit, Athens, Greece; <sup>3</sup>General Hospital, Cytology Department, Corfu, Greece

The PTEN (phosphatase and tensin homolog deleted on chromosome 10) tumour suppressor gene is located on chromosome 10q23, a genomic region frequently lost in human cancers. Complete inactivation of the PTEN tumour suppressor gene is extremely common in advanced cancer, including prostate cancer (CaP). The aim of this study was to examine the expression of PTEN protein in prostate carcinoma cell samples and its association with clinicopathological parameters.

**Materials and methods:** eighty imprint smears were obtained at surgery and studied immunocytochemically using anti-PTEN antibody. Cases were considered positive when granular cytoplasmic staining was seen in all tumour cells, mixed when areas of both positive and negative tumour cell clones were seen, and negative when adjacent benign prostate tissue but not tumour tissue showed positive staining. The PTEN expression pattern was correlated with histopathological findings in the same samples. The results were correlated with postoperative Gleason score, preoperative Serum Prostate Antigen (PSA) and pathological stage.

**Results:** Thirteen smears (16.2%) of prostate cancer were positive, 50 (62.5%) were mixed, and seventeen (21.3%) were negative. Positive correlation between PTEN expression with Gleason score 7 or higher was observed ( $p < 0.0001$ ). There was also significantly higher PTEN expression in smears from patients with PSA value  $\geq 10$  ( $p = 0.0003$ ) and poorly differentiated prostate carcinomas with Gleason score  $> 7$  ( $p < 0.001$ ). Relationship was also observed between PTEN expression and disease outcome.

**Conclusions:** PTEN protein is correlated with pathological parameters of poor prognosis and could be a good marker for biological behaviour of prostate carcinomas.

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POSTER

#### Expression Protein Kinase C in prostate hyperplasia and carcinomas in relationship with clinicopathological parameters

P. Athanassiadou<sup>1</sup>, A. Bantis<sup>2</sup>, M. Gonidi<sup>3</sup>, P. Athanassiades<sup>1</sup>, E. Aggelonidou<sup>1</sup>, A. Liosi<sup>1</sup>, E. Petrakakou<sup>1</sup>, E. Patsouris<sup>1</sup>. <sup>1</sup>Medical School, Athens University, Pathology Laboratory Cytology Unit, Athens, Greece; <sup>2</sup>University Hospital, Urology Department, Alexandroupoli, Greece; <sup>3</sup>General Hospital, Cytology Department, Corfu, Greece

**Objective:** Protein kinase C (PKC) comprises a family of serine/threonine kinases that plays a key role in the signal transduction pathways. It consists of at least 12 isoforms with different tissue expressions, substrate specificity, and subcellular localization that are related to specialized cell functions, including cell proliferation, differentiation, and apoptosis. Recent evidences prove that PKC isozymes play an important role in the transition from an androgen-dependent to an androgen-independent status. The aim of this study was to investigate the PKC expression (PKC alpha and PKC delta) in smears of patients with benign hyperplasia or carcinomas in order to evaluate the malignant potential role of these diseases.

**Methods:** Sixty imprint smears (30 invasive carcinomas) and (30 hyperplastic prostates) were obtained at surgery and studied immunocytochemically using anti-PKC alpha and delta antibodies. The PKC expression was correlated with histopathological findings in the same samples.