

membrane, the nuclei may be round, oval or pyramidal, darker than the apical cells and sometimes show a clear halo. They stain in immunohistochemistry by high-weight cytokeratins (34 β E12) and p63. The first stains the cytoplasm and the latter the nuclei.

Presence of basal cells in prostatic acini excludes adenocarcinoma but not their absence. Why does it happen? One of the reasons is disclosed by the paper of this survey. Very rarely basal cells may not stain by immunohistochemistry. Most frequently, absence of basal cells is due to the anatomical distribution in the acini. Basal cells may be continuously distributed along the acini or may be patchy or discontinuously distributed. The latter distribution frequently happens in smaller branches of the acini, which may also not show basal cells at all.

This peculiar distribution of basal cells is of utmost importance for the proper interpretation of small foci "suspicious but not diagnostic for adenocarcinoma" (improperly called ASAP). In such small foci, basal cells may be absent due to anatomical spacing and not due to absence of true neoplastic acini.

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INVESTIGATIVE UROLOGY

Expression of cAMP and cGMP-Phosphodiesterase Isoenzymes 3, 4, and 5 in the Human Clitoris: Immunohistochemical and Molecular Biology Study

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Objectives: Only a little research has focused on the evaluation of female sexual function. With sexual stimulation, the clitoris becomes engorged with blood and tumescent. Nevertheless, only little is known about the significance of the cyclic nucleotide-mediated signal transduction in the control of this process. We sought to elucidate the presence of the phosphodiesterase (PDE) isoenzymes 3, 4, and 5 in the human clitoris using immunohistochemical and molecular biology methods.

Methods: Thin sections of clitoral specimens were incubated with primary antibodies directed against PDE isoenzymes 3, 4, and 5. Next, the sections were incubated with either Texas red or fluorescein isothiocyanate-labeled secondary antibodies, and visualization was done using laser microscopy. The expression of mRNA encoding for various PDE isoenzymes was evaluated using reverse transcriptase polymerase chain reaction.

Results: Immunofluorescence indicating the presence of PDE4 (cyclic adenosine monophosphate-PDE) was observed in the nonvascular smooth musculature of the corpus cavernosum clitoris, sinusoidal endothelial and subendothelial layers, and nerve fibers innervating the tissue. Immunoreactivity specific for PDE5 (cyclic guanosine monophosphate-PDE) was limited to the smooth muscle of the clitoral erectile tissue. The fluorescein isothiocyanate reaction indicating the expression of PDE3 (cyclic adenosine monophosphate-PDE) was registered to a certain degree only in the clitoral epidermis. In the reverse transcriptase polymerase chain reaction studies, a predominant expression of mRNA encoding for PDE1A was registered, but only small amounts of mRNA encoding for PDE4 and PDE5 were detected.

Conclusions: Our results have demonstrated the presence of cyclic adenosine monophosphate-PDE and cyclic guanosine monophosphate-PDE in the human clitoris and may indicate a regulatory function of these enzymes in the cyclic nucleotide-mediated control of smooth muscle tone.

Editorial Comment

Sexual dysfunction in women remains a significant problem that may affect up to 43% of women in the United States of America (1). Despite this, in contrast to the extensive knowledge on male sexual function and dysfunction during the last years, studies on physiology of female sexuality have been received minimal attention. Therefore, the present study is very much welcome, because objectively demonstrated the localization of mRNA transcripts and immunoactivity related to PDE isoenzymes 4 and 5 in the human clitoris.

Because of their central role in smooth muscle tone regulation, PDEs remain an attractive target for drug development in urology and other specialties, such as gynecology (2). Also, PDE inhibitors are under investigation with potential uses in urinary stone disease, overactive bladder (2) and lower urinary tract symptoms (3).

The extensive clinical data on the use of the orally active PDE5 inhibitors in the treatment of male erectile dysfunction claimed PDE characterization in female genital tissues with the aid of immunohistochemistry and molecular biology (2,4). The findings of the present study are in support that PDE isoenzymes are involved in clitoral function during sexual stimulation and are giving additional rationale for the use of PDE inhibitors in the pharmacotherapy of female sexual dysfunction and arousal disorders.

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Laparoscopic Partial Nephrectomy for Renal Masses: Effect of Tumor Location

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Objectives: To report our single institutional experience of laparoscopic partial nephrectomy (LPN) for enhancing renal masses and evaluate outcomes and histopathologic findings with respect to the location of the renal mass.

Methods: A retrospective review of LPN for 123 renal masses completed by 7 urologists was performed. Of these lesions, 49 (40%) were exophytic, 19 (15.5%) endophytic, 47 (38%) mesophytic, and 8 (6.5%) were hilar. We defined exophytic as more than 60%, mesophytic as 40% to 60%, and endophytic as less than 40% of the renal mass protruding off the surface of the kidney on radiologic imaging studies. Hilar lesions were those located within 5 mm of the renal hilar structures, regardless of the surface characteristics.

Results: The mean tumor size was 2.6 cm (range 1 to 9). Hilar vessel clamping was performed during 55 procedures (44.7%); the mean warm ischemia time was 27 minutes (range 12 to 52). On final histopathologic examination, 3 patients (2.5%) had positive tumor resection margins. Overall, 26 (20.6%) complications occurred. The complication rate was significantly less for patients who underwent LPN for an exophytic (10%) or a mesophytic (12.8%) mass than for those with an endophytic (47%) or a hilar (50%) mass. Histopathologic examination of the renal masses revealed malignant pathologic features in 86 (69%) and benign findings in 37 (31%). In our series, only 55% of exophytic tumors were malignant and, if malignant, were invariably low grade (96%).

Conclusions: The complications of LPN and the malignancy rate of the renal lesions were related to the tumor location within the kidney.

Editorial Comment

The authors nicely demonstrate that the intrarenal tumor location has a significant impact on the complication rate during laparoscopic partial nephrectomy. The authors reminded us that the lesions close to the hilum are the most prone to surgical complications (50%). Also, it was reported that the upper pole tumors resulted in the greatest average blood loss and complication rate (25.8%).

I would like to take the opportunity to remind those involved in upper pole resection that the vascular anatomy in this region, as related to the kidney collecting system, is the most complex (1). Of utmost importance is the fact that the posterior segmental artery itself was in close relationship to the upper infundibulum or to the junction of the pelvis with the upper calyx in 57.3% of the cases (1,2). Therefore, this artery is at great risk during incisions close to the hilum (less than 1 cm). Injury to the posterior segmental artery (retropelvic artery) will result in significant hemorrhage and may be associated with destruction of a large area of the remaining renal parenchyma. In some cases, the area supplied by the posterior segmental artery corresponds to approximately 50% of the functioning renal tissue in normal kidneys (3).

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