

## Clear cell adenocarcinoma of the female urethra showing strong immunostaining for prostate-specific antigen

K. KAWANO, M. YANO, S. KITAHARA and K. YASUDA

*Department of Urology, Dokkyo University School of Medicine, Koshigaya Hospital, Saitama, Japan*

### Case report

A 49-year-old woman presented with the chief complaint of voiding difficulty. On digital vaginal examination, a walnut-sized mass was confirmed around the urethra. Abdominal ultrasonography showed a mass at the bladder neck (Fig. 1), and cystoscopy revealed the tumour protruding from the posterior urethral wall at the bladder neck. Subsequent bone scintigraphy, systematic CT and serum chemistry showed no metastasis. The patient underwent transurethral biopsy of the tumor, and the histological diagnosis was carcinoma composed of high-grade cancer cells. Under the diagnosis of an invasive but localized urethral tumor, total cystourethrectomy was performed, including anterior vaginal wall and pelvic lymph node dissection. An ileal conduit was chosen for urinary diversion. The anterior vaginal wall was intact, but the tumour invaded the mucosa and muscle layer of the bladder trigone. No lymph node metastasis was detected. The patient was free of disease a year after surgery. Microscopy of the tumour showed clear-cell type adenocarcinoma, most of which contained clearly vacuolated cytoplasm and pleomorphic nuclei (Fig. 2a). The histological diagnosis was mesonephric adenocarcinoma. Immunohistochemical staining, using the two-step indirect immunoperoxidase technique with antibodies to PSA (L-1838, Dako, Glostrup, Denmark), showed strong cytoplasmic reaction in the tumour cells (Fig. 2b). Serum PSA levels were not measured before surgery, but at the follow-up serum PSA levels were estimated several times (Tandem-R, Hybritech, San Diego, CA, USA); all were below the detectable limit (<0.2 ng/mL).

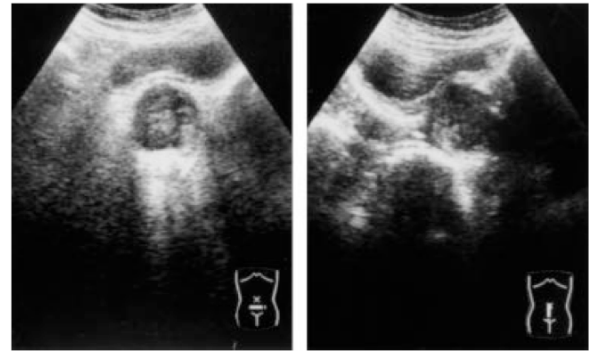
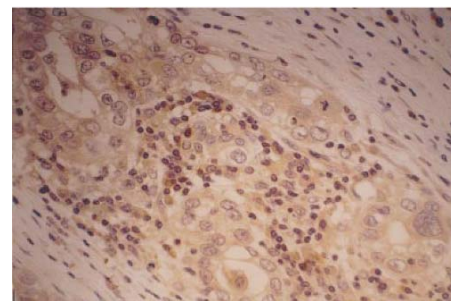
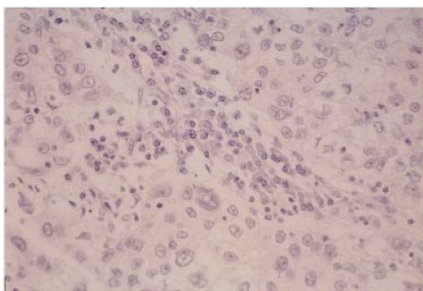


Fig. 1. Abdominal ultrasonograms showing the tumour at the bladder neck.

### Comment

The histogenetic derivation of clear cell adenocarcinoma in the female urethra remains controversial. Some authors suggested a mesonephric origin, from ultrastructural studies, and designated this tumour as a mesonephric adenocarcinoma, while Peven and Hidvegi [1] insisted on a Müllerian origin for this neoplasm, from an embryological perspective. From morphological and embryological findings, the female para-urethral ducts and glands have been considered to be homologous to the male prostate gland, and perhaps to the urogenital sinus. Furthermore, Pollen and Dreiling [2] strongly supported the homogeneity between the female paraurethral duct and male prostate gland on finding positive immunohistochemical staining using antibodies to PSA and PAP. They advocated that the tumour arises from the female para-urethral duct



**Fig. 2.** a, Sections of the tumour showing clear cell type adenocarcinoma (haematoxylin and eosin r400) and b, immunohistochemical staining for PSA showing a strong cytoplasmic reaction in the tumour (r600).

rather than embryonic remnants. Spencer et al. [3] and Zaviacic et al. [4] reported a neoplasm with a similar histological appearance and immunohistochemical characteristics as 'adenocarcinoma of Skene's para-urethral glands and ducts.' The present findings support the theory that the female clear cell adenocarcinoma arises from the para-urethral duct, as the present case was also positive immunohistochemically for PSA. However, there are variable terms for the neoplasm, e.g. mesonephroma, adenocarcinoma of Skene's para-urethral glands, and tumor of the female para-urethral duct. Therefore, the use of a more unified nomenclature is desirable. Clear cell adenocarcinoma of the female urethra is a comparatively rare entity; there are 42 cases of this neoplasm reported, including the present case, five of which had positive immunohistochemical staining for PSA. Only one was negative, but microscopy showed this tumour to be truly of para-urethral duct origin [5].

## References

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## Authors

K. Kawano, MD, Urologist.  
M. Yano, MD, Urologist.  
S. Kitahara, MD, PhD, Associate Professor.  
K. Yasuda, MD, PhD, Professor.  
Correspondence: Department of Urology, Dokkyo University School of Medicine, Koshigaya Hospital, Saitama, Japan.