

Inverted Papilloma of the Urinary Tract Presenting with Obstructive Voiding Symptoms

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INTRODUCTION

Inverted papilloma of the urinary tract is an uncommon urothelial neoplasm, which accounts for less than 1% of all urothelial neoplasms [1]. Since Potts and Hirst first described this entity in 1963 [2], over 300 cases have been reported in the English literature [3]. Although it is generally regarded as a benign lesion, conflicting data on multiplicity, recurrence rate, and association with urothelial carcinoma have left uncertainties concerning the biological behavior of inverted papilloma [3].

BRIEF HISTORY

An 85 year-old man, under treatment for hypertension, originally presented with complaints of difficult voiding and hematuria. We performed a transurethral resection of the prostate (TURP) under the impression of benign prostatic hyperplasia. A papillary tumor was noted on the left lateral wall of the urinary bladder and simultaneously resected. Pathological examination identified the growth as an inverted papilloma (Fig. 1). He was regularly followed up at an outpatient clinic.

Three years later, our patient reported recurrence of the original symptoms. Intravenous urography was negative, but a cystourethroscopy revealed bladder neck contracture, which we treated with a tran-

surethral incision. During this procedure, a cauliflower-like tumor was discovered growing on the scar from the previous resection site, on the lateral wall of the urinary bladder. It was removed and the pathology report revealed a urothelial carcinoma with muscular invasion. Subsequent abdominal computed tomography (CT) and a whole body bone scan produced no evidence of lymphadenopathy or bone metastasis. Urinary bladder carcinoma (stage II, T2a N0 M0) was diagnosed and intravesical chemotherapy was recommended.

COMMENT

Urinary tract inverted papilloma is an uncommon urothelial neoplasm that demonstrates an inverted growth pattern, usually composed of anastomosing islands and trabeculae of histologically and cytologically normal urothelial cells invaginating from the surface urothelium into the subjacent lamina propria but not into the muscularis propria. Sung et al observed that urothelial inverted papilloma is usually found in men in their sixth or seventh decade of life [3], has a male predominance (male-to-female ratio, 7.3:1) and occurs at a mean age of 60 years [4], although a wide age range (from 26 to 85 years) was noted.

Transurethral resection is regarded as the standard treatment for inverted papilloma in the lower urinary tract, and all tumors arising from the urinary bladder and prostatic urethra are treated by this modality.

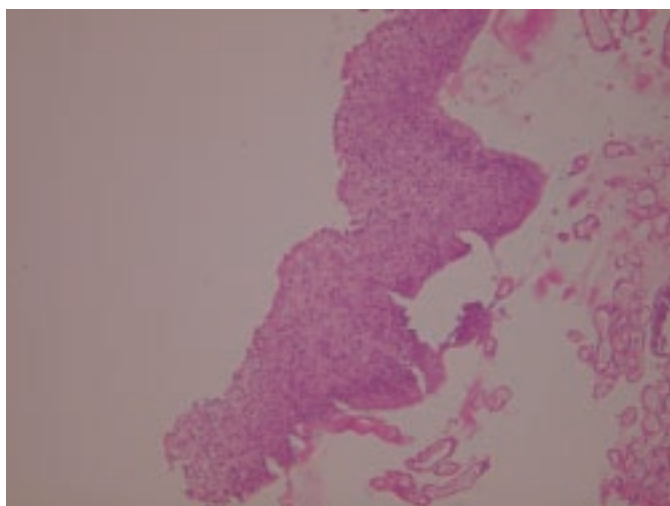


Fig. 1. Inverted papillomas. There is urothelial mucosa with urothelial cell cords forming papillary fronds or invaginating into the stroma. The urothelial cells show minor cytologic atypia (100×).

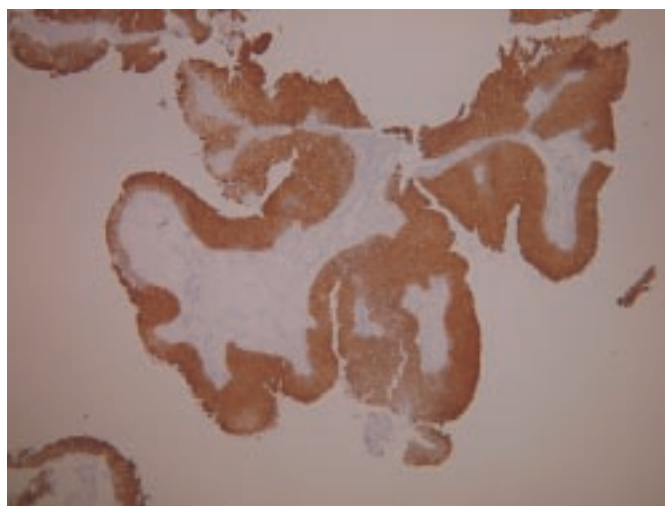


Fig. 2. Immunohistochemical stain for p53. The section shows the urothelial cells are not immunohistochemically reactive with p53 antibodies (100×).

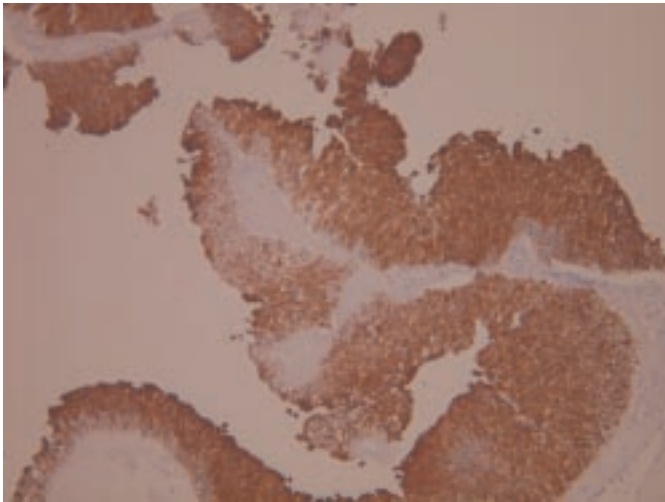


Fig. 3. Positive staining for CK20 is observed in urothelial carcinoma. The exophytic papillary component and unequivocal tumor invasion in the lamina propria or muscularis propria clearly justify a diagnosis of carcinoma. Marked cytological atypia, including nuclear pleomorphism, nucleolar prominence, and abundance of mitotic activity, favors a diagnosis of inverted urothelial carcinoma (100×).

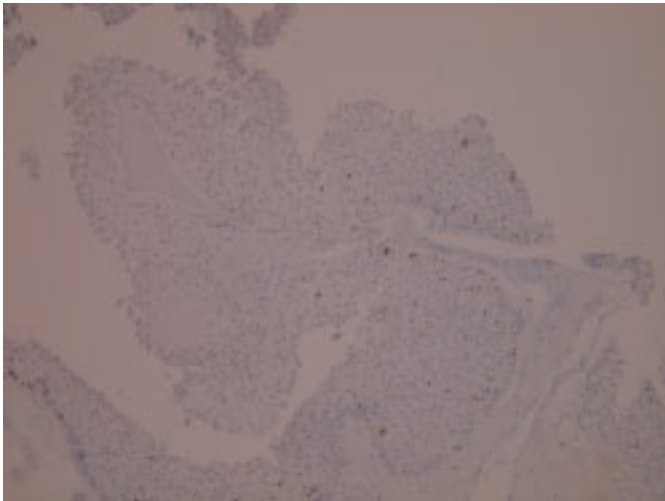


Fig. 4. Proliferative activity assessed using Ki-67 antibody. The percentage of positively stained tumor cells, assessed in hot spots under high magnification (100×).

Traditionally, inverted urothelial papilloma has been regarded as a benign neoplasm or a hyperplastic reactive lesion. However, cases associated with recurrence, or those with synchronous or metachronous urothelial carcinoma have generated uncertainty concerning its malignant potential [5].

Sung et al reported that with inverted papillomas in the urinary tract, both the extremely low incidence of tumor recurrence and strikingly favorable prognosis during follow-up suggest that inverted urothelial papilloma is a benign urothelial neoplasm, lacking any close connection with urothelial carcinoma, provided that the diagnosis of inverted papilloma is based on strictly defined criteria. Consequently, transurethral resection of inverted papilloma is adequate treatment, and surveillance protocols as rigorous as those employed in the management of urothelial carcinoma seem unnecessary for this benign entity [4].

Urothelial carcinoma is particularly hard to distinguish from inverted papilloma. Morphologic criteria alone are not enough and immunohistochemical assessments must also be done, especially in cases with only a small amount of biopsy material or in transurethral resections. Immunohistochemically, positive staining for p53, CK20 and CK7 is observed in urothelial carcinoma. Proliferative activity in the present case was assessed using Ki-67 antibody. The percentage of positively stained tumor cells, assessed in hot spots under high magnification (100X), suggest low proliferation rate (Fig. 2,3,4) [6].

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