

A CASE OF VILLOUS ADENOMA OF THE URINARY BLADDER WITH TUBULOVILLOUS ARCHITECTURE: CHARACTERIZATION BY IMMUNOHISTOCHEMICAL ANALYSIS

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Villous adenomas of the urinary tract are rare as compared to urothelial carcinoma. We report a case of urinary bladder villous adenoma in a 90-year-old woman. Cystoscopic examination revealed a papillary tumour in the diverticulum at the posterior wall of the urinary bladder. Transurethral resection was performed and histopathological examination revealed predominantly tubulovillous architecture, and showed an identical immunohistochemical profile to villous adenoma associated with cystitis glandularis.

Key words: villous adenoma, urinary bladder, tubulovillous architecture immunohistochemistry.

Introduction

Villous adenoma arises rarely in the urinary bladder as compared to urothelial carcinoma, and it is postulated that the origin is derived from chronic irritation [1-11]. We report a case of villous adenoma of the urinary bladder associated with chronic inflammation and show its profile evaluated by immunohistochemical analysis.

Case report

A 90-year-old female patient presented a urinary tract symptom due to the left ureter stone and associated left hydronephrosis and infection. The family history was negative including a history of renal diseases. After conservative treatment, the symptom was attenuated. Further examinations were performed, and papillary tumour was found in the diverticulum of the posterior cystic wall by cystoscopy. After a transurethral resection of the tumour, histopathological examination confirmed that this tumour was predominantly composed of the tubular epithelium and focally villous

epithelium lined by columnar epithelial cells (Fig. 1 A, C). The epithelial cells displayed mild to severe nuclear atypia and nuclear pseudostratification (Fig. 1 B). Mitoses were scattered in the tumour area. No invasive component was found. The area of cystitis glandularis was observed in the para-neoplastic area (Fig. 1 D). Immunohistochemical analysis showed that the epithelial cells were diffusely positive for cytokeratin 20 (CK20), focally positive for cytokeratin 7 (CK7), carcinoembryonic antigen (CEA), mucin 2 (MUC2) and negative for thrombomodulin, p53 and β -catenin (nuclear staining) (Fig. 2 and 3). Ki-67 antigen LI of the tumour cells is approximately 20% at its maximum (Fig. 3). The tumour was histopathologically diagnosed as a high-grade villous adenoma of the urinary bladder.

Discussion

It has been reported that villous adenomas are found predominantly in middle-aged and senile men, and the patients presented clinically with haematuria, irritative symptoms and occasionally mucusuria [2, 5, 11]. The

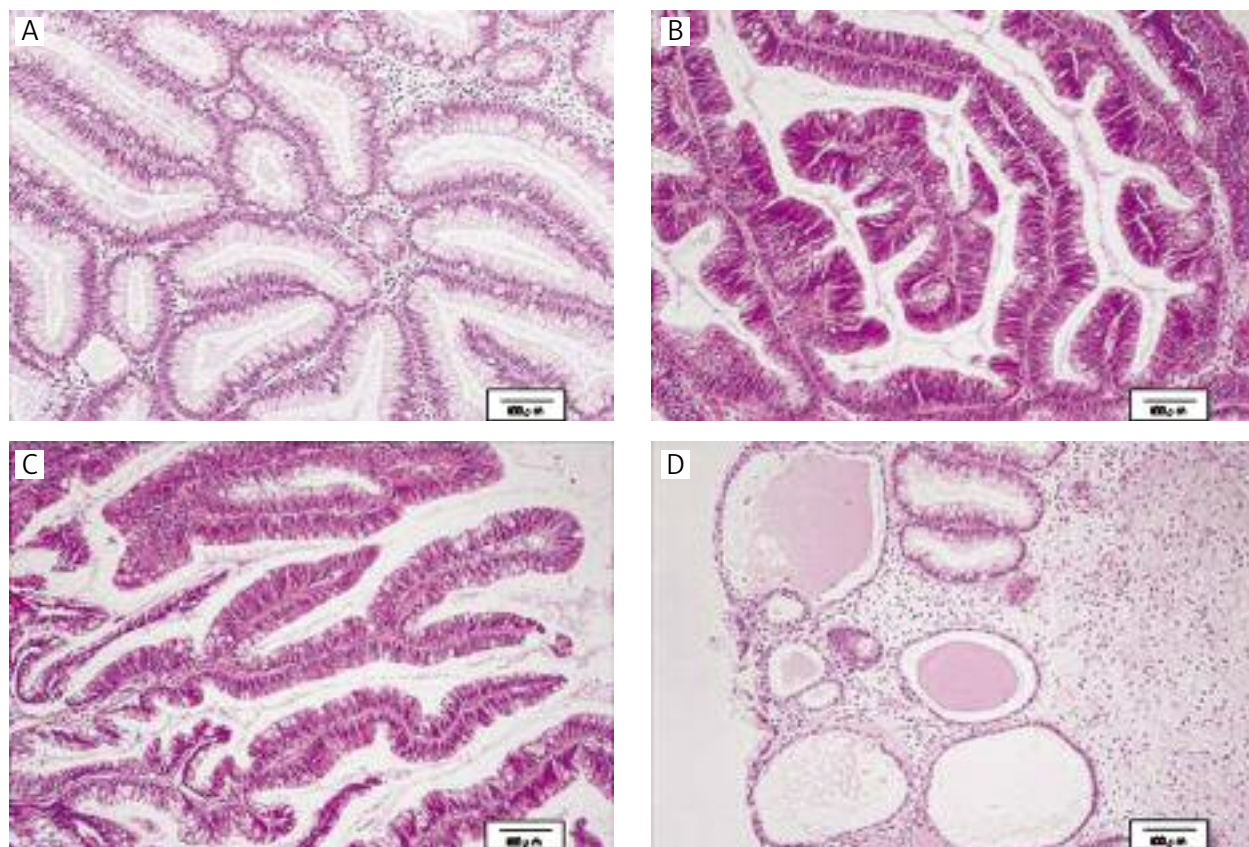


Fig. 1. A H&E staining section of villous adenoma with predominantly tubular appearance (A and B) and focally villous formation (C). The areas of cystitis glandularis were observed in the para-neoplastic area (D)

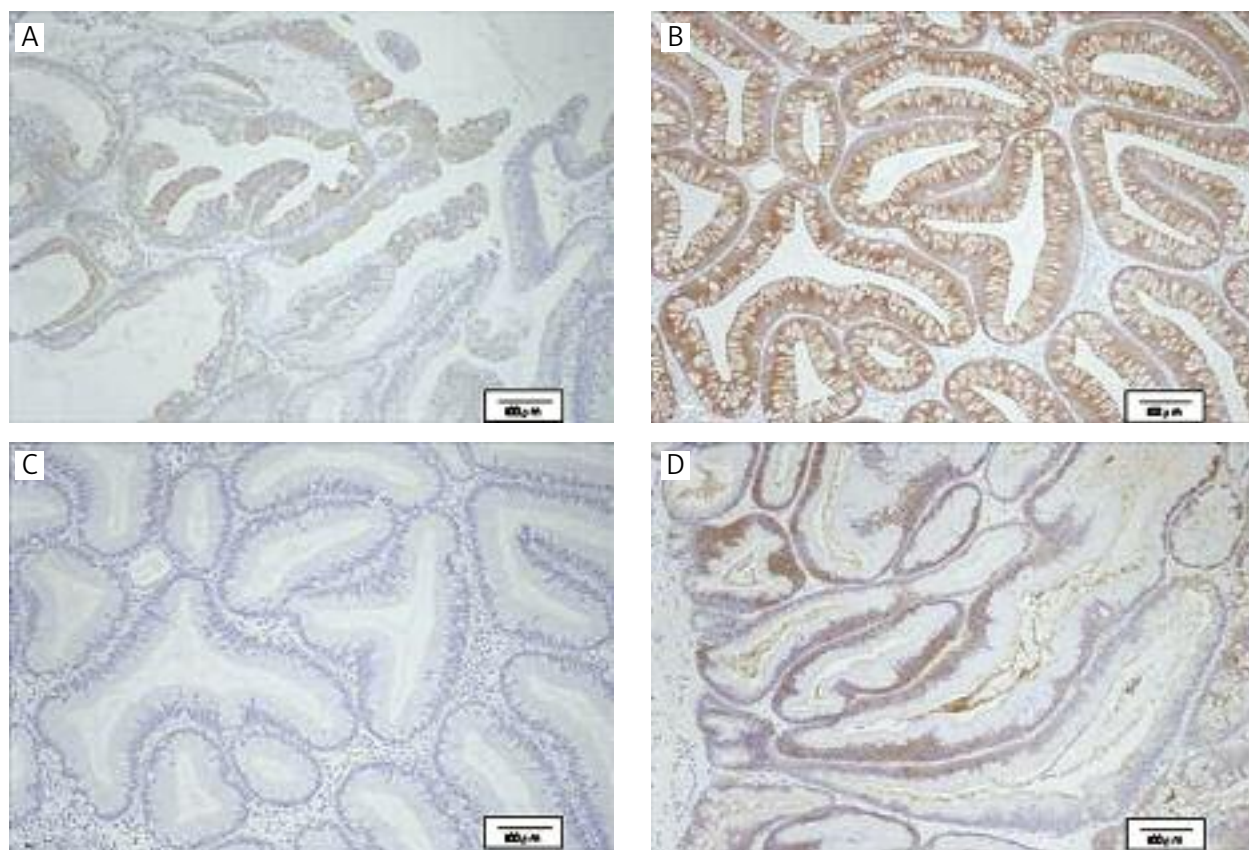


Fig. 2. Representative immunohistochemical staining sections of CK7 (A), CK20 (B), thrombomodulin (C) and CEA (D) in the villous adenoma

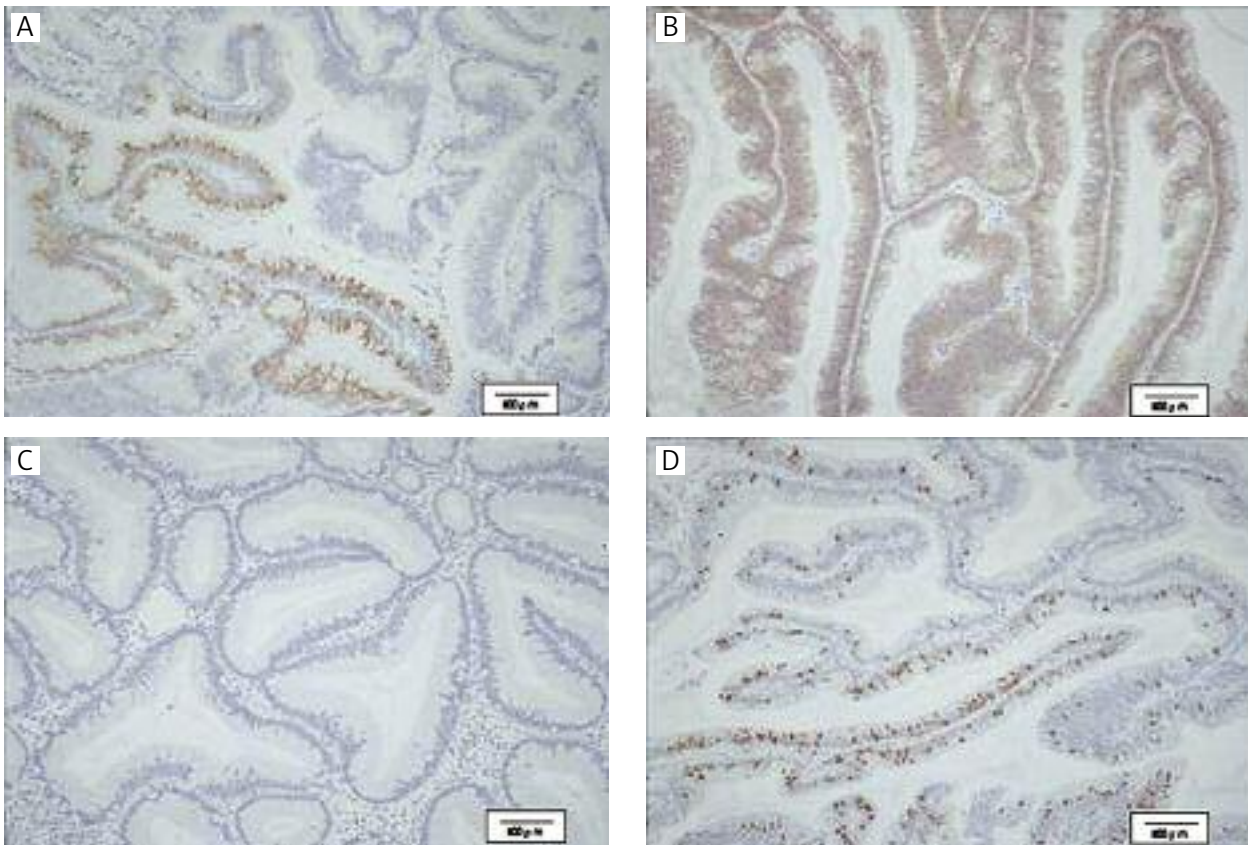


Fig. 3. Representative immunohistochemical staining sections of MUC2 (A), β -catenin (B), p53 (C) and Ki-67 (D) in the villous adenoma

most frequent site of its occurrence is the bladder dome and the posterior wall, and the occurrence has been reported to be associated with chronic cystitis and following intestinal-type glandular metaplasia, which is consistent with our case [1, 2, 6].

Microscopic findings of villous adenoma show an atypical glands' form in villiform, glandular and papillary structure. Compared to the typical case, the glandular formation was predominant and other components occupied the limited area in our case. A similar case has been previously reported as tubulovillous adenoma of the urinary bladder [6]. Our case showed that the epithelial cells displayed mild to severe nuclear atypia and nuclear pseudostratification, but not invasion. The differential diagnosis of a villous adenoma includes a well-differentiated adenocarcinoma [1, 2]. Therefore, adequate sampling and pathological evaluation of specimens are recommended in order to exclude the possibility of adenocarcinoma based on the grade of atypia and presence of invasion [10]. Moreover, any urinary tract lesion diagnosed by biopsy as villous adenoma must be thoroughly sampled, because these lesions frequently coexist with infiltrating adenocarcinoma or urothelial carcinoma. Therefore, thorough follow-up of all patients is recommended.

The immunohistochemical profile of villous adenoma has been reported to be positive for CK20 and CEA,

and that approximately 50% of cases of the urinary tract villous adenomas exhibit positive results for CK7 [1, 2]. Neutral mucins, acidic sulphomucins, and sialomucins were previously identified within the villous adenoma and adjacent areas of cystitis glandularis, suggesting that the villous adenoma may form an intermediary stage in the development of some of the primary adenocarcinomas of the bladder arising in metaplastic intestinal mucosa [10]. In our case, adenoma component was also positive for MUC2. It is very important to distinguish from metastatic adenocarcinoma derived from the colon. Most of the cases of adenocarcinoma derived from the colon were reported to be positive for β -catenin (nuclear staining) and negative for thrombomodulin and CK7, while all urothelial carcinoma cases were positive for CK7, thrombomodulin and negative for β -catenin (nuclear staining) [12]. These findings support that the origin of villous adenoma in our case is the urinary bladder but not the colon.

We report a rare case of villous adenoma of the urinary bladder associated with chronic cystitis and following intestinal-type glandular metaplasia, and suggest that the entire histopathological and immunohistochemical examination is required in order to distinguish from carcinoma derived from either the urinary bladder or colon.

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