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Caso aislado

Plasmacytoid transitional cell carcinoma of the urinary bladder: A case report and review of the literature

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RESUMEN

Presentamos el caso de un varón de 63 años con una variante plasmocitoide de carcinoma de células transicionales de vejiga urinaria. Debutó clínicamente con disuria y hematuria. En la cistoscopia se observó una lesión ulcerada en la pared de la vejiga que se biopsió. Tras el diagnóstico se realizó una cistectomía. El estudio histopatológico mostró un crecimiento difuso de células tumorales que asemejaban células plasmáticas. El diagnóstico diferencial se estableció entre un linfoma, melanoma y plasmocitoma. Las células neoplásicas mostraron inmunorreactividad frente a citoqueratinas, siendo negativo el estudio frente a S100 y marcadores de células linfoides y plasmáticas. En la literatura únicamente se recogen dos casos de esta variante tumoral, con datos clínicos y morfológicos semejantes a los que presentamos. La confirmación de la naturaleza epitelial de las células neoplásicas es la clave para el diagnóstico. **Rev Esp Patol 2001; 34(1): 65-68.**

Palabras clave: Vejiga urinaria - Carcinoma de células transicionales - Plasmocitoide - Diagnóstico diferencial - Inmunohistoquímica

SUMMARY

We report a case of a 63-year-old male with plasmacytoid transitional cell carcinoma of the urinary bladder. The patient presented with dysuria and hematuria. Cystoscopy revealed an ulcerated lesion in the bladder mucosa. Histological studies showed a diffuse growth of tumor cells resembling plasma cells. Differential diagnosis included lymphoma, melanoma and plasmacytoma. Tumor cells were immunoreactive for cytokeratins and negative for S-100, plasma cell and lymphocyte markers. To our knowledge, there are only two previous cases of this entity reported in the literature. They showed similar clinical and morphological data. Confirmation of the epithelial nature of the neoplasm is key for the diagnosis. **Rev Esp Patol 2001; 34(1): 65-68.**

Key words: Urinary bladder - Transitional cell carcinoma - Plasmacytoid - Differential diagnosis - Immunohistochemistry

INTRODUCTION

Transitional cell carcinoma comprises about 90% of all primary neoplasms of the urinary bladder (1). Several cytoarchitectural variations exist, including the plasmacytoid type that has been previously reported only twice. One of these cases mimics a myeloma (2). The second one was initially diagnosed as a malignant lymphoma (3). In both cases the cells resembled plasma cells, and were strongly immunoreactive for epithelial mar-

kers and negative for plasma cells and lymphocyte markers. The aim of this paper is to report a further case of plasmacytoid transitional cell carcinoma of the urinary bladder.

CASE REPORT

The patient was a 63-year-old male who initially was studied by his urologist in 1995 because of lower urinary symptoms. A comprehensive clinical examination and a fine needle biopsy of the prostate were performed with no clinical or pathological findings. He presented again on February 1998 with left abdominal pain, increased urinary frequency, hematuria and dysuria that had appeared during the previous month. The patient developed oliguria and acute renal failure in a few hours, with an increased serum creatinine (1.8 mg/ml). Physical examination and evaluation of peripheral blood, serum and urine protein and sediment were all normal. The ultrasonographic study revealed a ureteral obstruction and a provisional percutaneous nephrostomy was performed. The acute symptoms disappeared. A cystoscopy revealed several solid and nonulcerated lesions in the left and posterior bladder wall and a transurethral resection was done. Histological study revealed a bladder carcinoma. Therefore, a radical cystoprostatectomy was performed, with posterior ileal neobladder construction with posterior intravenous chemotherapy. The patient has been periodically evaluated during the last two years with no evidence of disease, and good neobladder function.

PATHOLOGICAL FINDINGS

Transurethral resection specimens consisted of multiple fragments of gray-tan tissue, which measured $3 \times 3 \times 0.5$ cm in aggregate. They were fixed in 10% formalin and paraffin-embedded in their entirety, then stained with hematoxylin-eosin, periodic acid-Sciff (PAS) and methyl-green pyronin. Lysozyme reaction was performed. Sections of the bladder wall showed a diffuse monomorphous cellular infiltrate that involved the submucosa (Fig. 1) with only scant areas of residual normal surface urothelium. The cells were round to oval, with a basophilic, PAS-negative and granular cytoplasm. Nuclei were eccentric (Fig. 2) with finely dispersed chromatin and no nucleoli. Mitoses were scant. Some tumor cells presented a paranuclear clear area, mimicking a negative Golgi zone (Fig. 2). These plasmacytoid tumor cells were in continuum with the overlying urothelium where present. The lesion showed a lymphocytic infiltrate of moderate intensity. Tumor showed scattered clusters of cells with areas of cytoplasmic clearing, resembling a conventional transitional cell carcinoma.

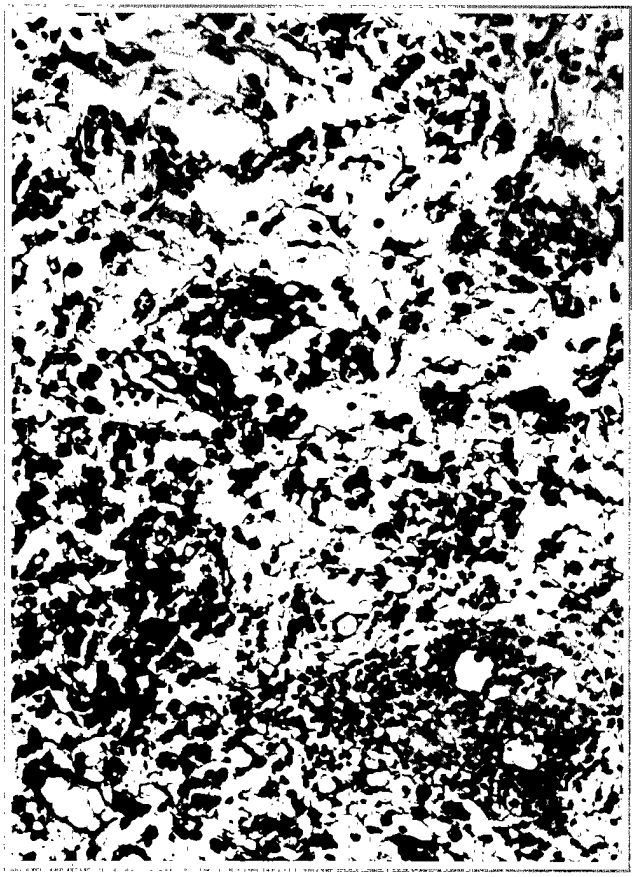

Figure 1. Urinary bladder sections showed a diffuse monomorphous cellular infiltrate that involved the submucosa with a moderate chronic infiltrate composed of lymphocytes and plasma cells. (Hematoxylin and eosin, original ×125).

The specimen of cystoprostatectomy showed a minimal residual focus of carcinoma in the bladder wall with the same features, with no involvement of the surgical margin.

Immunohistochemical studies were performed in an automatic immunostainer (Techmate 500, Dako) with antibodies against the following antigen: cytokeratin CAM 5.2 (Beckton-Dickinson, diluted 1:7, overnight); cytokeratin AE3-AE1 (Biogenex, diluted 1:400, overnight); Kappa light chain (L1C1) (Novocastra, diluted 1:500, overnight); Lambda light chain (HP-6054) (Novocastra, diluted 1:2000, overnight); common leu-

Figure 2. Tumor cells showed plasmacytoid features: round to oval, basophilic cytoplasm and eccentric nuclei. Some tumor cells presented a paranuclear clear zone (arrows). (Hematoxylin and eosin, original ×500).

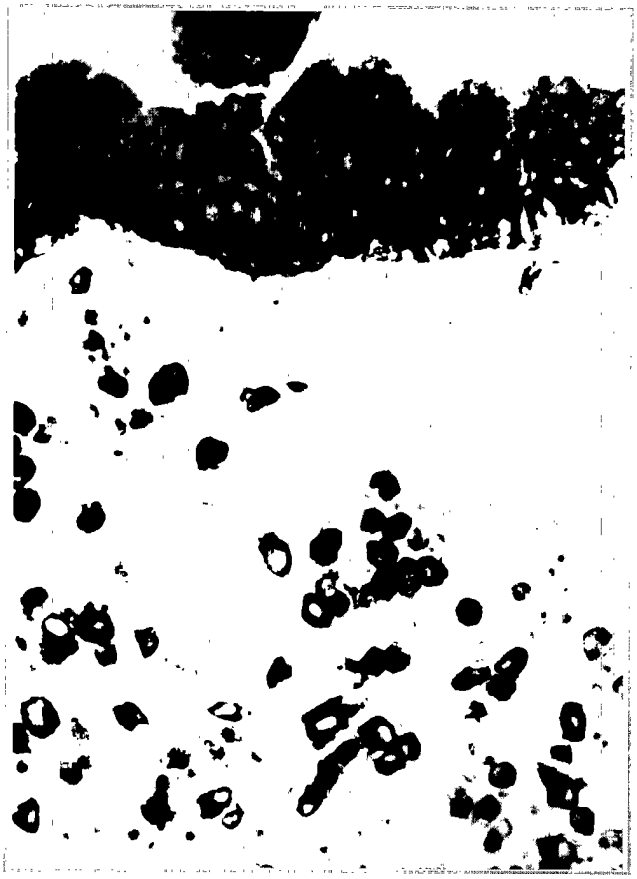

Figure 3. Tumor cells showed strong immunoreactivity for cytokeratins with cytoplasmic pattern. (Cytokeratin CAM 5.2, original ×500).

kocytic antigen ALC (CD45) (Biogenex, diluted 1:1600, overnight); CD-68 (KP-1) (Dako, diluted 1:200, overnight); S-100 (Biogenex, diluted 1:2000, overnight); vimentin (V9) (Dako, diluted 1:2000, overnight); chromogranin (LK2H10) (Biogenex, diluted 1:1600, overnight); neuron specific enolase NSE (N3) (Biogenex, diluted 1:1600, overnight); and synaptophisin (SY38) (Labomed, diluted 1:7, overnight). All of them were developed using Envision (Dako) system and DAB plus (Dako) chromogen. Antigen retrieval was performed with a microwave (700 w, 20 min) and citrate buffer (10 mM, pH 6). Immunoreaction specificity was assessed by staining positive control section tissues. Only cytokeratins (CAM 5.2, AE3-AE1) showed strongly cytoplasmic immunoreactivity in all tumor cells and in the overlying urothelium, when present (Fig. 3). No immunoreactivity was seen for other antibodies. The diagnosis of plasmacytoid transitional cell carcinoma was performed.

DISCUSSION

Tumors with plasmacytoid features including carcinomas, myoepitheliomas and neuroendocrine tumors have been found in many organs (4-6), but they are unusual in the urinary bladder. Plasmacytoid transitional cell carcinoma (PTCC) was reported almost simultaneously in 1991 by Sahin *et al.* (2) and by Zukerberg *et al.* (3). Since then this tumor is usually referred to in textbooks of pathology (1, 4), but new cases have not been reported in the English medical literature. Based on the morphological features and the expression of cytokeratins we believe this is the third reported case of this entity.

In the first case reported by Sahin *et al.* (2), the tumor arose as osteolytic lesions in the skull mimicking a myeloma, and it was diagnosed by a fine needle aspiration biopsy. All the studies –evaluation of peripheral blood, bone marrow aspiration, urine electrophoresis and immunoelectrophoresis– were negative. The patient presented with hematuria and the bladder studies revealed another lesion with the same morphology. Immunohistochemical and ultrastructural studies confirmed the epithelial nature of the tumor cells.

The second reported case was initially diagnosed as a malignant lymphoma (3). The diffuse lymphocytic infiltrate was very intense and effaced the epithelial nature of the tumor. The presence of atypical transitional cell carcinoma lining several fragments of tissue, and the strong positive immunostaining with cytokeratins led to a change in the initial diagnosis of carcinoma.

Clinical and evolution data of the PTCC reported are similar to our case: the three cases appeared in male patients in their early seventies, and urinary symptoms such as hematuria and dysuria were present.

The treatment in all cases was the complete excision of the tumor and multidrug chemotherapy. In the case reported by Zukerberg (3), the patient was also treated with radiotherapy. The patient reported by Sahin (2) presented with bone metastasis in the initial diagnosis. Both patients were clinically free of disease more than 1.5 years after treatment. In our case, the patient is free of tumor two years after diagnosis.

The differential diagnosis of PTCC includes other lesions such as plasmacytoma, lymphoma and melanoma. Plasmacytomas arising in the urinary bladder have been rarely reported (1, 7, 8). Several authors have reported plasmacytomas with positive immunoreactivity for cytokeratins (9, 10). Identification of immunoglobulins by immunohistochemistry is essential for a correct diagnosis. In our case, methyl-green pyronin stain was positive in scattered normal appearing plasma cells of the inflammatory infiltrate and both kappa and lambda light chain immunoreactivity were negative in the tumor cells.

Lymphomas arising as primary or metastatic tumors in the urinary bladder are very uncommon (7, 11, 12). Melanoma has been reported throughout the genitourinary tract, including the bladder (13, 14). Both tumors can show plasmacytoid features in some cells (6, 15). The immunohistochemical results for ALC and S-100 in our case were both negative.

In summary, we report the third case of plasmacytoid transitional cell carcinoma, a rare neoplasm in the urinary bladder. This morphological type should be included in the differential diagnosis of tumors with plasmacytoid features, such as plasmacytoma, lymphoma and melanoma. Although in all three reported cases, evolution and the disease-free time would suggest a good prognosis; new cases and further studies are necessary to support this hypothesis. We conclude that confirmation of the epithelial nature of the neoplastic cells is the key to making a correct diagnosis of this tumor type.

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