

Case Report

Plasmacytoid variant of urethelial carcinoma with positive membranous staining for E-cadherin: A rare case report

Mehmet Salih Boğa¹, Tangül Pınarcı², Kayhan Yılmaz¹, Murat Savaş¹, Mutlu Ateş¹

¹Department of Urology, Health Sciences University, Antalya Training and Research Hospital, Antalya, Turkey

²Department of Pathology, Health Sciences University, Antalya Training and Research Hospital, Antalya, Turkey

Corresponding author: Mehmet Salih Boğa

Address: Department of Urology, Antalya Training and Research Hospital, Varlık Mh., Kazım Karabekir Cd., 07100 Muratpaşa/Antalya Antalya, Turkey. [Tel:+905324310069](tel:+905324310069) E-mail: msalihboga@yahoo.com

Abstract:

The plasmacytoid variant of urethelial carcinoma (PUC) is a rare. A 46-year-old man was admitted to our clinic with the complaint of macroscopic hematuria. Ultrasonographic examination revealed a mass in the right side wall of the bladder. Transurethral resection pathology of the patient reported as a PUC. Pathological stage was pT1 and lymphovascular invasion, neural invasion reported as a negative. Postoperative thoraco-abdominal CT scan showed no evidence of metastasis other than localized findings in the bladder. Re-TUR pathology was reported as a carcinoma in situ and urothelial proliferation of uncertain malignant potential. Whatever a residual tumor not seen in re-TUR pathology we planned cystectomy for this patient in the near future because of presence of CIS and aggressivity of this variant. Immunohistochemistry staining were compatible with plasmacytoid variant of urothelial cancer. We herein report our case of this rare variant of urothelial cancer with a review of its characteristics

Keywords: urethelial carcinoma, plasmacytoid variant, E-cadherin, cystectomy

Introduction:

Bladder cancer is one of the most interesting cancer epidemiologically and the number of cases have increased in recent years. Bladder cancer is the 2nd most common cancer among urogenital cancers and about 90% of primary bladder cancers are transitional cell carcinomas. Approximately 20-30% of newly diagnosed bladder cancers are invasive bladder cancer. Invasive bladder cancer has high mortality disease and requires aggressive treatment. Prospective studies and increased numbers of tumor markers discovered have appeared in cancers with atypical variants. The plasmacytoid variant of urethelial carcinoma (PUC) is a rare type and the total number of cases reported to date is around one hundred. The plasmacytoid variant has infiltrative poor prognosis and almost all of the patients were metastatic at the time of diagnosis. The related publications are either single cases or small series of case presentations.

Case Presentation:

A 46-year-old man was admitted to our clinic with the complaint of macroscopic hematuria. There was no family history of genitourinary malignancy, no additional illness, no smoking, no chemical exposure, etc. in the background of the patient. Serum values were within normal limits. Cystoscopy

revealed a solid mass with a calcific surface of approximately 2 cm in the right side wall of the bladder. Transurethral resection pathology of the patient reported as a PUC. This variant is a very rare and high grade infiltrative urethelial carcinoma type. Pathological stage was pT1 and lymphovascular invasion, neural invasion reported as a negative.

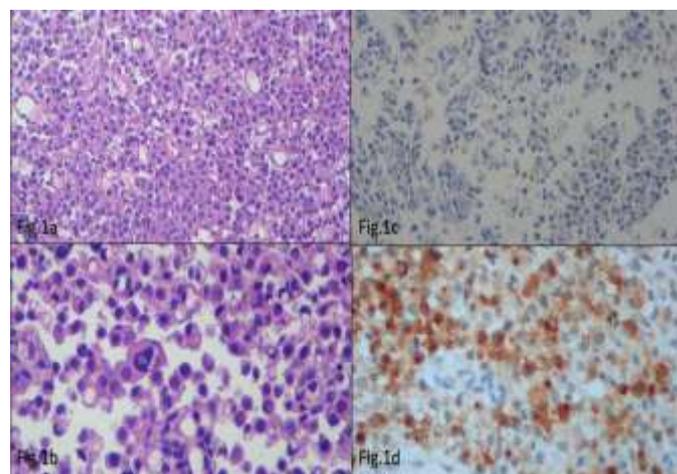


Figure 1: Immunohistochemical markers and images used in diagnosis of differential diagnosis of plasmocytic variant

Immunohistochemical investigation relieved that in addition to the papillary structures, a solid tumoral tissue was observed, which was formed by diffuse infiltration of medium sized atypical cells with plasma cell-like eosinophilic cytoplasm and eccentric nuclei, to the lamina propria (Fig. 1a and 1b). The differential diagnosis includes lymphoma, multiple myeloma, rhabdoid characteristic urothelial carcinoma, signed ring cell adenocarcinoma. In immunohistochemical staining; the lymphoma was excluded negative staining with LCA (Fig. 1c)

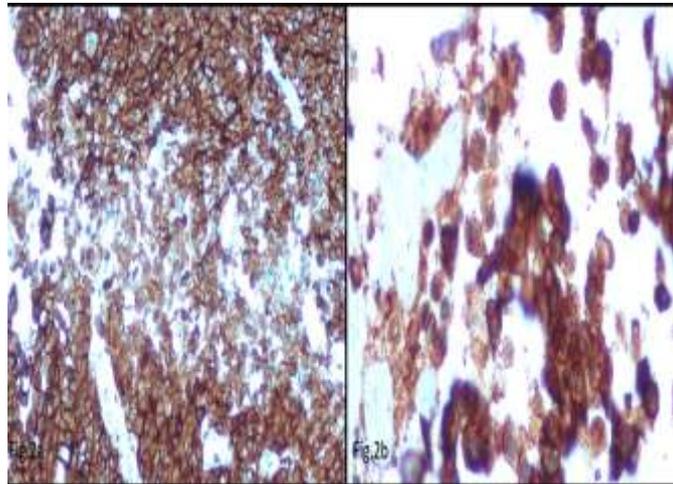


Figure 2 : E-cadherin positive discohesive tumor cells in plasmacytoid variant of urethelial carcinoma

Positive staining with uroplakin-3 and CK20 is compatible with urothelial carcinoma. There was diffuse strong positive staining with CD138, which is a plasmacytoid marker (Fig. 1d). E-cadherin positivity in membranous features in cohesive papillary tumor areas (Fig.2a). Discohesive, e-cadherin positivity in membranous features in plasmacytoid specific tumor cells (Fig.2b).

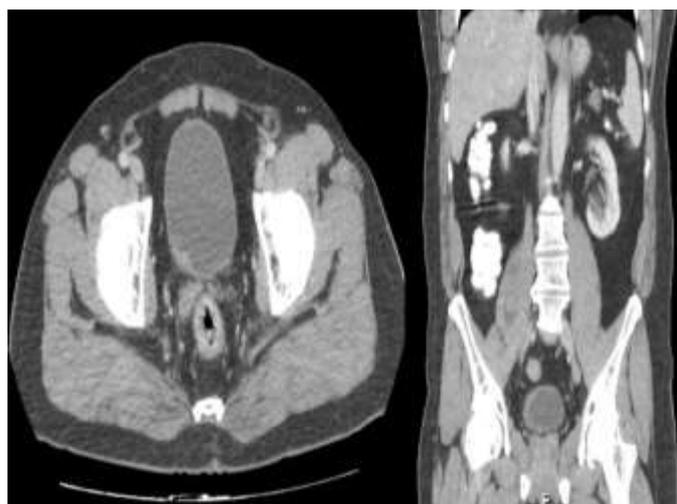


Figure 3: Metastatic workup with contrast-enhanced thoraco-abdominal tomography scan was negative.

Postoperative thoraco-abdominal CT scan showed no evidence of metastasis other than localized findings in the bladder (Figure 3). Re-TUR pathology was reported as a carcinoma in situ and urothelial proliferation of uncertain malignant potential. Whatever a residual tumor not seen in re-TUR pathology we planned cystectomy for this patient in the near future because of presence of CIS and aggressivity of this

variant.

Discussion:

Plasmacytoid urothelial carcinoma is a rare variant of bladder cancer which described as a first case by Sahin et al. in 1991[1]. The total number of cases reported to date is around one hundred and the related publications are either single cases or small series of case presentations. The largest case series of PUC recently described from a single institution. These series cases were % 8,2 pT1,% 32,6 pT2,% 34,7 pT3,% 24,5 pT4 in pathological staging. Four seven percent (47%) of cases treated with pelvic lymphectomy were positive for lymph node metastasis [2]. Different from the conventional urothelial carcinoma, PUC is characterized by discohesive cells with eccentrically localized placed nuclei and filled cytoplasm, look like as plasma cells. These cells infiltrate lamina propria and muscularis mucosa in a single or stratified form with a high potential for invasion and metastasis. [1,2]. The plasmacytoid urothelial carcinoma can be coexist with conventional UC or other variants such as sarcomatoid, micropapillary, nested, and small cell and signet ring cell carcinoma. In our case, the first pathology was the PUC variant, while the re-TUR pathology was reported as a carcinoma in situ and urothelial proliferation of uncertain malignant potential.

Despite the aggressive and combined treatment of reported cases, the prognosis was poor. Most of the cases were high-grade and poorly differentiated with some even metastasize to lymph nodes or other organs at the time of diagnosis. Despite the use of multimodality treatment overall and disease-specific survival in PUC patients is worse than conventional UC patients. Fox MD. et al. reported that one of three patients with pT1 tumors died at 17 months and seven of ten patients with pT4 tumors died at a mean of 13 months [2].

There was loss of membranous staining for E-cadherin in most PUC cases reported up to now. It is thought that the loss of e-cadherin leading to its single-cell growth pattern and aggressive clinical behavior and metastatic at the time of diagnosis [3-5]. E-cadherin is a cell adhesion molecule which interacts with the actin cytoskeleton by binding with a-, b-, and c-catenin [6]. In our case membranous e-cadherin staining was positive. We revealed e-cadherin positivity in membranous features in cohesive papillary tumor areas (Fig.2a) and discohesive, e-cadherin positivity in membranous features in plasmacytoid specific tumor cells (Fig.2b) in immunohistochemical staining. We think that despite the 2 cm solid lesion in the bladder, the absence of an extravesical spread in the contrasted CT may be due to e-cadherin positivity.

Plasmacytoid morphology is not unique to PUC, this morphology can be found in a number of other neoplasms in the urinary bladder, such as, lymphoma, melanoma, paraganglioma, multiple myeloma, rhabdoid characteristic urothelial carcinoma. In the other hand, it can be diagnosed as a metastasize carcinoma from the breast, stomach, and other organs may involve the bladder and show plasmacytoid morphology.[1,2] They have quite different prognoses and

therapeutic implications so it is important to differentiate PUC from other neoplasms in the bladder.

In difficult cases for pathological diagnosis, a panel of immunohistochemical stains can help the differential diagnosis[7,8]. In the present study, in addition to the papillary construction we found a solid tumoral tissue was observed, which was formed by diffuse infiltration of medium sized atypical cells with plasma cell-like eosinophilic cytoplasm and eccentric nuclei, to the lamina propria (Fig. 1a and 1b). We excluded the lymphoma by negative staining with LCA. Positive staining with uroplakin-3 and CK20 is compatible with urothelial carcinoma. There was diffuse strong positive staining with CD138, which is a plasmacytoid marker.

Conclusion:

Overall and disease-specific survival is poor especially in PUC patients with complete loss of E-cadherin staining. Therefore recognizing the UC variants is important for providing optimal care, as patients with these aggressive variants may benefit from novel therapeutic approaches that differ from those used for conventional UC.

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