



A Case of Plasmacytoid Variant of Bladder Cancer With a Single Penile Metastasis and a Complete Response to Carboplatin-Based Chemotherapy and Review of the Literature

Carlo Messina,^{1,2} Elisa Zanardi,^{1,2} Chiara Dellepiane,^{1,2} Laura Tomasello,¹ Maurizio Colecchia,³ Gian Luigi Ravetti,⁴ Francesco Boccardo,^{1,2} Bruno Spina⁴

Clinical Practice Points

- The plasmacytoid variant of urothelial carcinoma is considered a rare variant of urothelial carcinoma, accounting for 3% of all malignant primary tumors.
- The histologic and morphologic features are characterized by medium-size and dyshesive tumor cells with abundant eosinophilic cytoplasm, small hyperchromatic nuclei, and frequent mitotic figures, resembling plasma cells.
- We describe the case of a patient who underwent radical cystectomy, bilateral lymphadenectomy, and adjuvant chemotherapy for locally advanced plasmacytoid variant of urothelial carcinoma.
- After metastatic spread of the disease to the penis, the patient underwent 4 cycles of a carboplatin and paclitaxel regimen, experiencing a 12-month disease-free interval.
- Currently, no role for chemotherapy has been defined, given the absence of data from clinical randomized trials supporting their use.
- Therefore, we aimed to provide a comprehensive review of the published data focusing on the pathologic diagnosis and therapeutic management of this rare neoplasm.

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Introduction

Bladder cancer is the most common tumor of the urinary system and the ninth most common malignancy worldwide. It has been estimated that 386,000 new cases are diagnosed annually, resulting

in 150,000 deaths worldwide.¹ Urothelial carcinoma (UC) is the predominant histologic type in Western Europe and the United States, where it accounts for approximately 90% of all bladder cancer cases.² UC with plasmacytoid morphology, first described in 1991 as “similar to plasma cells seen in myeloma,” is a rare variant of UC and has been included in the World Health Organization classification since 2004.³

The distinction between the plasmacytoid variant (PCV) and UC is important to define the stage and prognosis and deliver appropriate therapy. However, differentiation sometimes causes a diagnostic challenge for the pathologist, in particular, when the diagnostic material is a small biopsy specimen, and when the clinical data are incomplete. PCV is thought to behave more aggressively, with a high incidence of lymph node involvement and both ureteral and paravesical surgical margins.⁴

In the present report, we describe the case of a patient who underwent radical cystectomy, bilateral lymphadenectomy, and adjuvant chemotherapy for locally advanced PCV of UC. After metastatic spread of the disease to the penis, the patient underwent

C.M. and E.Z. are co-first authors.

¹Academic Unit of Medical Oncology, IRCCS San Martino University Hospital—IST National Cancer Research Institute, Genoa, Italy

²Department of Internal Medicine, University of Genoa School of Medicine, Genoa, Italy

³Department of Pathology and Anatomical Pathology Unit, IRCCS National Cancer Institute, Milan, Italy

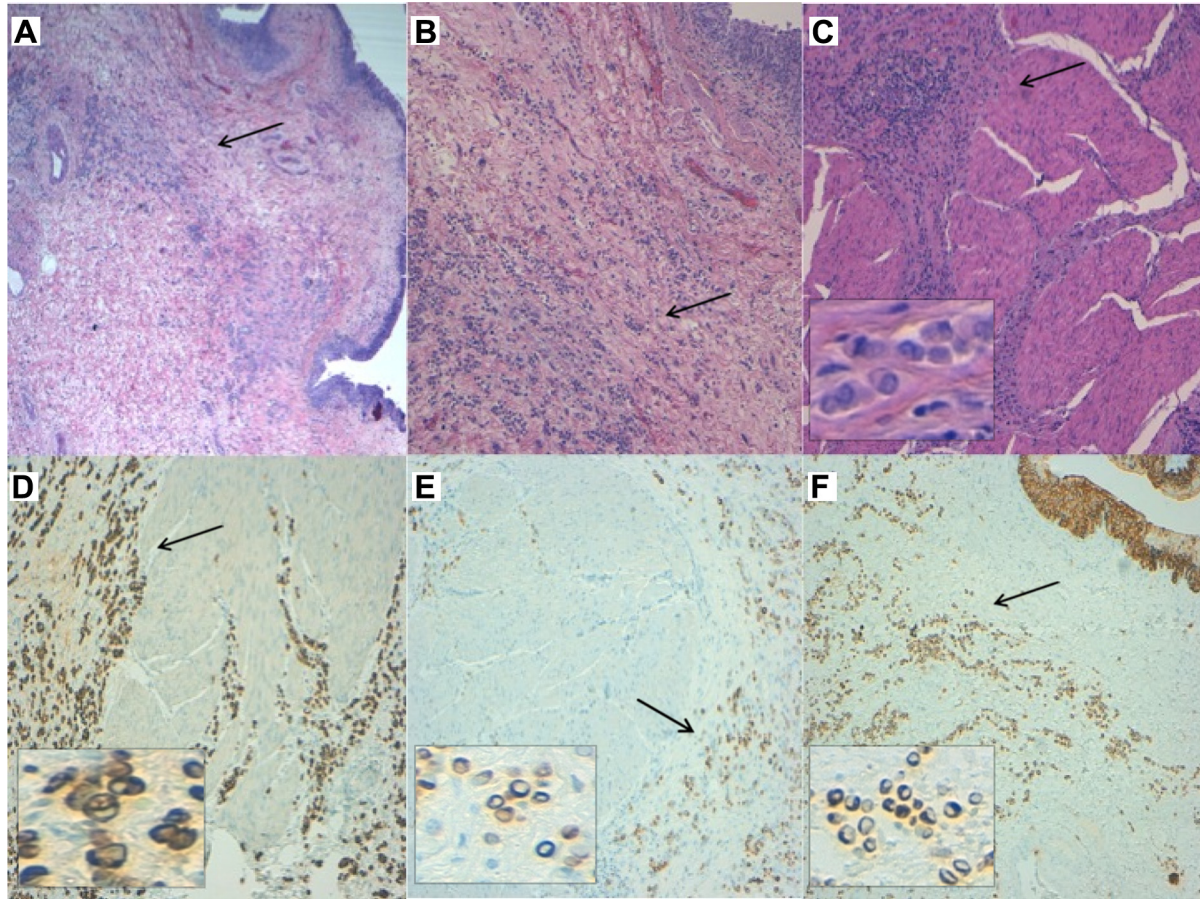
⁴Pathology Unit, IRCCS San Martino University Hospital—IST National Cancer Research Institute, Genoa, Italy

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Address for correspondence: Carlo Messina, MD, Academic Unit of Medical Oncology, IRCCS San Martino University Hospital—IST National Cancer Research Institute, and Department of Internal Medicine, University of Genoa School of Medicine, Largo R. Benzi 10, Genoa 16132, Italy
E-mail contact: carlo.messi@hotmail.it

Plasmacytoid Bladder Cancer Variant

Figure 1 Histological Examination Revealed the Presence of Muscle Invasive Plasmacytoid Variant of Urothelial Carcinoma. The Arrows Point out Tumor Cells Exhibiting a Prominent Eccentrically Placed Nucleus and Abundant Eosinophilic Cytoplasm, Resembling Plasma Cells: (A) Magnification x4, (B) Magnification x10, (C) Magnification x10 and (Insert) Area Indicated by Arrow Showing Tumors Cells. The Arrows Identify, on Immunohistochemical Evaluation, Strong Intracytoplasmic and Membranous Staining for: (D) Cytokeratin CK7 (magnification x20 and Insert Showing Higher Magnification of Tumor Cells), (E) CK20 (Magnification x10 and Insert Showing Higher Magnification of Tumor Cells), and (F) CK34 β -E12 (Magnification x10 and Insert Showing Higher Magnification of Tumor Cells).



4 cycles of a carboplatin and paclitaxel regimen, with a 12-month disease-free interval.

Case Report

A 68-year-old man, a smoker, was admitted to the urology department of our institution because of macroscopic hematuria. After detection of an intravesical mass with ultrasonography, the patient underwent cystoscopy and transurethral resection of the tumor. The histologic examination revealed the presence of muscle-invasive PCV. The preoperative total body computed tomography scan and bone scan findings were negative for distant metastases. Therefore, the patient underwent radical cystectomy, bilateral pelvic lymphadenectomy, and urinary diversion according to Bricker's procedure. The histologic examination revealed the presence of muscle-invasive PCV of UC, without metastases in any of the lymph nodes removed. Thus, the tumor was stage pT3b, grade 3, pN0/34, pM0. PCV was defined according to the histologic

findings (Figure 1A–C). The immunohistochemical evaluation found strong intracytoplasmic and membranous staining for cytokeratin (CK) 7, CK20, and CK34 β E12 (Figure 1D–F). After surgery, adjuvant chemotherapy for 4 cycles according to the following schedule was given: cisplatin 70 mg/m² on day 1 and gemcitabine 1000 mg/m² on days 1 and 8 every 21 days. However, 6 months later, because of new clinical onset of a penile nodule, the patient underwent excisional biopsy of the lesion. The histologic examination revealed the presence of PCV metastasis (Figure 2A–C). The immunohistochemical evaluation revealed strong intracytoplasmic and membranous staining for CK7, CK20, and CK34 β E12 (Figure 2D–F). No other secondary lesions were found in the restaging instrumental evaluation using computed tomography and bone scans. The patient underwent first-line chemotherapy for 4 cycles according to following schedule: carboplatin area under the curve of 5 and paclitaxel 175 mg/m² every 21 days. At 12 months after chemotherapy completion, the patient was

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