Clinical Case Report

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Unusual presentation of direct intraperitoneal metastases complicated with massive ascites from plasmacytoid variant of bladder cancer and adenocarcinoma of colon

A case report and literature review

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Abstract

Background: Plasmacytoid urothelial carcinoma (PUC) is a distinct variant of urinary bladder cancer, with a high propensity for invasion and poor prognosis. These tumors occur most commonly in male patients with the age of reported cases ranging from 46 to 87 years.

Case report: We present a case of a 74-year-old male patient having massive ascites and bilateral lower leg edema. Colonoscopy showed a 3-cm lesion in the sigmoid colon and an edematous nonpapillary tumor was found by cystoscopy in the bladder. Histopathology analysis of the biopsies showed adenocarcinoma of colon and PUC of bladder. The diagnosis of PUC with peritoneal carcinomatosis was then confirmed by immunohistochemical stain.

Conclusion: The diagnostic dilemmas of the unusual variant of urothelial malignancy, the origin of peritoneal metastasis, and its clinical impact are discussed in the present case.

Abbreviations: CT = computed tomography, ER = emergency room, PUC = plasmacytoid urothelial carcinoma.

Keywords: bladder cancer, peritoneal carcinomatosis, plasmacytoid variant, urothelial carcinoma

1. Introduction

Peritoneal carcinomatosis is a sign of cancer with terminal stage and origin usually from ovarian and gastrointestinal tumor. Urothelial carcinoma of the bladder is a very unusual cause except plasmacytoid variant. The plasmacytoid urothelial carcinoma (PUC) is a rare variant of histological subtype that was first described in 1991.[1] The PUC is usually very aggressive; we found distant metastases in most of cases at the time of diagnosis.[2] However, we often lose connection of peritoneal carcinomatosis and original tumor.

Despite being a tumor with poor prognosis, it has been shown to be chemosensitive. Treatment remains a challenge because of late presentation of the disease and late diagnosis. This report describes a patient who had adenocarcinoma of the colon and PUC variant of the bladder. Clinically, he presented with massive ascites and pitting edema of the bilateral lower legs without hematuria.

2. Case report

A 74-year-old male patient had developed abdominal fullness and bilateral lower leg edema in mid-August 2015. He visited our genito-urology outpatient department, and abdominal sonography revealed massive ascites. He was referred to our emergency room (ER), and abdomen computed tomography (CT) revealed massive ascites and omental cake, enlarged nodes in the paraaortic space, and diffuse irregular wall thickening in the urinary bladder which suggested bladder cancer (Figs. 1 and 2). In the ER, an abdominal paracentesis was performed and cells were collected for cytology analysis.

After admission, the patient's tumor marker levels were checked, and his serum carcinoembryonic antigen levels were elevated (16.77 ng/mL); therefore, colonoscopy was performed. A 3-cm colon tumor was found in the sigmoid colon (Fig. 3), and several small nodules were noted over the entire colon (Fig. 4). Cystoscopy revealed a nonpapillary type bladder tumor over posterior and left lateral wall (Fig. 5) was found.

Histopathology of colon and bladder tumor biopsies showed adenocarcinoma of colon, moderately differentiated, stage T2NxMx and urothelial carcinoma, high grade with plasmacytoid variant of bladder invasion to perivesical tissue, stage cT3N3Mx at least. Since the small colon nodules were more like benign lesions (tubular adenoma), the biopsy was not performed.

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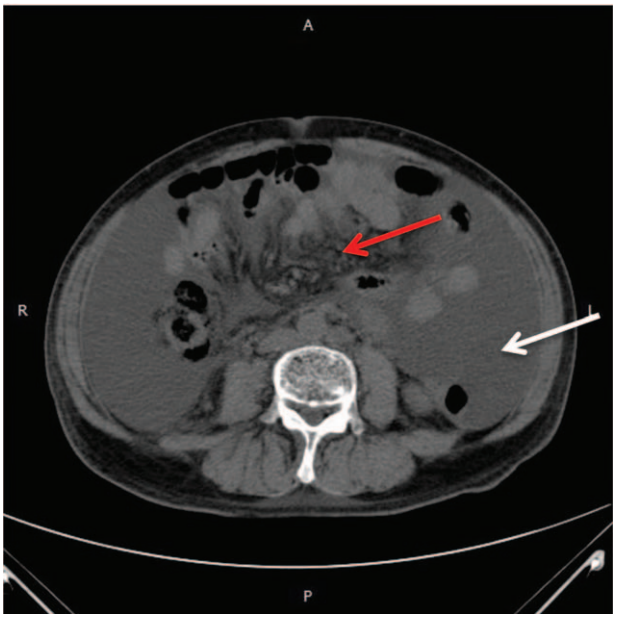

Figure 1. Massive ascites (white arrow) and Omental cake (red arrow).

Ascites cytology analysis suggested malignancy. The cells from the ascites were analyzed by immunohistochemistry stain (uroplakin) to identify the tumor origin (Figs. 6 and 7). The peritoneal metastasis from the bladder cancer was then confirmed. He was referred to the oncology department for further chemotherapy. Unfortunately, severe adverse effects, such as general weakness and vomiting, occurred after 2 doses of chemotherapy. The patient gave up further therapy and expired 1 month later after diagnosis.

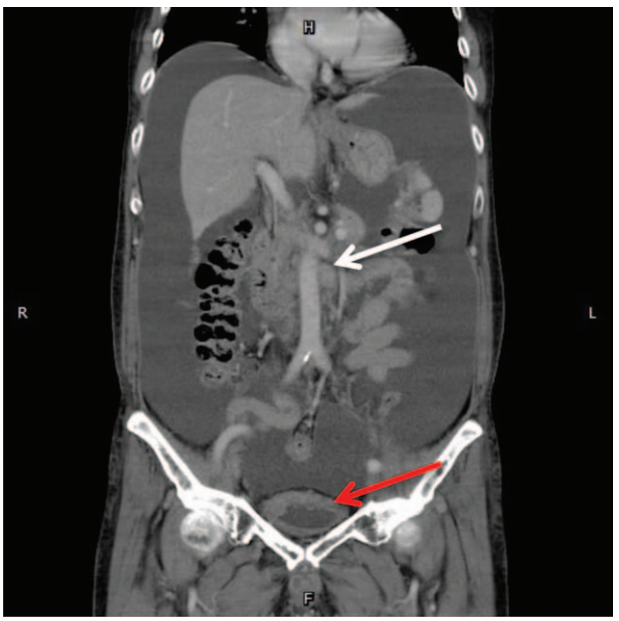

Figure 2. Enlarged nodes in the para-aortic space (white arrow) and diffuse irregular wall thickening of the urinary bladder (red arrow).

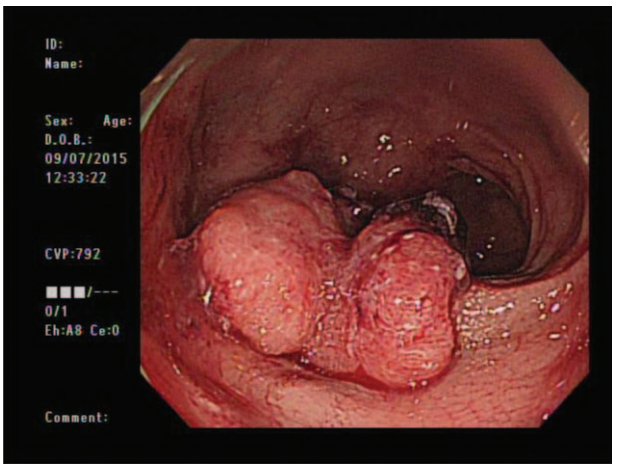

Figure 3. Colon tumor in size 3 cm over sigmoid colon.

Written informed consent to publish the case report was provided by the patient, and the consent procedure was approved by the Ethics Committee of Tri-Service General Hospital.

3. Discussion

A diagnosis of primary tumors which caused peritoneal carcinomatosis is challenging. Tumors causing peritoneal carcinomatosis are more commonly secondary malignancies, which include ovarian, gastrointestinal tumors, and uterine tumors; other tumors originating from lymphoma, lung, and breast; and unknown primary origin.[3] In this case, colon cancer and bladder cancer were both possible origin of the carcinomatosis.

Colorectal cancer usually causes peritoneal metastasis and omental cake in its late stages. The mechanism in gastrointestinal cancers is spontaneous exfoliation of tumor cells from cancers that have invaded the serosa, or iatrogenic or spontaneous perforation of the primary cancer. Our patient's CT imaging revealed no colon wall thickness and the colonoscopy showed a relative small tumor. Therefore, peritoneal metastasis from adenocarcinoma of colon was less likely on this patient.

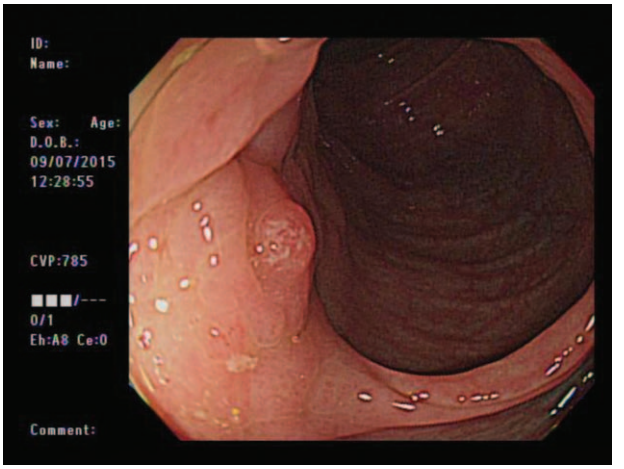

Figure 4. Small colon nodule looked like benign lesion (tubular adenoma).

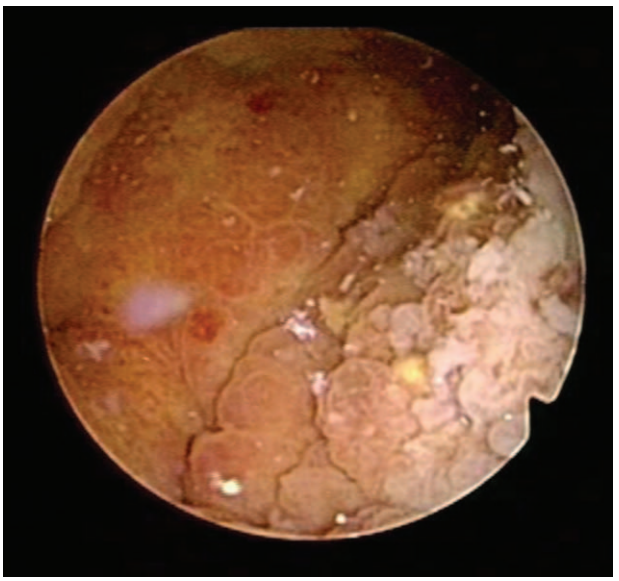

Figure 5. Cystoscopy revealed diffuse edematous nonpapillary tumor.

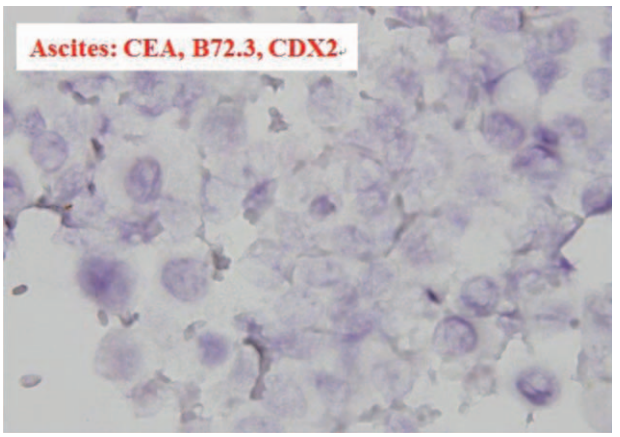

Figure 7. Immunohistochemical stains as carcinoembryonic antigen, B72.3, and CDX2 in tumor cell from ascites were negative.

More than 90% of bladder cancers are urothelial carcinomas. In recent years, several morphologic variants have been well documented and illustrated in the literature with descriptions of the utility of awareness of histologic variants. PUC is an aggressive type of bladder cancer, and characterized by the presence of tumor cells that resemble plasma cells. Its most common presenting symptom is hematuria, urinary frequency, and bladder discomfort.[4] However, there is an absence of gross hematuria until the late stages of the disease. A review of the published cases to date shows a mean age of 69 (range 46–87) years at diagnosis, with a 3:1 male-to-female predominance.[5] Under cystoscopy, the appearance of the tumor ranges from an induration or bolus lesion to a sessile or diffuse irregular mass. The plasmacytoid appearance of this tumor can lead to a diagnostic dilemma, especially in smaller biopsy samples. However, immunohistochemical studies can give us more information. Immunostaining shows positivity for cytokeratin antikeratin-1/antikeratin-3, cytokeratin-7, cytokeratin-20, GATA-3 (endothelial transcription factor), CD15, and p53. CD138 may be strongly positively stained. The tumor cells are stained negative for leukocyte common antigen, vimentin, multiple myeloma 1/interferon regulatory factor 4, and k and l light chains.[6–8]

The prognosis for patients with PUC is poor. Most patients had advanced disease upon presentation, and the aggressive behavior of this variant appeared to create an increased risk for intraperitoneal spread. Plasmacytoid variant histology is also associated with a 2-fold increased adjusted risk of all-cause

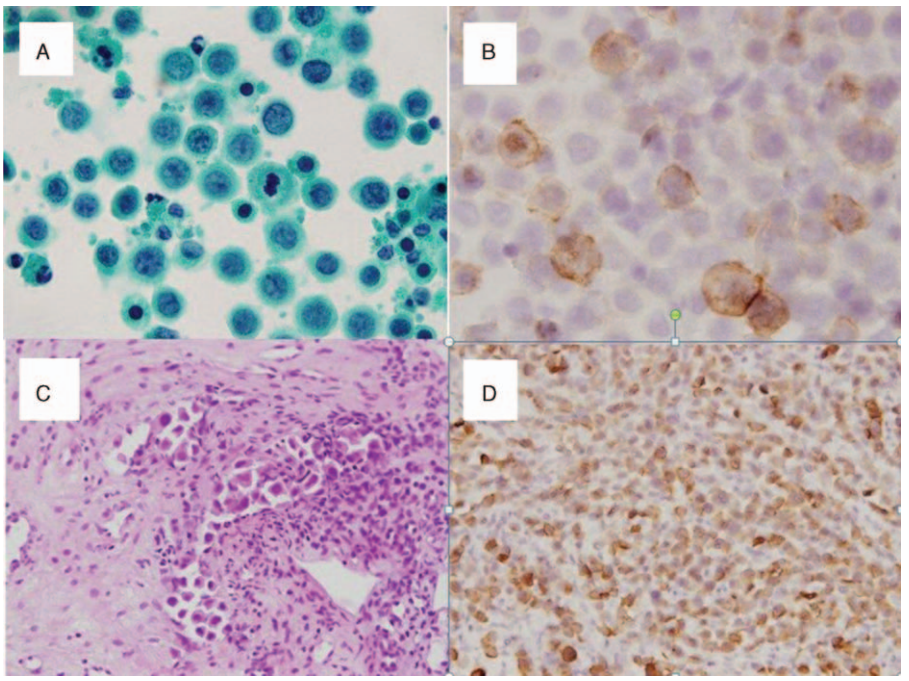

Figure 6. (A) Ascites cytology revealed many abnormal cells with higher nucleus-to-cytoplasm ratio and cytoplasmic vacuoles are noted. (B) Ascites cytology uroplakin stain positive. (C) Bladder biopsy revealed high-grade plasmacytoid urothelial carcinoma. (D) Bladder biopsy uroplakin positive.

mortality.[9] In the case series presented by Nigwekar et al,[4] no patient survived longer than 1 year. Due to its rarity, the standard treatment of patients with the PUC remains unknown. Radical cystectomy is the mainstay of treatment for muscle invasive, nonmetastatic urothelial carcinoma which may be applied to the PUC of bladder. Owing to the late presentations of metastasis, treatment for our patient is challenging although some reports have shown good responses to neoadjuvant chemotherapy with cisplatin-based regimen for short duration.[10]

4. Conclusions

In summary, this is a case of dual malignancy in a 74-year-old male presenting with massive ascites and bilateral lower legs edema. To identify of primary tumor with peritoneal carcinomatosis is a challenge to clinicians. Appropriate immunohistochemistry studies can help distinguish the tumor origin. PUC is considered a type of bladder cancer with aggressive biological behavior and poor prognosis. A significant percentage of patients with PUC had metastases at diagnosis. Early recognition of this type of tumor is important because of its aggressive behavior that demands a different therapeutic approach. Radical cystectomy is the mainstay of treatment for localized tumors and neoadjuvant chemotherapy may have some benefit. There is currently no standard treatment for patients with PUC in the late stage.

References

[1] Arrabal-Polo MA, del Carmen Cano-Garcia M, Fabiano P, et al. Perirectal recurrence and intraperitoneal dissemination of urothelial carcinoma as plasmacytoid variant: clinical-imaging-histological findings. Int Urol Nephrol 2015;47:1361–2.
[2] Velis JM, Barba JF, Tienza A, et al. Plasmacytoid variant of urothelial carcinoma: a case report. An Sist Sanit Navar 2013;36:357–61.
[3] Sangisetty SL, Miner TJ. Malignant ascites: a review of prognostic factors, pathophysiology and therapeutic measures. World J Gastrointest Surg 2012;4:87–95.
[4] Nigwekar P, Tamboli P, Amin MB, et al. Plasmacytoid urothelial carcinoma: detailed analysis of morphology with clinicopathologic correlation in 17 cases. Am J Surg Pathol 2009;33:417–24.
[5] Wang Z, Lu T, Du L, et al. Plasmacytoid urothelial carcinoma of the urinary bladder: a clinical pathological study and literature review. Int J Clin Exp Pathol 2012;5:601–8.
[6] Raspollini MR, Sardi I, Giunti L, et al. Plasmacytoid urothelial carcinoma of the urinary bladder: clinicopathologic, immunohistochemical, ultrastructural, and molecular analysis of a case series. Int J Cancer 2011;42:1149–58.
[7] Lopez-Beltran A, Requena MJ, Montironi R, et al. Plasmacytoid urothelial carcinoma of the bladder. Hum Pathol 2009;40:1023–8.
[8] Keck B, Stoehr R, Wach S, et al. The plasmacytoid carcinoma of the bladder—rare variant of aggressive urothelial carcinoma. Hum Pathol 2011;29:346–54.
[9] Kaimakliotis HZ, Monn MF, Cary KC, et al. Plasmacytoid variant urothelial bladder cancer: is it time to update the treatment paradigm? Urol Oncol 2014;32:833–8.
[10] Kohno T, Kitamura M, Akai H, et al. Plasmacytoid urothelial carcinoma of the bladder. Int J Urol 2006;13:485–6.