

Rectal constriction due to metastasis of urothelial carcinoma of the bladder: A case report

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ABSTRACT

Urothelial carcinoma (UC) of the bladder rarely causes rectal constriction. We report a case of UC of the bladder that metastasized to the perirectal tissues and caused rectal constriction. The patient was diagnosed with metastasis of UC upon performing a biopsy of the perirectal tissues. No malignant findings were observed in the rectal mucosa. A relatively good prognosis of 26 months was obtained through multidisciplinary treatment combining surgery and chemotherapy. In cases of rectal constriction secondary to high-grade UC of the bladder, the possibility of metastasis of UC should be considered.

1. Introduction

Urothelial carcinoma (UC) of the bladder usually metastasizes to the lymph nodes, liver, lungs, and bones.¹ However, metastasis of UC to the rectal and perirectal tissues is very rare. In this study, we report a case in which UC of the bladder metastasized to the perirectal tissues, resulting in rectal constriction.

2. Case presentation

A 66-year-old man underwent transurethral resection of bladder tumor (TURBT) for a cT3N0M0 bladder cancer (BC) arising on the right ureteral orifice at another hospital. Pathological examination resulted in the diagnosis of invasive UC. After three courses of gemcitabine plus cisplatin (GC) as neoadjuvant chemotherapy, the patient underwent radical cystectomy (RC) with ileal neobladder reconstruction. Pathological examination revealed ypT3bN0 UC with a negative margin. The patient developed symptoms of anal pain and inability to defecate during the postoperative period. Subsequent computed tomography (CT) revealed perirectal tissue thickening and rectal constriction (Fig. 1), whereas colonoscopy (CS) revealed only inflammation in the rectal mucosa. Before RC, the patient had no symptoms related to defecation, and there were no abnormal findings in perirectal tissue on CT scan. Although a rectal mucosal biopsy revealed no malignant findings, a needle biopsy of the perirectal tissue revealed malignant tissue.

Therefore, the patient was referred to the Department of Colorectal Surgery at our hospital and underwent rectal and ileal neobladder resection 17 months after RC. Pathological examination resulted in the diagnosis of metastasis of UC (Fig. 2). At that point, the patient was referred to our department and was treated with four courses of GC and three courses of pembrolizumab as systemic chemotherapy. However, the disease had progressed and the patient passed away 26 months after the appearance of rectal constriction.

3. Discussion

Only 10 cases have been reported in which UC of the bladder metastasized to the perirectal tissues causing rectal constriction (Table 1). The common features of these cases are male, high pathological grade and cancer stage, and poor prognosis. Similar characteristics observed in this case report which suggest that aggressive UC may cause rectal constriction. A rectal mucosal biopsy did not show any malignant findings, whereas a needle biopsy of the perirectal tissue led to the diagnosis of metastasis of UC. We regard these findings as a typical presentation of perirectal tissue metastasis of UC.

The mechanism of UC-related rectal constriction remains unclear. Stillwell et al. hypothesized that cancer cells in the bladder neck or triangle may break through the Denonvilliers' fascia and extend around the rectum.² Langenstroer et al. suggested that the surgical deposition of cancer cells may be the cause of rectal constriction.³ Moreover,

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Fig. 1. Diagnostic images of rectal constriction in UC of the bladder. Axial computed tomography (CT) scan showing thickening of the perirectal tissue (area with green arrow head). (For interpretation of the references to colour in this figure legend, the reader is referred to the Web version of this article.)

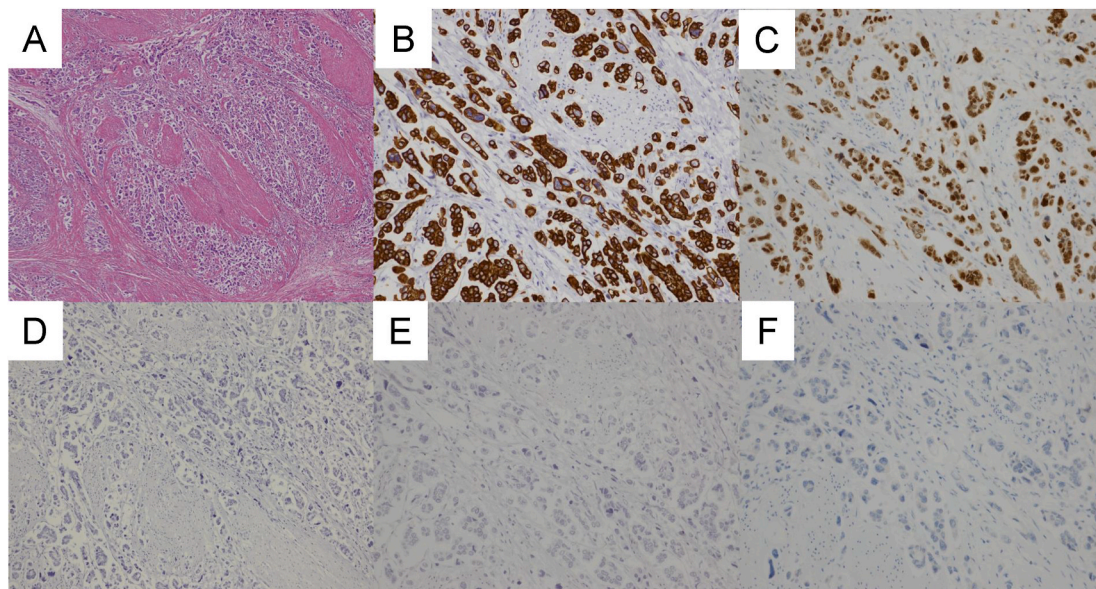


Fig. 2. HE staining showing an invasive pattern (A). Immunohistochemical staining showed positive results for CK7 (B) and GATA3 (C) and negative results for CK20 (D), p63 (E), and CDX2 (F).

Kobayashi et al. hypothesized that UC may metastasize to the perirectal tissues lymphatically through the lateral pedicle, which appeared thickened on CT scan.⁴ Although there were no obvious findings of bladder perforation at the time of TURBT, there is a possibility of surgical deposition during radical cystectomy as pointed by Langenstroer et al. In addition, this case presented a primary lesion of UC of the bladder arising on the right ureteral orifice, which is similar to the hypotheses of Stillwell et al. and Kobayashi et al. However, CT scan of the case in this report did not reveal thickening of the lateral pedicle, as the findings of Kobayashi et al.

A poor prognosis of less than 1 year has been consistently reported in patients with UC of the bladder who developed rectal constriction (Table 1). However, the patient in this report survived 26 months after the appearance of rectal constriction. The reason for a relatively good prognosis may be the multidisciplinary treatment combining surgery and systematic chemotherapy for lesion that clinically metastasized only

perirectal tissue. If the needle biopsy of the perirectal tissue revealed metastasis of UC, we could have discussed the option of prior systemic chemotherapy instead of surgery.

UC of the bladder with rectal constriction is considered a highly active cancer compared with other BCs. Recently, the classification of subtypes using genetic biomarkers in muscle-layer invasive BC has been reported and is expected to contribute to treatment strategies.⁵ Personalized therapy based on genetic profiling may further contribute to the improvement of prognosis in highly active BC.

4. Conclusion

This report demonstrates that UC of the bladder may metastasize to the perirectal tissue and cause subsequent rectal constriction. In cases of rectal constriction secondary to high-grade UC of the bladder, the possibility of metastasis of UC should be considered. If the patient's

Table 1

Summary of cases of urothelial carcinoma of bladder that metastasized to the perirectal tissues and resulted in rectal constriction.

Report	Age	Sex	Grade	Primary treatment	Pathological findings	Duration to rectal constriction (month) ^a	Treatment after the appearance of rectal constriction	Prognosis (month) ^b
Stillwell et al. (1989)	60	Male	G3	VP-16, cisplatin, radiation	NA	Coincidental	NA	9
Langenstroer et al. (1996)	58	Male	G3	Partial cystectomy	pT2	NA	NA	3
	73	Male	G3	Cystectomy	pT3a with signet ring cell	18	None	2
Kobayashi et al. (2006)	76	Male	G3	Immunotherapy	NA	1	Immunotherapy	5
	66	Male	G3	Cystectomy	NA	Coincidental	None	3
	51	Male	G3	MVAC	NA	1	Chemotherapy	9
Ito et al. (2008)	74	Male	G3	Cystectomy	pT3a	11	Chemoradiotherapy	7
Katayama et al. (2010)	64	Male	G3	Cystectomy	pT3a with signet ring cell	16	MVAC	2
Takeushi et al. (2016)	69	Male	G2	TURBT	cT3a with glandular differentiation	Coincidental	GC	NA
Liu et al. (2021)	60	Male	HG	TURBT	cT4 with plasmacytoid variant	Coincidental	NA	NA
Present case	66	Male	NA	Cystectomy	pT3b	7	Operation ^c + Chemotherapy	26

NA: not available, VP-16: etoposide, MVAC: methotrexate + vinblastine + doxorubicin + cisplatin, TURBT: transurethral resection of a bladder tumor, GC: gemcitabine + cisplatin.

^a Duration from the diagnosis of urothelial carcinoma (UC) of the bladder to the detection of rectal ring constriction.

^b Prognosis counts from the onset of rectal ring constriction.

^c Rectal and ileal neobladder resection.

condition is acceptable, multidisciplinary treatment, including surgery and chemotherapy, might be considered as a therapeutic option for longer prognosis.

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