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Oncology

Case report: A rare case of extravesical, extraperitoneal metastasis after transuretheral resection of urothelial carcinoma

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ABSTRACT

Bladder perforation secondary to transurethral resection of bladder tumour (TURBT) increases the risk of tumour cell seeding and eventual extravesical metastasis. Here we presented a case where a patient with localised bladder tumour was initially managed with repeated TURBTs for tumour recurrence. Subsequently he was found to have extravesical pelvic metastasis. This was likely secondary to microperforation of bladder and tumour cell seeding. Microscopic bladder perforation is difficult to diagnose. However patients with confirmed bladder perforation during TURBT would justify systemic radiological cancer surveillance in view of higher risk of metastatic disease.

Introduction

Transurethral resection of bladder tumour (TURBT) remains the treatment of choice for most non-muscle invasive urothelial carcinoma.[1] This procedure is associated with low incidence of complications, with bleeding and bladder perforation being the commonest complications.[2] Although rare, bladder perforation increases the risk of tumour cell seeding and eventual extravesical recurrence/metastasis.[3] This makes cancer surveillance more difficult as it involves cystoscopy only following TURBT but not pelvic imaging. Here, we present a rare case of large bowel obstruction secondary to pelvic extravesical metastasis of urothelial cancer most likely due to microperforation associated with TURBT.

Case summary

A 84 year-old man presented with gross painless haematuria in 2015. Flexible cystoscopy revealed multiple papillary lesions at the dome and lateral walls of the bladder. He underwent transurethral resection and histology revealed low grade non-muscle invasive papillary urothelial carcinoma. His surveillance flexible cystoscopy showed multiple recurrences in 2016 and 2017 and he underwent further transurethral resections. He was then managed with regular intravesical Mitomycin starting from 2017.

He developed symptoms of increasing constipation and per-rectal bleeding since the end of 2018. Lower gastrointestinal endoscopy completed to splenic flexure showed no intraluminal colonic or rectal pathology but only external compression at the rectum 5cm from anal verge. CT scan showed complex multicystic perirectal lesion compressing the rectum (Fig. 1), and this was FDG avid on PET CT. The urinary bladder appeared normal. Flexible cystoscopy revealed multiple scars in the bladder, an otherwise normal bladder without evidence of local recurrence.

In view of his symptoms of bowel obstruction, he underwent diagnostic laparoscopy and diverting colostomy. The laparoscopy revealed pelvic extraperitoneal solid-cystic mass at the left side of the pelvis compressing on the rectum (Fig. 2a). The mass was completely isolated anatomically from the bladder. Needle aspiration of the cyst revealed haemorrhagic fluid. Opening of cyst wall revealed friable tissue within with contact bleeding (Fig. 2b). Other intraperitoneal organs were normal. Biopsies from the cyst wall and the mass within were sent. Loop sigmoid colostomy was matured at the left iliac fossa.

Histopathology examination of the biopsy showed low grade urothelial carcinoma (Fig. 3). Patient declined chemoradiation or any further surgical intervention and opted for symptomatic and best supportive care.

Discussion

Bladder perforation is a known complication of transurethral

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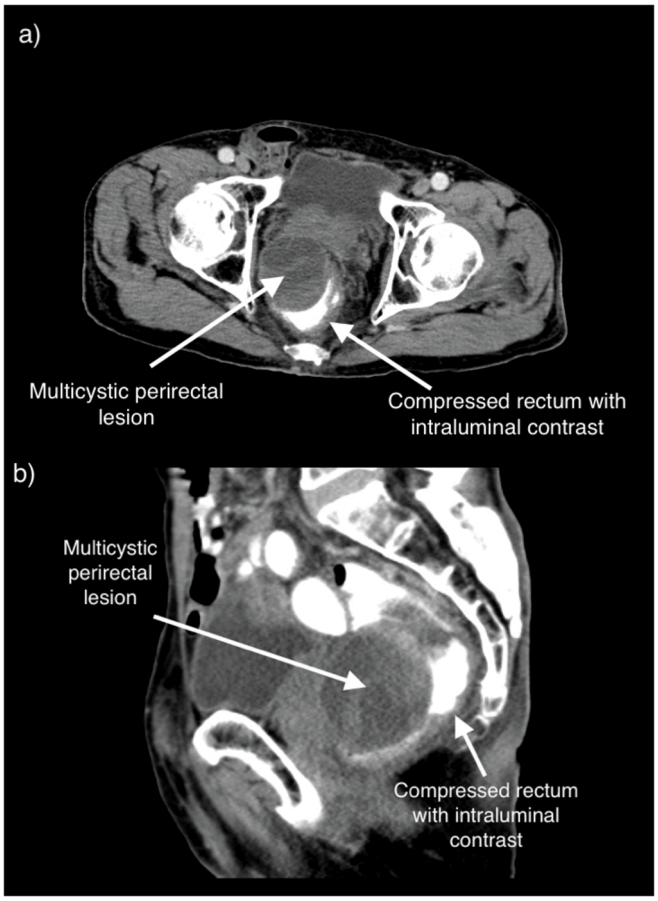

Fig. 1. (a) Axial and (b) Sagittal view on CT scan showed external compression of low rectum by a large multi-cystic perirectal lesion.

resection of bladder tumour. Due to its rarity, there is paucity of evidence regarding its real incidence. Several published papers attempted to investigate its incidence and clinical implications, but are mainly limited to retrospective studies with many confounding factors.[2,3] The reported bladder perforation incidence ranges from 0.3% to 1.3% with varying incidence of extravesical metastatic disease.[2,3] Although they were concluded from large series, these numbers may have underestimated the real incidence of bladder perforation because there were many occult extraperitoneal perforation that had gone undiagnosed clinically. Nonetheless, the available evidence has shown bladder perforation leads to poorer cancer prognosis.

In this patient, we believe that there might have been extraperitoneal bladder microperforation during transurethral resection. This was made more likely given the fact that he had repeated TURBTs due to local recurrence. His presentation was unusual and this was diagnosed only when the metastatic disease has caused obstruction to the rectum. There are limited numbers of case reports in the literature reported on intraperitoneal bladder perforation during transurethral resection of bladder tumour with eventual intraperitoneal extravesical metastasis of urothelial carcinoma.[3–5] To date, in the literature, only Kang et al.[5] has reported a similar case of extraperitoneal metastasis following TURBT.

Given that the histology from the pelvic mass showed low grade urothelial carcinoma and similar to the histology from previous TURP, the differential diagnosis of bladder diverticular tumour or urachal cyst tumour were also initially considered for our case. However, the patient has had multiple cystoscopies previously which did not show any evidence of bladder diverticulum. Likewise, the CT scan did not show any evidence of bladder diverticulum or urachal cyst tumour. The laparoscopy on this patient had further excluded the possibility of urachal tumour or bladder diverticular tumour, that the pelvic perirectal mass situated in the pelvis extraperitoneally had no connection to the bladder. Urachal tumour typically opens to the dome of the bladder, and bladder diverticular tumour typically 'attach' to the bladder, but in our case, the pelvic tumour was seen with no relationship to the bladder anatomically. Our case was also discussed in our multidisciplinary tumour board meeting (MDT) which was attended by the panel experts including colorectal surgeons, urologist, radiologists and pathologists. It was agreed uniformly that based on the clinical, radiological, cystocopic, laparoscopic and pathological findings all taken into consideration, the most possible and confident diagnosis for our patient's presentation was extravesical, extraperitoneal metastasis of bladder tumour due to microperforation during TURP.

Asymptomatic microperforation of bladder during TURBT is difficult to diagnose clinically. This rare complication however, may pose a significant risk of extravesical bladder cancer cell dissemination resulting in metastatic disease. In these patients, regular cancer surveillance with cystoscopy only may not be sufficient. Therefore, a high clinical suspicion of bladder perforation is required during TURBT. On the other hand, patients with confirmed bladder perforation during TURBT would justify systemic radiological cancer surveillance in view of higher risk of metastatic disease.

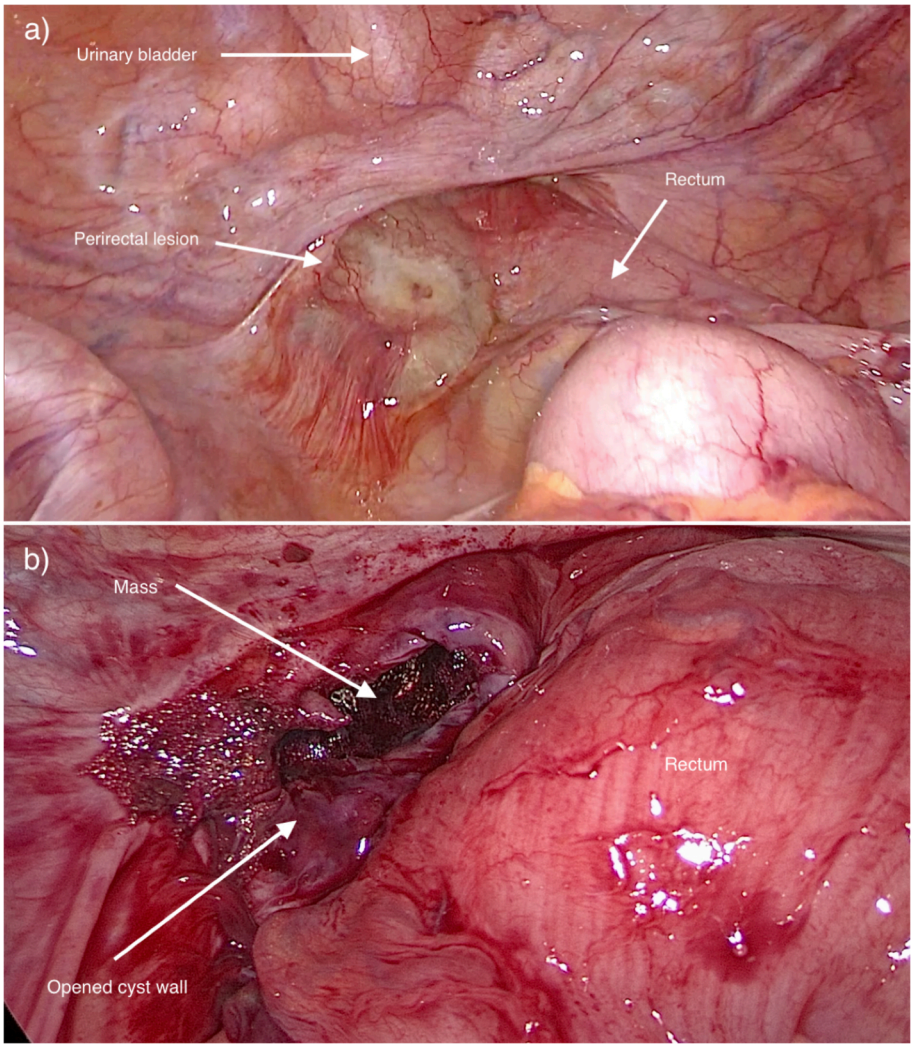

Fig. 2. (a) Laparoscopy revealed pelvic extraperitoneal solid-cystic mass at the left side of the pelvis compressing on the rectum. (b) Opening of cyst wall revealed friable tissue within with contact bleeding.

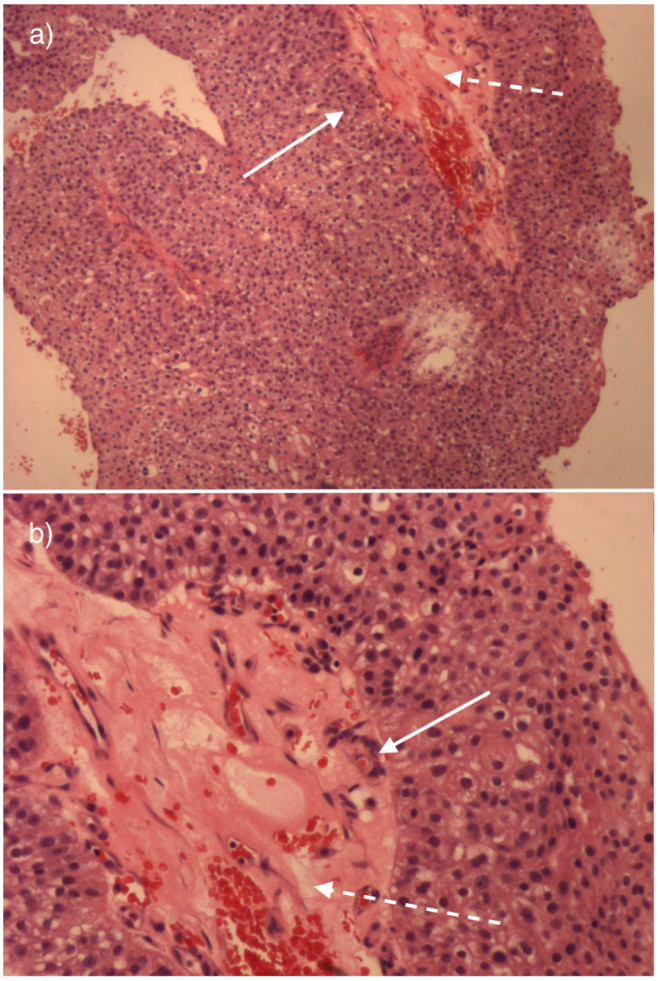

Fig. 3. (a) Clusters of urothelial cells with increased cell layering [solid arrow] with central fibrovascular cores [dotted arrow]. (b) Strips of urothelial cells with increased layering and nuclear atypia [solid arrow] and central fibrovascular cores [dotted arrow].

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