may close with conservative treatment, those caused by radiation toxicity invariably do not and require definitive repair (Hanna et al, 2014). Surgery is often technically challenging as a result of obliteration of the natural tissue planes and fibrosis from radiation (Muñoz et al, 1998). The wide variety of procedures described for surgical repair of rectourethral fistulas in previously irradiated fields is testament to these difficulties and the high recurrence rate following intervention (Hanna et al, 2014). The surgical methods described include transabdominal, transperineal, trans-sphincteric and transanal approaches with or without tissue interposition flaps (Hechenbleikner et al, 2013). The use of interposition muscle flaps between the urethra and rectum has produced 84% closure rates in radiated patients (Vanni et al, 2010).

To the best of the authors' knowledge this is the first reported case of a rectourethral fistula occurring after combined treatment for rectal cancer followed by transurethral resection of the prostate. Despite the modest amount of tissue resected at the time of transurethral resection of the prostate, presumably an irradiated area of prostato-rectal septum fistulated with a delayed diathermy injury. It is likely that the history of en-bloc resection of seminal vesicles at the time of his ultra low anterior resection reduced the anatomical space between the bladder neck and rectum contributing to fistula formation. **BJHM**

LEARNING POINTS

- Iatrogenic rectourethral fistulas are a rare but devastating complication following surgery or radiation therapy for pelvic malignancy.
- A rectourethral fistula can develop as a late complication in previously irradiated fields.
- To minimize complications surgeons need to appreciate the extent of resection from previous surgeries when planning future procedures.

Davis JW, Schellhammer PF. Prostatorectal fistula 14 years following brachytherapy for prostate cancer. J Urol. 2001 Jan;165(1):189. https://doi.org/10.1097/00005392-200101000-00051

Hanna JM, Turley R, Castleberry A, Hopkins T, Peterson AC, Mantyh C, Migaly J. Surgical management of complex rectourethral fistulas in irradiated and nonirradiated patients. Dis Colon Rectum. 2014 Sep;57(9):1105–1112. https://doi.org/10.1097/DCR.0000000000000175

Hechenbleikner EM, Buckley JC, Wick EC. Acquired rectourethral fistulas in adults: a systematic review of surgical repair techniques and outcomes. Dis Colon Rectum. 2013 Mar;56(3):374–383. https://doi.org/10.1097/DCR.0b013e318274dc87

Muñoz M, Nelson H, Harrington J, Tsiotos G, Devine R, Engen D. Management of acquired rectourinary fistulas. Dis Colon Rectum. 1998 Oct;41(10):1230–1238. https://doi.org/10.1007/BF02258219

Vanni AJ, Buckley JC, Zinman LN. Management of surgical and radiation induced rectourethral fistulas with an interposition muscle flap and selective buccal mucosal onlay graft. J Urol. 2010 Dec;184(6):2400–2404. https://doi.org/10.1016/j.juro.2010.08.004

A rare complication of ureteral stent insertion

A 78-year-old man presented with miction pain, frequency, urgency, hesitancy, weak urine stream and terminal dribbling for 1 week before admission. On physical examination, he exhibited knocking tenderness over his left flank. Urine examination revealed microscopic haematuria and pyuria. Ultrasonography revealed left renal stones and hydronephrosis, and a 1.5 cm-diameter stone in the left lower ureter.

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Ureteroscopy was performed to remove the ureteral stone, and a papillary lesion was also observed with a high tendency to bleeding in the left ureter. A ureteral stent was inserted to protect the ureter from spasm or collapse and prevent further obstruction. However, unusual gross haematuria occurred immediately after the procedure, and abdominal computed tomography revealed that the ureteral stent had been inserted into the common iliac artery creating a ureteroarterial fistula (*Figure 1*). The ureteral stent was removed and a common iliac artery–external iliac artery stent applied to cover the vascular defeat. The patient made an uneventful recovery and urine cytology confirmed the diagnosis of urethral transitional cell carcinoma.

Insertion of a ureteral stent is associated with complications such as dislocation, infection, blockage, and rarely a ureteroarterial fistula. Typically, ureteroarterial fistulas can be classified into primary (10–15%), secondary (iatrogenic, 85%) and pregnancy-related (<5%). Secondary ureteroarterial fistulas are predominant and often associated with pelvic surgery for malignancy, vascular surgery with synthetic grafting, irradiation, and prolonged ureteral stenting. Endovascular stenting has emerged as an effective alternative to open surgical closure of the defect. **BJHM**

Figure 1. Abdominal computed tomography scan revealed hydroureter (arrow head) and the ureteroarterial fistula (arrow).