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Vesicocutaneous fistula presenting as a thigh abscess

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ABSTRACT

An abscess of the thigh may be a sign of tracking intra-abdominal pathology, often from the gastrointestinal tract. Less frequently this can arise from the bladder, usually after a history of surgical intervention, radiotherapy or pelvic trauma. This case describes a patient with a history of bladder cancer who developed a bladder perforation communicating with the thigh which presented as an abscess. Incision and drainage was atypical with clear, odourless fluid drained. CT scan and retrograde cystogram confirmed bladder perforation and vesicocutaneous fistula. They later developed a rectal perforation secondary to the pelvic urinoma.

1. Introduction

An abscess of the thigh may be the first sign of tracking intra-abdominal pathology, usually from the gastrointestinal tract such as in diverticulitis or colorectal cancer.[1] Less frequently this can arise from the bladder, usually after a history of surgical intervention to the area or pelvic trauma. This case describes a patient with a history of bladder cancer who developed a bladder perforation communicating with the thigh which presented acutely as a suspected abscess.

2. Case

A 57-year-old patient presented with an abscess to the left posterior thigh. They had a history of high-grade non-muscle invasive transitional cell carcinoma of the bladder diagnosed 15 years ago and treated with Bacillus Calmette-Guerin (BCG) therapy. He had no recurrence until 2019 where a small superficial papillary tumour was found on the left lateral wall and treated with transurethral resection (TURBT) and intravesical Mitomycin-C, histologically G2pTa. Since then, he had been troubled by lower urinary tract symptoms and had a period of intermittent self-catheterisation for high post-void residual volumes however found this unacceptable in the long-term. Otherwise their past medical history included previous alcohol excess and depression. He underwent incision and drainage of the abscess where 200mls of watery fluid was drained and he was discharged to community follow-up.

The patient was re-admitted three days later with large amounts of watery odourless discharge from the thigh wound. Their observations were normal and inflammatory markers were minimally raised with a white cell count of 12.3×10^9/l and their renal function was at baseline with a creatinine of 55 μmol/l. A CT scan of the abdomen and pelvis showed a large fluid collection in the left hemi-pelvis extending into the left thigh and gluteal region and a distended bladder with a suspected perforation on the left lateral wall (Fig. 1). Biochemical analysis of the wound exudate confirmed it to be urine. This was further evaluated by retrograde cystogram showing a large extraperitoneal perforation (Fig. 2). There was no evidence of recurrence of bladder cancer on cross-sectional imaging although direct visualisation by cystoscopy was not undertaken.

After urethral catheterisation the discharge from the wound reduced significantly. As the patient's symptoms were improving and they were not keen on surgical intervention at this stage a decision was made for conservative management with repeat cystogram rather than open repair of the bladder perforation. Despite their age the patient was significantly frail, underweight with a BMI of 19 kg/m^2 and had a poor exercise-tolerance. Unfortunately, the patient had multiple re-admissions with electrolyte disturbances, increased fistula output and progressive frailty. A repeat CT a month later showed a smaller but persistent pelvic urinoma but also raised concerns for a rectal perforation adjacent to it which was confirmed on CT with rectal contrast. The patient was reluctant to have any form of surgical intervention and defunctioning stoma formation was unacceptable to him although was agreeable to bilateral nephrostomy insertion for urinary diversion. This improved the fistula output however the patient continued to decline and eventually was transferred to a hospice setting for palliative care.

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Fig. 1. CT scan showing a collection in the left hemi-pelvis tracking into the posterior thigh. The bladder perforation is visible on the left lateral wall.

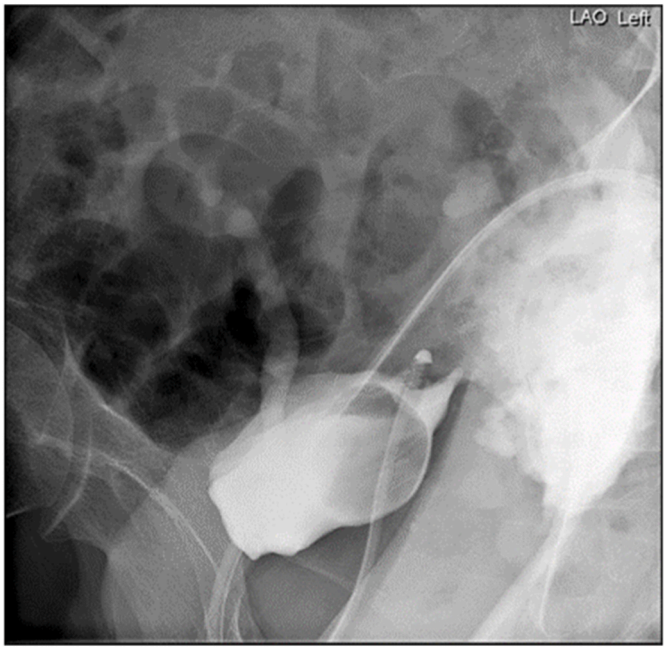

Fig. 2. Retrograde cystogram via urethral catheter showing a large extraperitoneal perforation of the bladder on the left-lateral wall.

3. Discussion

The presentation of a suspected thigh abscess which required incision and drainage secondary to a vesicocutaneous fistula is extremely rare, particularly due to a perforation of the bladder. In this case the history of bladder cancer and TURBT two years ago in a similar anatomical location to the site of the perforation suggests a relation.

A literature review identified other cases of vesicocutaneous fistula presenting as a thigh abscess. *Banihani* et al.[2] describe a 90-year-old patient who developed an abscess to the left thigh due to vesicocutaneous fistula two years after a road traffic accident sustaining pelvic fractures and a bladder injury requiring open repair. Incision and drainage was not typical and persistent fluid leakage was noted post-operatively. He was treated with suprapubic catheterisation and was found to have a urethral stricture managed by optical urethrotomy. Follow-up imaging demonstrated closure of the fistula and open repair was not necessary.

Yin et al.[3] report the case of a 71-year-old patient with a history of radical prostatectomy and subsequent pelvic radiotherapy requiring intermittent self-catheterisation presenting with an abscess to the left thigh. Similarly, copious watery discharge was noted at incision and drainage which prompted further investigation. The patient underwent bilateral nephrostomies for urinary diversion and the fistula healed successfully with conservative management.

The more common presentation of a vesicocutaneous fistula is with persistent watery discharge rather than by formation of a fluctuant swelling mistaken for an abscess. This can occur around the suprapubic region, groin, thighs and buttocks and is seen typically in non-healing supra-pubic catheter tracts. Other causes of this are wide ranging and include previous trauma and pelvic fracture, bladder calculi, pelvic surgery including hip arthroplasty, and radiotherapy for pelvic malignancy.[2–5]

Diversion of the flow of urine to decompress the hydrostatic pressure of the bladder is key in the initial management of extraperitoneal bladder perforation and vesicocutaneous fistula. This can be facilitated through either catheterisation or bilateral nephrostomy insertion. Cases from the literature show that conservative management of complicated bladder perforations can be successful however unfortunately this was not the case in this patient. His poor nutritional status and frailty may have contributed to the lack of tissue healing and persistent fistula. The development of a rectal perforation is rare and indicates the need for bowel defunctioning however was against the patient's wishes. Lack of improvement with urinary diversion, the presence of malignancy or infection and a chronic, well-epithelialized tract may make necessitate operative intervention. Similar cases have been described with successful surgical treatmen.

4. Conclusion

This case describes an extremely rare complication of bladder rupture and highlights how a suspected abscess of the thigh can be the first presentation of more complex pathology. The presence of large volumes of non-purulent watery discharge should alert the surgeon to the possibility of vesicocutaneous fistula, particularly when the patient has a history of trauma or surgical intervention to the pelvis. Rectal perforation is a late complication. This case presented challenges due to the patient's reluctance to proceed with surgical intervention as a definitive treatment however ultimately must be respected.

Consent

Written consent for publication was obtained from the patient.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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