CASE REPORT

Colovesical fistula presenting with epididymitis

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Dr Matthew Arneill,
marneill01@qub.ac.uk**SUMMARY**

This article reports a case of colovesical fistula presenting with epididymitis. A 75-year-old man with a recent conservatively managed localised diverticular perforation presented to hospital with acute pain and swelling of his left testicle and epididymis. On further questioning, the patient reported passing air in his urine. Urine cultures grew *Enterococcus faecalis*. Ultrasound scan confirmed a diagnosis of bacterial epididymitis and the patient was treated with intravenous antibiotics. Subsequent CT imaging revealed air in the bladder and a colovesical fistula. The patient went on to have Hartmann's procedure with repair of the bladder defect. This case highlights that: (1) Colovesical fistulae may rarely present with epididymitis. (2) Colovesical fistulae are the most common cause of pneumaturia.

BACKGROUND

This case demonstrates that patients with a colovesical fistula may initially present with epididymitis. In any patient presenting with epididymitis, a full genitourinary, gastrointestinal and sexual history should be sought to identify the likely aetiology. Rarer fistulae must be considered as a potential cause.

CASE PRESENTATION

A 75-year-old man was admitted to a hospital with acute pain and swelling of his left testicle and epididymis. He described lower urinary tract symptoms including dysuria and suprapubic pain. On further questioning, he complained of passing some bubbles in his urine. Medical history included a 5.9 cm abdominal aortic aneurysm and diverticular disease. The patient was recently an inpatient being managed conservatively for a localised diverticular perforation of the sigmoid colon.

On examination, the patient was in pain and had a fever (38° C). His abdomen was soft and non-tender with no scars noted. His left epididymis and testicle were extremely tender and swollen. Digital rectal examination was normal.

INVESTIGATIONS

The patient's white cell count ($24.3 \times 10^9/L$) and C reactive protein (262 mg/L) were elevated. Urine cultures grew *Enterococcus faecalis*, bacteria typically found in the bowel flora.

A testes ultrasound confirmed the diagnosis of epididymitis.

A CT abdomen/pelvis scan with rectal contrast was performed, which demonstrated air within the bladder and a colovesical fistula (figures 1–3).

DIFFERENTIAL DIAGNOSIS

A diagnosis of acute bacterial epididymitis was made. The differential diagnosis of pneumaturia included enterovesical fistula, gas producing organisms, including *Clostridium* species and yeast and commonly recent urinary tract instrumentation.

TREATMENT

The patient was commenced on intravenous piperacillin/tazobactam 4.5 g three times a day and completed 4 days as an inpatient, followed by a further 10-day course of oral co-amoxiclav 625 mg three times a day after discharge.

OUTCOME AND FOLLOW-UP

This patient improved with 4 days of intravenous piperacillin/tazobactam 4.5 g three times a day. Although his C reactive protein remained high initially, he clinically improved with reduced swelling of the epididymis and no further temperature spikes. After 4 days, he was switched to a 10-day course of oral co-amoxiclav 625 mg three times a day and discharged from the urology ward. The epididymitis resolved. Prior to discharge, the patient was reviewed by the surgical consultant who managed his recent admission with diverticulitis. An outpatient appointment was arranged to discuss future surgical intervention. The patient underwent a Hartmann's procedure with repair of the bladder defect. An abscess was present at the time of surgery; therefore, primary anastomosis was decided against due to the risk of anastomotic leak in the presence of sepsis. Recovery was delayed by superficial wound breakdown and the patient spent 2 weeks as an inpatient. He was discharged with district nursing input in place to manage his granulating wound. The patient was subsequently reviewed at the Vascular Outpatient clinic regarding his 5.9 cm abdominal aortic aneurysm and is currently awaiting endovascular aortic aneurysm repair (EVAR). He will be reviewed following EVAR to discuss the option of reversal of Hartmann's procedure should he so wish.

DISCUSSION

Epididymitis is recognised as a rare presenting complaint of colovesical fistula.

A similar case was reported by O'Brien and Lynch¹. A case of direct seminal vesicle fistula, caused by sigmoid diverticulitis and resulting in long-term symptoms of bladder irritability and an emphysematous epididymitis, has been reported.² Interestingly, a case of urethritis secondary to a colovesical fistula has also been described.³

The presenting symptoms and signs of colovesical fistula occur primarily in the urinary tract. The

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Figure 1 Air in the bladder demonstrated on CT.

symptoms include suprapubic pain, irritative voiding symptoms, malodorous urine, pneumaturia, faecaluria or, as in this case, epididymitis. The mechanism of infection in epididymitis is believed to be the retrograde passage of bacteria from the prostatic urethra to the epididymis via the ejaculatory ducts and vas deferens.

Signs of colovesical fistulae include abnormal urinalysis findings, urinary tract infection (UTI) and debris in the urine.⁴

The symptoms of pneumaturia and faecaluria must be actively sought in the history as these may occur intermittently. The frequency of pneumaturia is approximately 50% and that of faecaluria 40%. Faecaluria is pathognomonic of enterovesical fistula. Flow through the fistula is predominantly from the bowel to the bladder, although rarely, urine can pass into the bowel.⁵

The combination of suprapubic pain, frequency, dysuria and tenesmus, in association with a colovesical fistula, has been described as Gouverneur's syndrome.⁶

This patient had a colovesical fistula which developed secondary to diverticular disease. He had a recent admission with acute diverticulitis resulting in a localised perforation of the sigmoid colon. On direct questioning, the patient also reported pneumaturia. Pneumaturia may be caused by a number of processes; however,

the most common cause is a colovesical fistula. Gas producing organisms, including *Clostridium* species and yeast, may cause pneumaturia. Diabetes mellitus and obstructive uropathy are the most common predisposing factors.⁷ Pneumaturia may also be a consequence of undergoing urinary tract instrumentation.⁴

It is difficult to calculate the relative frequency of enterovesical fistula, mainly due to the multiple potential aetiologies.

Enterovesical fistula may be caused by a number of processes. These can be broadly divided into three main groups: inflammatory causes, malignant and iatrogenic. Of the inflammatory causes, diverticulitis accounts for approximately 50–60% of fistulae, the majority colovesical.^{8–9} Crohn's disease accounts for 10% and is the most common cause of an enterovesical fistula.

Rectovesical fistula is the most common malignant presentation, with rectal carcinoma being the most common colonic malignancy resulting in fistula formation.⁵

Overall, in terms of location along the bowel, colovesical fistulae are the most common type of fistulous communication between the urinary bladder and the bowel.⁴

Colovesical and enterovesical fistulae should be repaired in suitable patients with abdominal pain, dysuria, malodorous urine, incontinence, urinary outlet obstruction, recurrent UTIs

Figure 2 Colovesical fistula demonstrated on CT.

Figure 3 Fistula, bladder and sigmoid colon identified.

or sepsis. Resection and primary anastomosis of the diseased bowel is the treatment of choice for colovesical fistulae.¹⁰

Complications include recurrence of fistula and the rate may be as high as 11%. Patients at a higher risk of recurrence include those requiring advanced bladder repair, those with a history of previous radiotherapy or complex fistulae and those whose fistulas involve the urethra.¹¹

Patients at high surgical risk may be treated with medical therapy and catheter drainage. Long-term antibiotic therapy may offer symptomatic relief. Immunosuppressive agents used for fistula closure have demonstrated good results in the inflammatory setting.¹² If symptoms persist and are intolerable, diverting surgery may ultimately be required. Patients with terminal cancer are often better treated conservatively or with simple diversions.

Learning points

- ▶ Colovesical fistulae may rarely present with epididymitis.
- ▶ Always suspect colovesical fistula if epididymitis is associated with pneumaturia, recurrent urinary tract infections or faecaluria.
- ▶ Diverticular disease of the colon is the most frequent cause of colovesical fistulae.

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