

Fecal Fistula Communicating with a Femur Shaft Fracture Secondary to a Malpositioned Suprapubic Catheter: A Case Report

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Conflict of interest: None declared

Patient: Male, 18
Final Diagnosis: Fecal fistula communicating with fracture shaft femur secondary to malpositioned SPC
Symptoms: —
Medication: —
Clinical Procedure: Advertisement and rail fixator application
Specialty: Orthopedics and Traumatology

Objective: Diagnostic/therapeutic accidents
Background: Suprapubic catheter (SPC) insertion is a common urological procedure. Though considered a simple and safe procedure, complications are bound to occur if proper precautions are not taken during the procedure. The reported complications include gross hematuria, post-obstruction diuresis, insertion site skin-related complications, and intra-abdominal visceral injuries. Iatrogenic bowel injuries have been reported to occur as a complication in around 2.5% of cases.
Case Report: We report a very rare case of a bowel injury due to improper insertion of a SPC leading to fecal matter tracking along the muscle planes to reach the fracture site of the femur shaft and formation of an external fecal fistula along the lateral aspect of thigh, which according to us is the first reported case in the literature.
Conclusions: This case report shows the devastating complication of a technically simple procedure done in an improper manner and successful management of a rare case of femur fracture with communicating fecal fistula. The purpose of this case report is to highlight the importance of taking proper precautions before the procedure.

MeSH Keywords: Cystostomy • Fistula • Urinary Catheters

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Background

Suprapubic catheter (SPC) insertion is a common urological procedure, which is considered to be simple and safe. However, complications are bound to occur if proper precautions are not taken during the procedure. The reported complications include catheter malposition, catheter exit site infection, catheter exit site bleeding, bowel injury, and catheter blockage [1]. Iatrogenic bowel injuries have been reported to occur as a complication in as many as 2.5% of cases [1,2]. In fact, all surgeons performing suprapubic catheterization will be aware of this feared complication. We report an unusual presentation of this complication, with an external fecal fistula along the lateral aspect of thigh, secondary to bowel perforation due to malpositioned SPC. To the best of our knowledge, this is the first such reported case in the literature.

Case Report

An 18-year-old male patient presented to our emergency outpatient department with history of a motor vehicle injury 10 days previously. He was initially taken to a local private hospital where he was resuscitated and diagnosed with multiple closed fractures including bilateral superior and inferior pubic rami fracture, right-sided posterior column acetabular fracture, and right-sided femur shaft fracture. After failed catheterization attempts, the medical team decided to insert an SPC. The patient was catheterized suprapubically but started passing fecal matter through the catheter; the patient could pass urine through the penile urethra even after suprapubic catheterization. After 3 days, the patient started having fever and systemic symptoms, and after 5 days the patient started having swelling around the thigh. After 7 days of suprapubic catheterization, there was a draining fistula formation on the lateral aspect of the thigh, which drained fecal material.

When we received the patient he was in septic shock. On examination, he had SPC *in situ*, there was a boggy swelling of the right thigh, and a fistula along the lateral aspect of the mid-thigh (Figure 1). On palpation, the limb was warm, palpable crepitation was present along the thigh, and there was constant draining of fecal material from the fistula.

Laboratory investigations showed increased WBC count, severe anemia, and deranged coagulogram. On radiological examination, we found he had the above-detailed fractures. A radiograph of pelvis showed contrast accumulation in the bladder, with the bulb of the SPC located outside the bladder (Figure 2).

On contrast-enhanced CT of pelvis, the SPC was clearly seen perforating the pelvic ileum (Figures 3, 4). On further distal cuts, we could see multiple enteral contrast-filled tracts crossing



Figure 1. Boggy swelling on the lateral aspect of thigh with discharge of fecal material.



Figure 2. Contrast radiograph of the pelvis showing contrast accumulation in the bladder, with the bulb of the SPC located outside the bladder.

the right thigh along the inter-muscular planes along the adductor, posterior, and lateral compartment of the thigh and communicating with the fracture site and fistula on the lateral aspect of thigh (Figure 5). A contrast-filled tract was also seen along the right iliac fossa behind the right iliac muscle.

The patient was immediately moved to an operating room. Diversion colostomy and peritoneal lavage were performed by gastrointestinal surgeons. Thorough debridement of the fracture femur site was performed, intraoperative cultures were taken, and a nail fixator (Figure 6) was applied by the orthopedic

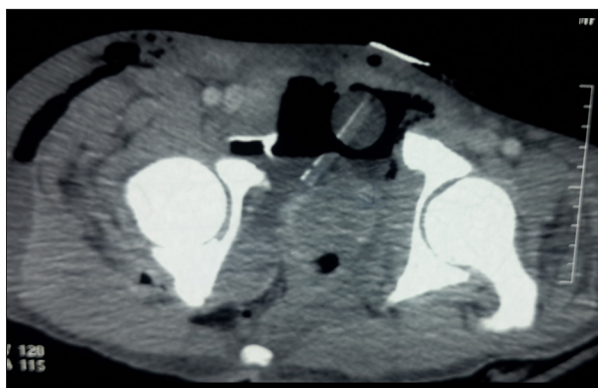


Figure 3. Axial cut section showing the suprapubic catheter clearly perforating the pelvic ileum.



Figure 4. Sagittal cut section showing the suprapubic catheter clearly perforating the pelvic ileum.

team. Cultures from the intraoperative samples showed the growth of *E. coli* sensitive to cefoperazone sulbactam, and the same antibiotic was started; surprisingly, further debridement were not required and the wound healed well. Split-skin grafting was done in a second setting after 7 days by the plastic surgery team once the cultures were negative. The patient was discharged after 10 days in the hospital. The femur fracture united after 6 months of follow-up (Figures 7, 8). The

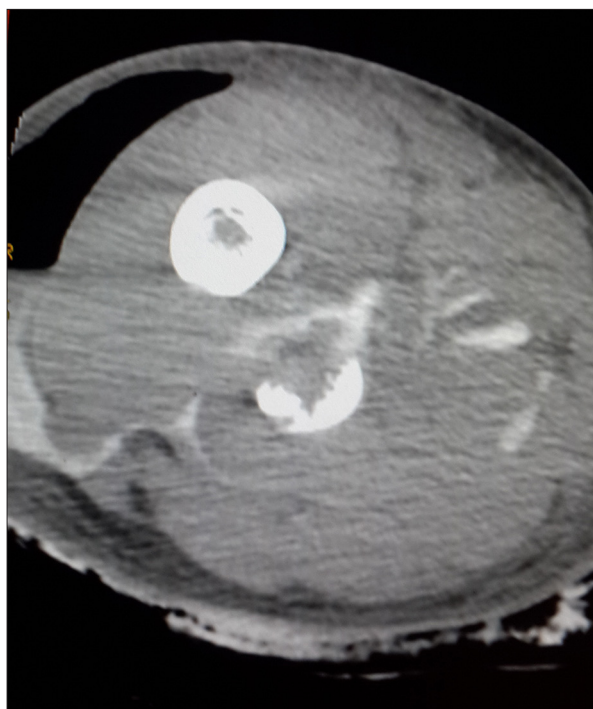


Figure 5. Axial cut section of the limb showing multiple enteral contrast-filled tracts crossing the right thigh along the intermuscular planes along the adductor, posterior, and lateral compartments of the thigh.



Figure 6. Intraoperative photograph after thorough debridement and rail fixator application.

acetabulum fracture was managed conservatively. The patient had no further complications and is able to walk independently at 1-year follow-up, but has difficulty squatting; therefore, we offered an open reduction and fixation of the acetabular fracture, but the patient refused second surgery. The SPC and colostomy are still in place and need definitive management.

Discussion

Suprapubic catheterization is a relatively simple procedure even in inexperienced hands, but proper precautions must be taken prior to the procedure. Enteric injury is a common complication

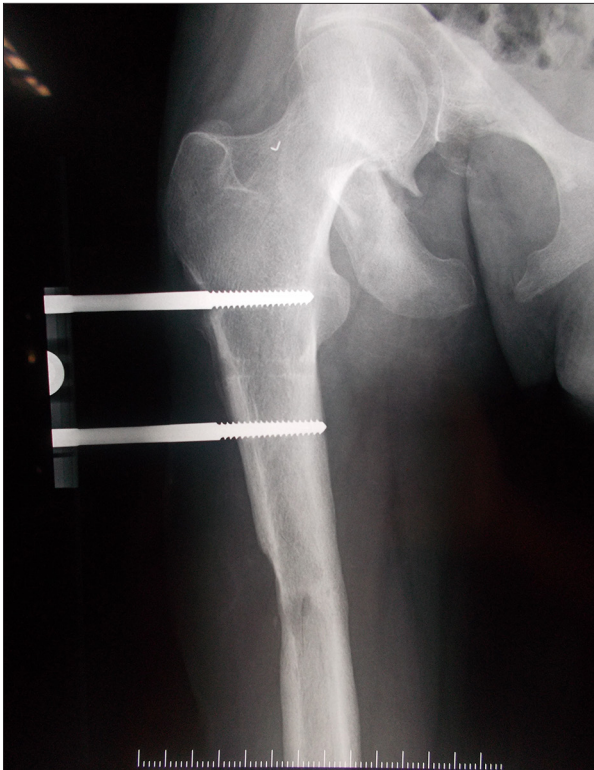


Figure 7. Clinical photograph at 6-month follow-up. The fractured femur united and the patient is able to walk independently.

of suprapubic catheterization, reported to occur in up to 2.5% of cases in previously published series [1,2]. The risk of bowel perforation further increases with previous abdominal or pelvic surgery, neuropathic bladder, and pelvic fracture [1]. Such high-risk cases should undergo surgery in a controlled environment with a senior surgeon and a senior anesthetist present. In the presented case, the associated pelvic fracture could have been a factor contributing to incorrect localization of the bladder. Bowel perforations are clinically detected shortly after the procedure due to persistence or worsening of lower abdominal pain or pain that is spreading away from the catheter insertion site [3], failure to drain the bladder, drainage of fecal material from the catheter, and development of peritonitis or sepsis. In fact, the British Association of Urological Surgeons has issued guidelines for safe suprapubic catheterization [3].

References:

- 1 Ahluwalia, RS, Johal N, Kouriefs C et al: The surgical risk of suprapubic catheter insertion and long-term sequelae. *Ann R Coll Surg Engl*, 2006; 88: 210–13
- 2 Sheriff, MK, Foley S, McFarlane J et al: Long-term suprapubic catheterisation: clinical outcome and satisfaction survey. *Spinal Cord*, 1998; 36: 171–76
- 3 Harrison, SC, Lawrence, WT, Morley R et al: British Association of Urological Surgeons' suprapubic catheter practice guidelines. *BJU International*, 2011; 107: 77–85
- 4 Garg B, Chakraborty S, Kumar V, Malhotra R: Massive tubercular pseudotumor of the thigh: a case report. *Pan Afr Med J*, 2012; 12: 29



Figure 8. Radiograph showing the united fracture.

The fecal material that leaked from the bowel entered the iliac fossa, as seen in the CECT cuts. Tracking of this fecal material to the thigh can be explained as occurring through a mechanism similar to that in reported cases of psoas abscess tracking to the thigh along the muscle planes [4]. This case is of special interest because it is the first reported case in which a fecal fistula tracked along the muscle planes into the thigh, communicating with the femur fracture site and draining out along the lateral aspect of the thigh. With timely and multi-speciality management, as described above, we were able to save the patient's life.

Conclusions

Suprapubic catheterization is considered a simple and safe procedure. With this case report, we want to show the devastating complication of a technically simple procedure done in an improper manner and wish to stress the importance of taking proper precautions before the procedure, expecting difficulties in special occasions, and involving a specialist in the procedure.