

Change of the suprapubic catheter: Not always safe!

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ABSTRACT

Suprapubic catheterization (SPC) is a commonly used technique for urinary bladder drainage. As an SPC may be needed for long term, the catheter needs to be changed every 2–6 weeks. Change of SPC is a simple and a safe outpatient procedure. Presented here are three unusual complications that occurred when changing the SPC catheter such as catheter getting misplaced up the ureter, balloon extruding outside the urethra and one case of bowel perforation. It is possible that greater awareness of risks and use of a proper technique could have prevented all three complications.

INTRODUCTION

Suprapubic catheter (SPC) placement is a common bedside procedure performed for patients who need long-term bladder drainage. It is considered safer than urethral catheter as the risk of infection and urethral stricture is lower. Usually, the SPC is changed every 2–6 weeks depending on the make of the catheter.

Change of SPC is a safe bedside/outpatient procedure. We report three very unusual complications during change of SPC.

CASE SERIES

Case 1

A 44-year-old male, on SPC for 2 years for acontractile detrusor due to acute inflammatory demyelinating polyneuropathy, presented to the emergency department with suprapubic pain, right flank discomfort, and poorly draining SPC. He had an SPC changed 8 days before presentation. His abdomen was soft with right flank tenderness. Initial evaluation showed hemodynamic stability with normal blood parameters including serum creatinine levels. A bedside ultrasonography showed bilateral mild

hydronephrosis with a full bladder. The Foley balloon was not visible on sonography. Attempt at bedside catheter irrigation did not empty the bladder but caused significant flank pain; hence, a contrast study was planned. Contrast installed through the catheter directly opacified the right pelvicalyceal system. Computerized tomography scan (CT) confirmed the presence of the Foley tip in the right upper ureter [Figure 1].

Under anesthesia, the Foley catheter was withdrawn to the bladder and an ipsilateral DJ stent was placed for 3 weeks. He had a smooth postoperative course and he remained symptom free over 1-year follow-up.

Case 2

A 72-year-old bedridden male with longstanding diabetes, cerebrovascular accident, and an atonic bladder, had been on regular SPC change for 3 years. After one of the catheter changes, caretakers noticed no urine drainage for 8 hours. Attempt at oral hydration were futile. Clinically, the bladder was full and palpable. On clinical assessment, it was found that the catheter tip had extruded from the urethra and with a complete exteriorization of balloon [Figure 2]. The catheter was repositioned.

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Case 3

A 54-year-old male, a case of metastatic renal cell carcinoma with spinal metastasis, became paraplegic and was on SPC for the same. Postcatheter change, the patient developed significant pain; hence, the nurse removed the previous catheter and placed a new one. Blood was seen at the SPC site.

The patient was brought to the emergency with generalized abdominal distension and pain 8 h after attempted SPC change. In view of severe tachycardia, generalized abdominal distention, and guarding rigidity of the abdomen, a CT scan was performed that showed pneumoperitoneum. Urgent exploration showed multiple small bowel injuries that needed surgical repair. He had a smooth postoperative course.

On later investigations, it was noted that the nurse had tried to place the SPC catheter with its introducer needle through the preformed tract [Figure 3].

DISCUSSION

Suprapubic catheter is commonly used for bladder drainage for patients who need long-term catheter. As it is urethra sparing, SPC is easier to manage and change and the overall patient satisfaction is high.^[1]

Change of the SPC is usually a safe procedure, but even this can have its share of complications. In a large study of over 1000 patients, complications graded as Clavien-Dindo IIIb or higher occurred in 0.6% of patients, with a return to theater in 0.4% due to bleeding or misplaced catheter. Tolerance of long-term SPC was high despite 59% having minor complications.^[2]

Change of SPC is often needed and proper steps need to be followed for a safe SPC change. Our protocol for SPC change is as follows.

1. Expose and clean the patient from umbilicus to midhigh
2. Fill the bladder about 350 ml before SPC change
3. When removing the prior catheter, make a note of the direction and the length of catheter that had gone inside the bladder. Use that measure when inserting the new catheter
4. At the end of new catheter insertion, confirm that there is free flux of urine from the catheter
5. Observe the patient for 30 min for continued drainage before the patient is sent back home with the new SPC catheter.

As SPC change is often an easy and safe bedside procedure, it is often delegated to the junior members of the surgical team. Unfortunately, many junior members may not have

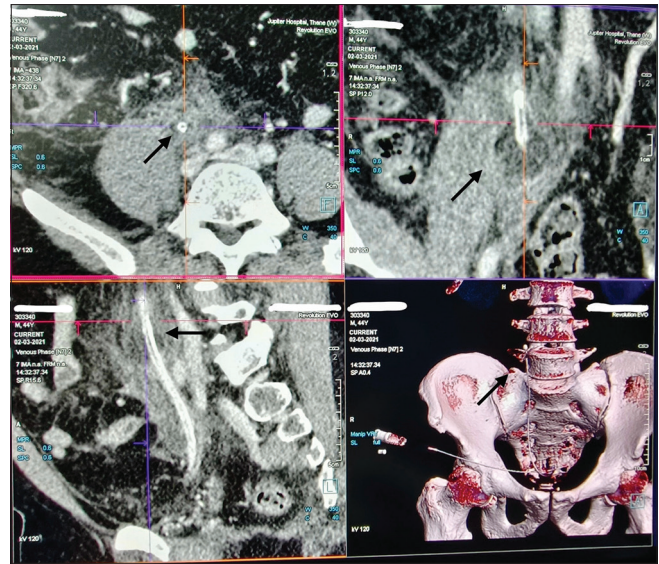


Figure 1: Computerized tomography scan showing the suprapubic catheter (marked by black arrow) up the right ureter



Figure 2: Foley catheter balloon inflated outside the urethra

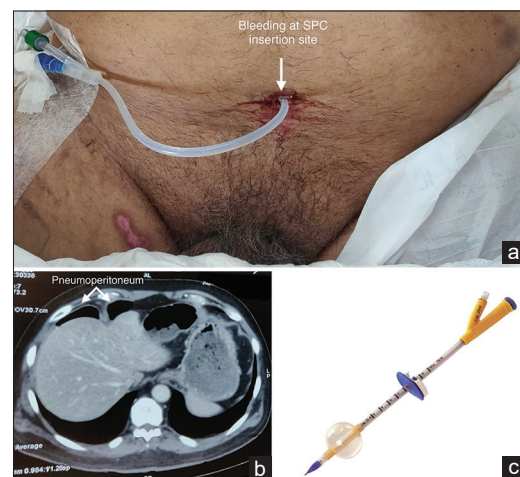


Figure 3: (a) Clinical picture showing blood at SPC site, (b) computerized tomography scan showing pneumoperitoneum, and (c) suprapubic catheter with its introducer needle

or receive adequate skills and training for SPC change.^[3] The three above-mentioned unusual complications may have been avoided if a proper protocol was followed for SPC change.

The ureteral and transurethral placement (Case 1 and 2) could have been avoided and identified if the attending doctor would not have inserted excess length and would have looked for urinary drainage at the end of the procedure. Attempt at placing the catheter with its insertion needle (Case 3) is not a recommended way to change an SPC.

This case series highlights various rare complications that can occur at the time of catheter change emphasizing the need for proper training and guidance to the clinical staff. Clinicians should be aware of these potential complications. The procedure may be simple, but the complications cause undue morbidity to the patient.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient(s) has/have

given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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