

The "Fractured Foley": An Unusual Complication of Short-term Urethral Catheterization

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A "fractured Foley" is a rare complication of urethral catheterization. Urethral catheterization is instituted in 10% to 15% of hospitalized patients, making it one of the most commonly performed invasive procedures;¹ therefore, awareness of the fractured Foley is important in managing patients with catheter malfunctions. Foley catheters have been associated with numerous complications ranging from simple urinary tract infections to balloon malfunction and catheter retention. This article presents the case of a fractured Foley in a patient requiring short-term, perioperative bladder drainage. Management and interventions are reviewed in order to minimize untoward sequelae of a fractured Foley catheter.

CASE PRESENTATION

A 32-year-old man with significant mental retardation undergoes open reduction and internal fixation of bilateral femoral neck fractures. An uncomplicated Foley catheterization is performed for perioperative fluid monitoring. Approximately 12 hours after surgery, the patient inadvertently removes his catheter by pulling the exposed portion. Careful inspection reveals that the catheter has torn at the proximal junction with the balloon and that the tip of the catheter is missing. Subsequently, the patient is able to void spontaneously without pain or gross hematuria.

Management

The urology service is consulted, and cystoscopy is performed with extraction of the retained Foley catheter tip. No evidence of balloon rupture or other foreign bodies is noted in the bladder, and the retained catheter fragment is easily extracted with an alligator forceps. The endoscopic examination of the bladder and the prostatic and anterior urethra reveals no obvious post-traumatic sequelae associated with the cath-

eter removal. The catheter tip is examined, and the balloon is noted to be intact without any evidence of puncture or rupture (**Figures 1 and 2**).

DISCUSSION

Etiology

Harland et al² first described the fractured Foley as an unusual complication of long-term indwelling urinary catheters, but a fractured Foley has never been reported with short-term catheter use. Potential causes of catheter disruption include catheter trauma such as excessive force, kinking, bending, or stretching, and/or long-standing positioning within the urethra, which may lead to excessive wear and structural deterioration of the catheter wall. Excessive force at the proximal balloon-catheter junction was the most likely cause of catheter separation in the patient in this case report.

Complications

Retained catheter fragments are usually the result of balloon rupture (catheter disruption, in this case) and can potentiate many complications. It has been well documented that catheter fragments frequently serve as a nidus for calculus formation,³ which may form in as few as 14 days,⁴ substantiating the need for expeditious removal. Foreign bodies within the bladder can also lead to recurrent urinary tract infections⁵ and irritative voiding symptoms.⁶ Complications associated with long-term indwelling catheters include bladder tumors,⁷ fistula formation,⁸ bladder perforation,⁹ and periurethral abscess.¹⁰ These complications may also

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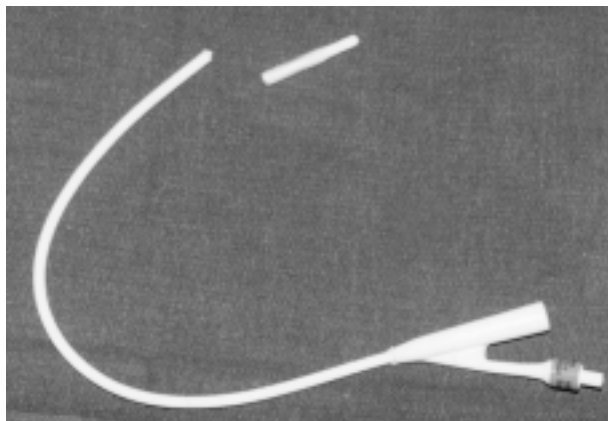


Figure 1. Photograph of the fractured Foley catheter after removal from the case patient.

result from long-term retention of a Foley catheter fragment and would likely result in morbidities similar to those previously mentioned.

SUMMARY

This case illustrates the importance of careful inspection of all urethral catheters, whether the catheters are removed electively or traumatically. Findings consistent with balloon rupture or catheter tip disruption warrant early cystoscopic evaluation to remove any retained fragments and to reduce the potential for complications.

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REFERENCES

1. Cancio LC, Sabanegh ES Jr, Thompson IM: Managing the Foley catheter. *Am Fam Physician* 1993;48:829-836.
2. Harland RW, DeGroot DL, Dewire DM: The "fractured Foley": an unusual complication of chronic indwelling urinary catheterization. *J Am Geriatr Soc* 1992;40:827-828.

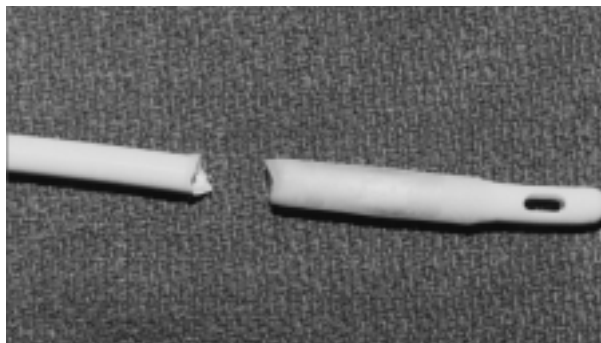


Figure 2. Close-up photograph of the fracture site of the Foley catheter after removal from the case patient.

3. Chute R: Bladder calculi formed around retained fragments of ruptured Foley catheter balloons. *J Urol* 1962;87:355-358.
4. Piyachon C, Singcharoen T, Prapakorn W, Pornsukjantira P: Rapid Foley calculus formation. *J Med Assoc Thai* 1989;72:59-61.
5. Eckford SD, Persad RA, Brewster SF, Gingell JC: Intravesical foreign bodies: five-year review. *Br J Urol* 1992;69:41-45.
6. Williams JC, Doebler RW, Curtis MR, Richardson JR: Deflation techniques for faulty Foley catheter balloons: presentation of a cystoscopic technique. *Tech Urol* 1996;2:174-177.
7. Kaufman JM, Fam B, Jacobs SC, et al: Bladder cancer and squamous metaplasia in spinal cord injury patients. *J Urol* 1977;118:967-971.
8. O'Gorman S, O'Brien A, Leahy A, et al: Rectovesical fistula due to indwelling catheter. *Br J Urol* 1990;65:424.
9. White SA, Thompson MM, Boyle JR, Bell PR: Extraperitoneal bladder perforation caused by an indwelling urinary catheter. *Br J Surg* 1994;81:1212.
10. Hardy AG: Complications of the indwelling urethral catheter. *Paraplegia* 1968;6:5-10.

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