A forgotten intravesical foreign body.
A not so unusual story

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Abstract

We report the case of a 67-year-old woman who presented with recurrent lower urinary tract symptoms due to bladder calculus that formed around a ureteral stent that was inserted into her drainage system during stone removal surgery from the renal pelvis 6 years previously. In this paper we present the evaluation, imaging and management of the above case. Our patient’s case was unique for the length of time (6 yr) from foreign body insertion to presentation.

Key words
bladder calculi; ureteral stent; foreign body

Introduction

Foreign bodies in the urinary bladder are common and they have always been an interesting topic. Actually many urologists occasionally reported a great variety of foreign bodies removed from the lower urinary tract of female and male patients. The majority of them are self inserted and few are iatrogenically induced. Among others needles, electrical wires, segments of wooden sticks, safety pins, thermometers, bullets, animal feather, intruterine contraceptive devices, encrusted sutures, piece of candles, lead pencil, surgical staples with stones, pieces of gauzes, chewing gum, tooth brush, metallic hook, tip of ureteric catheter, broken stent and parts of endoscopic instruments have been reported in the literature\(^1\). In most of the cases, patients are presented because of the complications of the presence of foreign bodies in the urinary tract. In fact, the foreign body if not removed leads to bacterial colonization and so acts as a nidus for recurrent infections. Rarely may also cause pelvic pain, hematuria, retention and secondary stones. Hereby, we report the case of a 67-year-old woman who presented with recurrent urinary infections due to bladder calculus that formed around a ureteral stent that was inserted into her drainage system during a stone removal surgery from the renal pelvis 6 years previously.

Case report

A 67-year-old woman presented to the emergency department with lower urinary tract symptoms. She

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reported irritative symptoms for more than two years. More precisely, she reported sporadic episodes of inflammatory pain and increased urgency of urination while she had a constant increased frequency of urination the last six years. Her symptoms progressed over a period of 15 days to include fever and suprapubic pain. Her medical history included mild hypertension, and diabetes mellitus which were not actively treated. She had no history of urinary tract infections, sexually transmitted infections or urinary tract calculi. She also reported a stone removal surgery from the right renal pelvis 6 years previously. Initial investigations revealed mild leukocytosis (10.2×10^9/L), mild elevated creatinine levels (1.4 μmol/L) and positive urinalysis for red blood cells, protein and nitrites. Blood and urine cultures were negative. Ultrasound of the abdomen and pelvis revealed mild right hydroureteronephrosis and mild renal cortical thinning. The urinary bladder showed detrusor hypertrophy and contained a large calcificated mass. Plain x-ray of the abdomen revealed a large bladder calculus and the presence of a double J ureteral stent in the right ureter (Figure 1). At the time of admission, she denied having ureteral stent. However, investigation of her medical file confirmed a ureteral stent placement into her right drainage system during stone removal surgery. She was started on broad-spectrum antibiotics and underwent cystoscopy, which showed a large, freely mobile bladder calculus. We removed the calculus and the forgotten stent by subsequent open cystolithotomy. Notably the stent was severely calcified and encrusted only at its lower edge and no crystal deposit or stone formation was seen at median part and the upper end of stent (Figure 2). We closed the bladder in 2 layers, leaving an indwelling urethral catheter and a perivesical drain. The patient had an uncomplicated postoperative recovery.

Discussion
Risk factors for bladder calculi include urinary stasis, infection and the presence of foreign bodies. Typical presentations include bladder outlet obstruction, urinary tract infection, terminal hematuria, intermittent pain and irritating urinary symptoms such as frequency, urgency and dysuria. Foreign bodies are mainly in-

![Figure 1: Plain x-ray reveals a large bladder calculus and a double J ureteral stent in the right ureter](image1)

![Figure 2: Bladder calculus and stent after removal](image2)
introduced into the bladder by self-insertion, which is usually a result of eroticism, by penetrating injuries or iatrogenically, via migration from adjacent organs. In a few cases medical devices remain forgotten in situ. The forgotten ureteral stents remain a urological dilemma and complications related to it can be lethal for the patient. There are several cases reported in the literature the main causes of which were poor patient compliance with instructions to return for stent removal, and inadequate counsel by practitioners. The management of such stents is often intriguing. Depending upon the size of the foreign body, either minimally invasive procedures such as lithotripsy, endoscopic management or open surgical exploration are recommended. Our patient’s case was unique for the absence of severe infection for 6 years and the absence of crystal deposit or stone formation was seen at median part and the upper end of stent. In fact encrustation of forgotten ureteral stents usually occurs at the upper coil of the stent.

Although the exact mechanism of encrustation is not clear, more effective peristalsis at the lower part of the stent sweeps any deposits off the stent, thus minimizing encrustation at the lower end. However, Dakkak et al in an analysis of 22 patients with encrusted ureteral stent found that encrustation is more common in the bladder (68.2%) and ureter (59%) than in the kidney (36.4%). According to these authors this happens because, urine remains in the bladder for a longer time than in the upper urinary tract.

Conclusion
Foreign body-induced bladder calculi are a diagnostic and therapeutic challenge. The prevention of this problem by providing patient education is of outmost importance and therefore protective mechanisms should be designed.

Conflicts of interest
The authors declared no conflicts of interest.

References