Huge Vesicovaginorectal Stone Caused by a Retained Double-J Stent Following Radical Hysterectomy and Radiotherapy for Cervical Cancer

Kon-Yi Lin*, Shun-Long Weng, Tean Lee¹, Chaklam Cheung², Chih-Ping Chen³
Departments of Obstetrics and Gynecology, ¹Urology and ²Colorectal Surgery, Hsinchu Mackay Memorial Hospital, Hsinchu, and ³Departments of Obstetrics and Gynecology, and Medical Research, Mackay Memorial Hospital, Taipei, Taiwan.

SUMMARY

Objective: Ureteral stents are frequently used in gynecologic oncology. We report a cervical cancer patient who had the complication of a vesicovaginorectal stone caused by a retained double-J stent. 
Case Report: A 67-year-old woman was admitted to the hospital because of urinary leakage from the vagina and anus. She had undergone a radical hysterectomy and radiotherapy for cervical cancer 10 years previously. At colostomy, a right double-J stent was inserted due to intestinal obstruction and right hydronephrosis 1 year after radiotherapy. At admission, physical examination revealed a huge stone in the vagina and anus. Plain abdominal film showed a double-J stent and a stone in the bladder. Computerized tomography showed a communicating stone in the bladder, vagina, and anus. Cystoscopy confirmed the diagnosis of a vesicovaginorectal stone and a retained double-J stent. The stone and double-J stent were removed by endoscopic cystolithotripsy, and the patient was discharged after an uneventful recovery.

Conclusion: The present case showed that a retained double-J stent following gynecologic surgery can lead to significant morbidity. We suggest close follow-up of the inserted double-J stent in order to prevent complications caused by its retention.

Key Words: vesicovaginorectal stone, double-J stent, cervical cancer

Introduction

The use of ureteral stents has become frequent in gynecologic oncology [1]. The advantages include ensuring passage of urine during the immediate postoperative period, and permitting the recording of the output of each kidney separately, if required. Ureteral stents can also allow identification of the ureters and prevent inadvertent ureteral injury during open surgery or laparoscopic procedures. With such widespread use, complications have been noted, such as migration, infection, pyelonephritis, breakage, encrustation, and stone formation. Here, we present a patient with a huge vesicovaginorectal stone caused by a retained double-J stent following radical hysterectomy and radiotherapy for cervical cancer.

Case Report

The patient was a 67-year-old woman who suffered from urinary leakage from the vagina and anus for 2 years. She had undergone radical hysterectomy and radiotherapy for cervical cancer 10 years previously. A colostomy was performed and a right double-J stent was inserted due to intestinal obstruction and right
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hydronephrosis 1 year after radiotherapy. She was admitted because of anal discomfort and urinary leakage from the vagina and anus. At admission, physical examination revealed a stone in the vagina (Figure 1) and anus (Figure 2). Plain abdominal film showed a double-J stent and a huge stone in the bladder (Figure 3). Computerized tomography showed a communicating stone in the bladder, vagina, and anus. A stone caused by a retained stent was thus suspected. Cystoscopy confirmed the diagnosis of a vesicovaginorectal stone and a retained double-J stent. The stone and stent were removed by endoscopic cystolithotripsy. After surgery, she received medical treatment and her symptoms improved. She was discharged 1 week later after an uneventful recovery.

Discussion

There were two main causes of stone formation in this case. First, the long period that the double-J stent was present and, second, the fact that the polyurethane of the ureteral stent encourages material to be deposited. Forgotten ureteral stents can lead to significant morbidity [2–4]. The optimum interval for change or removal of a ureteral stent is between 2 and 4 months [3]. Insertion of ureteral stents is often associated with alkaline urine, urinary infection, and predominantly calcium phosphate deposits. The etiology of encrustation is not completely clear. Risk factors include a history of urolithiasis, urinary tract infection, and prolonged stenting [3]. El-Faqih et al evaluated 299 stents in patients with calculi and noted an encrustation rate of 9.2% before 6 weeks, 47.5% from 6 to 12 weeks, and 76.3% after 12 weeks [2]. In this case, the stent had been present for more than 1 year, and a stone caused by the retained stent was thus suspected.

Two major materials are used in stents: polyurethane and silicone. In our case, a polyurethane stent was used. Polyurethane is a material that easily accepts deposits; polyurethane stents are four times less likely to break than silicone stents, but microscopic irregularities can predispose them to encrustation [5]. Silicone stents may be advantageous due to a lower risk of calcification and prolonged maintenance of tensile strength for up to 20 months. However, their smooth regular surface renders them susceptible to migration [6]. If ureteral stents are to be left for a long time, silicone stents may be a better choice than polyurethane stents.
Stone formation most frequently occurs at the vesical end of the ureteral stent [2]. Management of complicated stents requires coordinated use of medical, lithotripsy, and endourologic techniques. We had three choices of therapy in this case: drugs, extracorporeal shock wave lithotripsy (ESWL), and electrohydraulic lithotripsy. Dissolution of struvite and carbonate apatite calcifications on urethral catheters and ureteral stents using oral acetohydroxamic acid or hemiacridin irrigation has been reported [7]. Lupu et al described ESWL as the noninvasive procedure of choice for calcified ureteral stents [8]. Although ESWL successfully fragmented calcifications at the renal end and lower ureteral segments, electrohydraulic lithotripsy was necessary to fragment calcifications at the bladder end. Electrohydraulic lithotripsy is the first therapeutic choice for calcifications at the vesical end of the stent [8], and this is what we used in our patient.

This case showed that a retained double-J stent following gynecologic surgery can lead to significant morbidity. Regarding the two causes of stone formation, the long period of retention seems to be more critical than the properties of the material. For instance, our patient developed a vesicovaginorectal stone. We suggest close follow-up of inserted double-J stents in order to prevent complications caused by retention.

References