

FORGOTTEN DOUBLE-J STENT WITH BLADDER STONE FORMATION: A PEDIATRIC CASE

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ABSTRACT

Although double-J catheters are the most commonly used tools in urology practice, it can cause many complications. One reason for such complications is excessive indwelling time. The aim of this case report is to examine the complications caused by a catheter forgotten in the patient's body and to prevent similar complications from occurring with the knowledge gained. A 7-year-old female patient was admitted to our hospital with difficulty urinating that has been going on for 10 days. She had a history of kidney stones, and a double-J catheter was placed in her kidneys at a different health institution 1 year ago. It was found later on that a bladder stone about 2 cm in size was formed around the double-J catheter. Transition to an open surgery was made. The catheter had completely passed through the stone, and when the stone was removed, the catheter came out with it.

Keywords: Bladder stone, catheter, urology

INTRODUCTION

Double-J catheters are tools placed in the ureter to provide urine drainage from the upper urinary tract and are commonly used in urology practice. Ureteral stents were first reported in 1967 by Zimskind et al. (1) and the term "double-J stent" was introduced later in 1978 by Finney (2). Since then, many modifications to its design were made to allow easier manipulation and to reduce the risk of encrustation and infection (3). They are favored tools in the treatment obstructive anuria, renal reconstructive surgical operations, and renal transplantations (4). Over 80% of urologists state that they place double-J catheters post-operation (post-op) in more than half of all their cases (4). However, their usage may lead to serious complications such as migration, fragmentation, hematuria, bladder irritation, blockage, infection, and encrustation with long-term stent duration. El-Faqih et al. (5) state that encrustation risk is increased with stent indwelling time, which was evident in more than 76% of patients after the 12th week of placement. Usually, the removal of double-J catheters is a rather simple endourologic maneuver, however, there is an increased risk of breakage

and fragmentation with a longer dwelling time. Therefore, it can be formidable to navigate and plan the proper treatment. Combinations of endourological and open surgery have been used for removal of forgotten double-J stents, but there are only a few case reported in literature (6). In this case report, we present a forgotten double-J catheter causing a bladder stone in a female patient whose full treatment was refused after the operation. We aim to showcase the importance of providing the necessary knowledge necessary to prevent such cases from occurring.

CASE REPORT

A 7-year-old female patient was admitted to Pediatric Surgery Department of Trakya University School of Medicine Hospital with a complaint of urinating difficulty which lasted for 10 days. She had a history of kidney stones, and a double-j catheter was placed in her right kidney as a treatment for kidney stones at a different health institution a year prior. The results of the physical examination, renal functions tests and other laboratory examinations were normal. The graphs and the urinary



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ultrasonography showed an opacity with a 2 cm radius in their bladder. The patient was admitted to the pediatric surgery ward with planned cystoscopic laser lithotripsy. After the pre-operative examinations and follow-up results came out normal, the patient was taken to operation. The patient was put in lithotomy position. When the pediatric cystoscope was passed through the urethra into the bladder, a bladder stone with a radius of approximately 2 cm on the end of a double-J catheter from the right kidney was spotted. It was decided that it was not suitable for lithotripsy because of the size of the stone. Therefore, transition to open surgery was decided. The bladder was opened with a vertical incision by placing 2 hanging sutures in the bladder. The catheter was passed through the stone, and when the stone was removed, the catheter came out with the stone. After these procedures, the patient was closed up. A 10 fr sole probe was placed in the patient's bladder, concluding the procedure.

No early complications were observed after surgery. The patient left the operating room without any problems. The patient started receiving ampicillin-sulbactam. Foley catheter was followed up with the probe. On the first day of post-op the patient began oral feeding. On the fifth day of post-op, the foley catheter was taken away, after which a spontaneous urine output began. On the sixth day of post-op; after the usual follow-up and examinations, an oral antibiotic prescription was given, and the patient was taken to the outpatient clinic and discharged (Figure 1).

DISCUSSION

Double-J catheters have been used in urology practice for a long time to ensure smooth urine drainage (7). Although it is

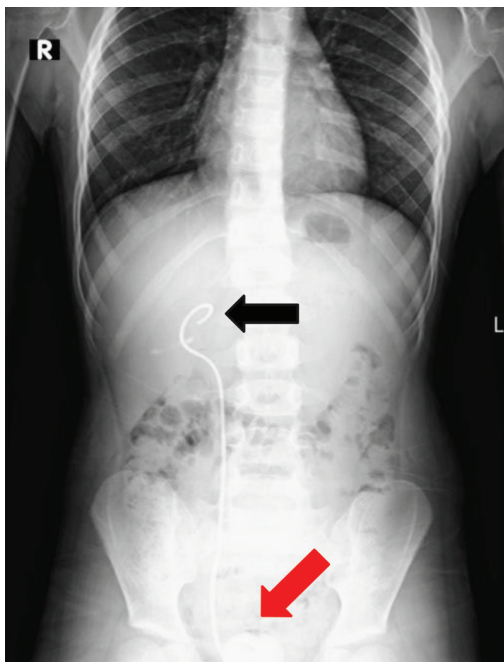


Figure 1: The radiograph of the patient's urinary tract. A double-J catheter placed in the right kidney (black arrow) and a kidney stone (red arrow).

a practical and reliable tool, it has been found that it can bring various complications with it. One reason for such complications is exceeded indwelling time in the body due to reasons such as forgetfulness. Many studies have consistently assessed the retention of stents in the body for more than 3 to 6 months (8). Our patient presented to us with a stent that was inserted approximately one year prior. Stationary urine in the bladder is prone to stone formation. The catheter encounters this stationary urine in the bladder and forms a focus as a foreign body easily adhering to crystals that cause stones, causing accumulation and large stones (9).

The length of time that the stent can stay in the body after it is inserted may vary depending on the stent's type. When we compare the durability and usage times of stents in terms of the types of materials used according to the studies done, we see that silicone-containing stents have a shorter duration as well as fewer side effects (10). In addition to silicone stents, stents containing polyurethane, silica, percutflex and hydrogel-coated polyurethane are also used in urology practice (10). The most common complications seen in other reported cases related to forgotten stents are patient incompatibility, abdominal and side pain, hematuria, migration, bacteriuria, irritable bladder symptoms, and loss of kidney function (10). In our case the patient was presented to us with complaints of hematuria and suprapubic pain. Further examinations showed that the forgotten stent was encrusted throughout its length. Endourological methods for removing forgotten stents on the body, open surgical methods, lithotripsy, and medical therapy can be used together or separately (7). According to Monga et al. (11) in 31 patients, they examined the remaining double-J stents for a longer period and performed ureteroscopy, percutaneous nephroscopy, cystolithotripsy, extracorporeal shockwave lithotripsy, cystolithotomy, and nephrectomy in their patients (10). There are several cases of severe stent encrustation in the literature. Most of the cases described have a stent indwelling time of more than 6 months and they rarely require open surgery. Aboutaleb (12) describes a patient with a forgotten stent of 10 years that was fully encrusted with multiple ureteral stones and bladder calculus. They underwent cystolithotripsy, ureteroscopic laser lithotripsy, and stent removal. In another case that is presented by Al-Hajjaj et al. (13) open surgery was performed to remove two bladder stones and the forgotten stent. Another severe bladder encrustation case that was caused by a forgotten double-J catheter was treated with cystolithotripsy (14). In our case, the double-J catheter was removed from the patient and a foley probe was inserted with an operation. Although hospitalization and follow-up were advised to the children's service, the patient's family signed the rejection form and ensured the patient's exit from the hospital.

To avoid forgetting the catheter and the complications that may develop after it, the patient should be provided with appropriate information after the catheter is inserted. The procedure applied to the patient, the necessary care, and follow-up of the procedure should be explained clearly to the patient. Recent

studies also show that a mobile monitoring system could be an efficient way to track inserted catheters to prevent time related complications (15).

Ethics Committee Approval: N/A

Informed Consent: Informed verbal consent was obtained from the patient.

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