CLINICAL CASE

Thoracic and abdominopelvic abscess secondary to a retained double-J stent

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Abstract Since the use of the ureteral stent in 1967 and with the introduction of the double-J stent in 1978, the application of the latter has become an essential part of urologic practice. The case presented herein is a 51-year-old woman with a past history of double-J stent placement due to left ureteropelvic junction stricture 6 years prior to her hospital admission. She developed septic shock secondary to empyema, diaphragmatic fistula, and pelvic cavity abscess. The empyema was drained by means of a pleural catheter, and left nephroureterectomy and cystolithotomy were performed. Double-J stent placement is a priority in the vast majority of endourologic procedures and follow-up of those patients is crucial for preventing complications due to its use. Retained stents are an infrequent problem that occurs for a variety of reasons, and can be associated with morbidities whose outcome is sometimes fatal. The management of encrustation or calcification will depend on the clinical presentation, the length of time of progression, and the resources available at the unit treating the patient.

PALABRAS CLAVE
Absceso; Catéter doble J; Complicaciones; Toraco-abdominal; México

Resumen Desde el empleo del catéter ureteral en 1967, y posteriormente la introducción del catéter doble J en 1978, el uso de este último se ha convertido en una herramienta imprescindible para la práctica urológica.
Introduction

Since the use of the ureteral stent in 1967 and then with the introduction of the double-J stent in 1978, the use of the latter has become an essential tool for the practice of urology.\(^1\) The indications include: relief of the ureteral obstructions of different etiologies, to guarantee adequate postoperative drainage, the prevention and management of ureteral injuries during open or laparoscopic procedures, among others.\(^2\) However, serious complications have been described in relation to its use and permanency, such as migration, fragmentation, and the predisposition to form calculi, especially when the stent is in-dwelling for a long period of time in the urinary tract.\(^3\)

Case presentation

A 51-year-old woman had a past history of left double-J stent placement 6 years before, due to a probable ureteropelvic junction stricture. She was admitted into the emergency department complaining of left lumbar pain of 4 month progression, accompanied with fever, chills, nausea, vomiting, and dyspnea at rest for the past week. Upon physical examination the patient had low blood pressure (90/70mmHg), tachycardia (125X’), and tachypnea (40X’), as well as pale teguments. The patient was dehydrated and diaphoretic, with reduced breath sounds in the left hemithorax. There was pain upon abdominal palpation at the left quadrant, with a palpable mass, mild hyperemia, and increased temperature at the left renal fossa. The chest x-ray showed an image suggestive of a left pleural hemorrhage (fig. 1). Plain abdominal x-ray revealed an apparent left double-J catheter calcification (fig. 2); a computerized axial tomography scan showed a left hydronephrotic kidney containing a double-J stent that was calcified along the entire ureteral course, as well as the presence of an intravesical stone. The retroperitoneum was occupied by an extensive hypodense image on the left side, with air in its interior, causing displacement of the adjacent retroperitoneal structures (fig. 3). The patient was sent to surgery and a left pleural tube was placed, obtaining 2000 mL of purulent matter. A left pararectal abdominal incision was made, through which the retroperitoneum and pelvic cavity were reached to drain 1000 mL of purulent matter. In

\(\text{Figure 1 Chest x-ray showing the pleural hemorrhage in the left hemithorax.}\)

\(\text{Figure 2 Simple abdominal x-ray showing the left calcified double-J stent.}\)
addition, a diaphragmatic fistula toward the left pleural cavity was identified. A left nephroureterectomy and a cystolithotomy were performed (fig. 4).

Discussion

All material placed in the urinary tract, if left there long enough, will calcify as a consequence of the action of urine, the urothelium, and bacteria, and this process is summarized in three events: the formation of a biofilm, bacterial adhesion, and the precipitation that in turn explains the calcification. The calcification of synthetic materials can occur in either sterile or infected urine. Various classifications have attempted to categorize the different presentations of retained stents, but there has yet to be universal agreement. One of the most frequently mentioned is the Acosta-Miranda system that classifies the stents according to their calcification grade and location into five categories.4 Our case corresponded to grade 5 of that classification. Despite the fact that the cases reported in the literature are managed mainly through single or combined endoscopic procedures, no report of a similar case was found that affected the pleural cavity, the retroperitoneum and the pelvic cavity.5-8

Conclusions

The use of the double-J stent is imperative in the large majority of endourologic procedures and follow-up of such patients is crucial in order to prevent the complications of
its use. Retained stents are an infrequent problem that occurs for a variety of reasons and can be associated with morbidities; in some cases it can even result in death.\(^5\) Encrustation or calcification management will depend on clinical presentation, the length of time of progression, and the resources available to the medical unit treating the patient.

References