DOUBLE J CATHETER MIGRATED TO THE BLADDER AND ENCRUSTED. CASE REPORT AND BIBLIOGRAPHIC REVIEW

Daniel Gallego, Jose Beltran Persiva¹, Mateo Perez Mestre¹, Ivan Jose Pavo Martin, Jaume Miralles Aguado, Carmen Garau Perello, Vicente Gimeno Argente, Manuel Bosquet Sanz and Jose Antonio De Francia Valero¹.


Summary.- OBJECTIVE: Urinary tract obstruction is one of the most prevalent diseases in urology. The handling of it includes conservative (analgesia and fluid therapy) and invasive (urinary diversion) measures. Ureteral stent is the method currently employed for urinary tract diversion. Complications of urinary tract stents maintenance have already been studied and are well known. We report a case of ureteral stent migrated to the bladder, calcified and embedded and we review the existing literature.

METHODS: A 28 year-old man with the diagnosis of ureteral stent coiled in bladder and calcified. The patient was successfully operated of suprapubic cystolithotomy.

We conducted a Medline search using the terms “ureteral stent”+”embedded stent,” “bladder ureteral stent,” “incrusted bladder stent” and “ureteral stent complications”.

RESULTS: He is currently free of disease. We found a total of 45 articles that responded to the search criteria, from which we select the highest citation index.

CONCLUSIONS: The use of ureteral stents for urinary diversion of the upper urinary tract is safe and well tolerated but not without complications, that is why we have to raise awareness among patients of the need to undergo periodic inspections and instruct them to possible symptoms and / or signs that may indicate changes in position and / or state of the stent.

CORRESPONDENCE

Daniel Gallego
Hospital General de Castellón
Avd. Benicassim s/n
12004 Castellón de la Plana (Spain)
dagalvi@hotmail.com
Accepted for publication: June 6th, 2010

Keywords: Stent ureteral. Complicactions. Incrustación. Migración.
INTRODUCTION

Since introducing ureteral stent in urological practice by Zimskind in 1967, it has become one of the most valuable tools in urology (1).

They are very useful in the treatment of urinary stones, either by wave lithotripsy (ESWL) as ureterorenoscopia (URS) or open surgery (2).

The ureteral stents are usually well tolerated and has a lot of side effects both in placement and in maintaining them.

The materials currently used have to be left in place for several weeks without risk and many patients use them permanently with regular changes.

But are not completely biodegradable compounds or biocompatible materials, so that should be extracted when the grounds for his placement is determined that its long-term maintenance and can have complications (3).

There are several studies which set out the possible complications of long-term maintenance of ureteral stents, such as fouling, breakage, migration, infection and even loss of renal unit (4).

The aim of this paper is to present one of the possible complications of long-term maintenance of the ureteral stent migration and embedding is exemplified in a case and a review on the diagnosis and management of this pathology.

CASE REPORT

Male, 28 years of age, personal history of Andersson-Hynes pyeloplasty because of ureteropelvic junction stenosis in which a catheter was placed ureteral JJ Ch 6 type open at both ends 28 cm.

The patient did not attend the subsequent tests until, four years later go to the emergency room doors of our hospital with a clinical picture irritative voiding of 2-3 months duration has been increasing in intensity to become “unbearable.”

Physical examination is unremarkable, in plain radiography of the urinary tract can be seen at the level of the bladder, foreign body calcium density fully coiled tubular appearance, giving the image of bladder lithiasis secondary to foreign body only.

Cystoscopy diagnostic endoscopic treatment discarded by the size of the stone.

We removed calcified catheter by open cystalithotomy. The patient was discharged 24 hours after surgery. It is currently in asymptomatic and free of disease.

MATERIAL AND METHODS

The case report described above and conducted a literature search of Pubmed Medline virtual library by entering the words: ureteral stent + embedded stent, bladder ureteral stent, incrusted bladder stent and complications ureteral stent.

RESULTS

Actually the patient is asymptomatic and free of disease.
We found a total of 45 articles that responded to the search criteria, from which we select the highest rate of citation that included 12 clinic case, 29 case series and 4 review.

**DISCUSSION**

Long-term complications of ureteral stents are well documented and widely known.

The migration occurs in the 8 to 9.5% of cases (5,6).

Gibbons (7) try to solve the problem of migration of the catheter including ridges along the length of the stent, now no longer used. Today migration is combated by the Jacks proximal and distal catheter. But not sure its not migration. The wall itself ureteral peristalsis, motivated by the existence within it of a foreign material, promote migration. Has also been postulated that the use of hydrophilic materials increases this risk.

Furthermore previous studies have shown that long-term maintenance of ureteral stents may cause you serious morbidity and even generate embedding problems of this as fragmentation, migration and even renal cancellation and even loss of the renal unit.

The percentage of embedding in the literature varies from 9 to 21.6% (3).

There are a number of factors involved in embedding ureteral stents.

Previous studies have suggested that infections, the material of the stent, long-term maintenance of the same, the presence of bacteriuria, pregnancy, chemotherapy, previous concurrent lithiasis or lithiasis, the chronic renal nfermedad and congenital metabolic abnormalities may contribute to embedding (8).

The presence of urinary tract infection has traditionally been associated to the embedding of ureteral stents. This may be because the JJ catheter generates a ureteral mucosal inflammation that would be involved in the process of embedding (9).

On the other hand there are studies that suggest that the longer the maintenance of the catheter are more likely to embedding. So El-Faqih A retrospective study of 290 patients with inlays in 17 of them. In 9.6% of patients the stent was removed before 6 weeks, 47.5% in the extracted between 6 and 12 weeks and 76.3% of those taken over 12 weeks there statistical significance. (10) However, in a study conducted by the group of Kwajin Park et al (11) of the 9 patients with double J forgotten in the urinary tract, found no differences in the genesis of embedding with respect to time for maintenance, if it is true that the series is the low number results are consistent with other series such as Singh I et al (12) of 15 patients.

Matthew et al (8) reported their series of 49 patients on grounds of double J stent embedding, of which 75.5% had embedding within 6 months after placement of the same, 42% within 4 months after placing and 12.6% in the next 2 months, so they conclude that the optimal frequency of replacement must be in two months.

As the catheter material in the study of Singh et al found no differences as well as other literature.

Another factor to consider is the urine tonicity. Several studies have shown that hypotonic urine is a factor in the embedding aparición.

Kehinde et al reported two cases of patients with ureteral catheter embedding in which the objective hypotonic urine (13). Persky et al (14) reported a series of 5 patients with catheters forgotten for more than seven years and embedded in identifying hypotonicity of the urine. These authors claim that urine with decreased tone may contribute to the genesis of catheter encrustation.

In our case, the catheter maintenance time was a key factor both for migration and for embedding. Urine analysis revealed no alterations in pH or tonicity of the urine, only existence of sterile pyuria and microhematuria.

Patients with prolonged stay of stents may have symptoms of the cases of type irritative voiding frequency, urgency, dysuria, and occasionally flank pain. The estimated frequency of symptoms of 80-90% with various degrees of severity (8-14).

Patients with forgotten stents usually have no symptoms and this is one of the reasons why leave to go to their regular checks and be forgotten the catheter into the urinary tract.

In our case the patient had a severe urinary symptoms, weeks of evolution, along with occasional gross hematuria.

In the literature, described the presence of complications secondary to the prolonged presence of ureteral stents and its incrustation as recurrent infections and stone formation, and in our case.

In the diagnosis of these patients is essential imaging proves as urinary tract radiography to identify the location of the stent and to assess whether or not there is calcification of the same (15). If there are doubts may request additional tests such as ultrasound or UROTC. When a suspected bladder catheter embedded at the diagnostic test that will give us accurate diagnosis is cystoscopy (16).
The study of the patient should be supplemented with power from urine as the frequency of colonization by urease-producing bacteria embedded stents.

The treatment of this disease depends on the location of the catheter embedded. Thus, in literature, various procedures are described as mechanical removal under anesthesia, ESWL, holmium laser lithotripsy (by ureteroscopy, percutaneous or transurethral bladder) and open surgery.

Currently there is widespread use of the holmium laser for the treatment of urinary tract lithiasis in, including calcified bladder foreign bodies. Delair et al (17) reported a technique for rapid extraction of large foreign bodies of the bladder. Visualized by cystoscopy intravesical order, make a small cystotomy and extract the foreign body at all times guided by cystoscopy, defending the use of the open approach combined with endoscopy as a safe, simple and fast.

In our case we opted for open surgery, given the size of the catheter and the morphology of the same, supported by the literature ensuring an absence of relapse by eliminating completely the object in question (16,20). However it is clear that the use of other less invasive alternative techniques is entirely lawful given the good results described so far (17-19).

**CONCLUSIONS**

The use of ureteral stents for deriving the urinary tract has become standard practice in Urology.

Despite the current progress has not been able to find the ideal stent. Many patients complain of symptoms secondary to stent and some complications of long-term maintenance of it.

The ureteral stent should not be maintained beyond the time required and, if required for a long time, must be refilled periodically.

It is clear that will minimize the occurrence of certain complications through proper fluid intake and close monitoring of the early withdrawal if necessary.

If you see one complication (encrustation, migration, infection ...) is necessary to use techniques of imaging and urine cultures to act accordingly, early and effectively.

**REFERENCES AND RECOMMENDED READINGS**

*of special interest, **of outstanding interest*

XENOGRAFT ITERPOSITION IN FEMALE URETHRAL DIVERTICULUM SURGERY


Summary.- OBJECTIVE: To describe the use collagen a xenograft as adjuvant therapy in the surgical treatment of female urethral diverticulum (FUD) and to do a review of the literature.

METHODS: We performed a surgical approach to remove the diverticulum and repair the remaining dead space with a porcine collagen mesh to avoid fistulas. The monitoring is done by MRI.

CORRESPONDENCE

Egoitz Tolosa Eizaguirre
Servicio de Urología
Clinica Universitaria
Avda Pio XII, 36.
31008 Pamplona (Spain)
egoitztolosa@gmail.com

Accepted for publication: July 22nd, 2010