



RISK MITIGATION IN USAGE OF URETERAL DOUBLE J STENT OF BIORAD MEDISYS AN OVERVIEW

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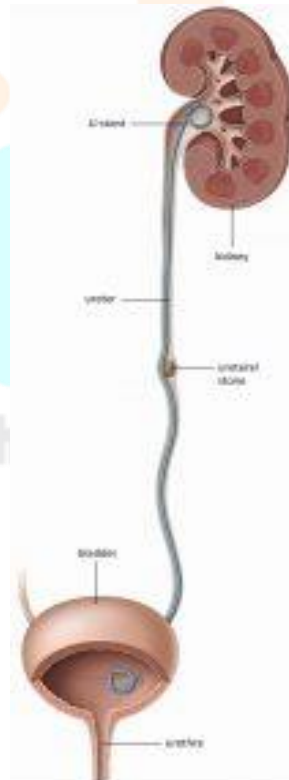
Abstract:

Ureteral stenting (also known as double J stent) is the procedure to place a thin, flexible plastic tube that is temporarily in the ureter to help urine drain from the kidney into the bladder in the case of a blockage.



The ureters carry urine from the kidneys to the bladder. (Each kidney is connected to one ureter.) In rare cases, both ureters may be blocked, in which case bilateral ureteral stents are placed, one in each ureter.

The stent may remain from days to weeks and even months, depending on the situation.



Keywords

Double-J ureteral stents, Poly urethane, stent migration, urinary obstructions, Urology.

Background:

Double-J ureteral stents are commonly used to manage urinary obstructions. Ureteral stent placement is a common procedure performed in daily urologic practice. With the widespread use of indwelling ureteral stents by urologists for urinary diversion, ureteral obstruction relief and postoperative drainage, issues related to their use have also increased. No guidelines exist for successful management of these potentially serious problems. As no ideal stent has been described, we are confronted with problems of stent migration, occlusion, encrustation, fragmentation, and stone formation. Hence we are analysing the risks involved in these stents and ways to mitigate those risks are discussed.

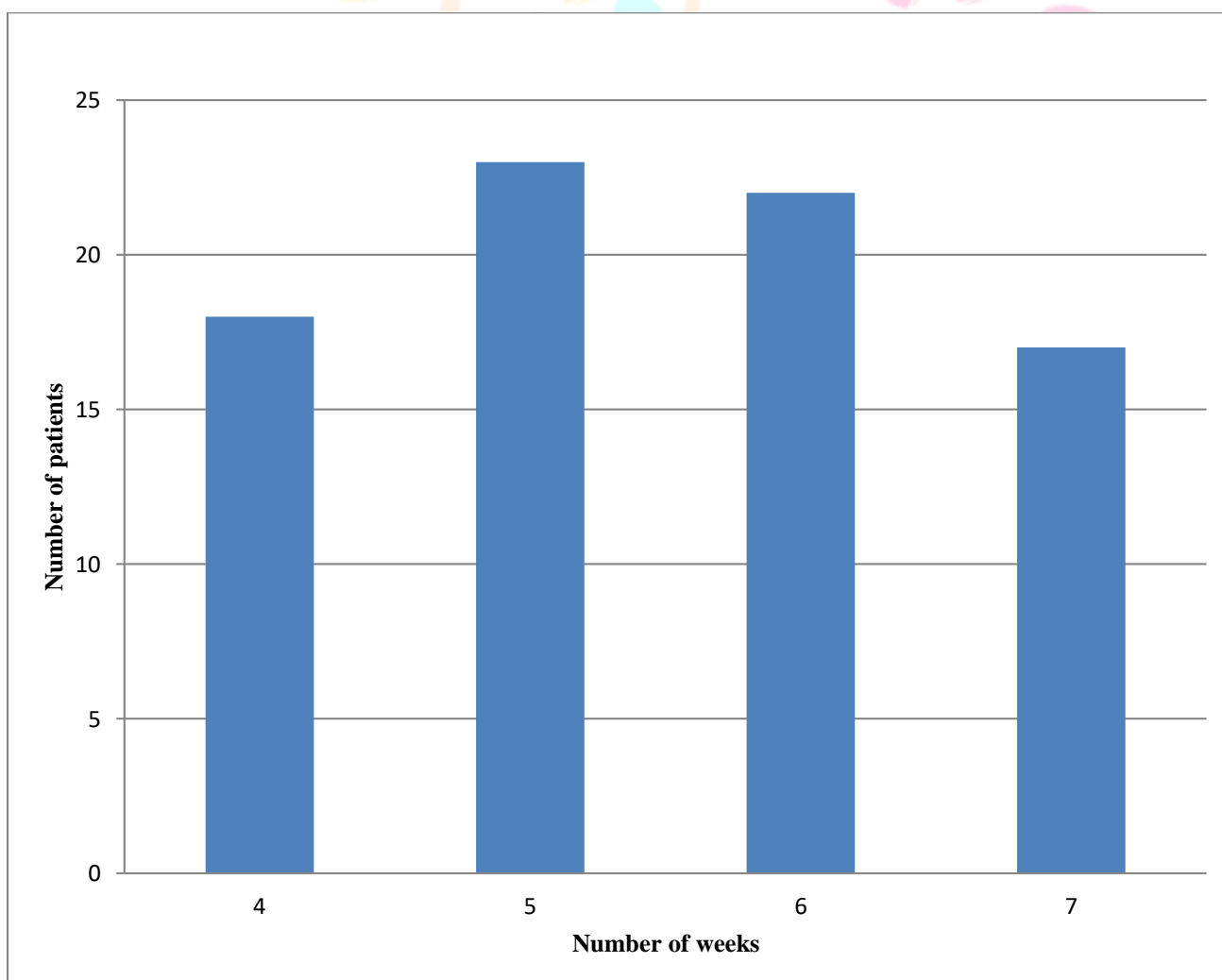
Methods:

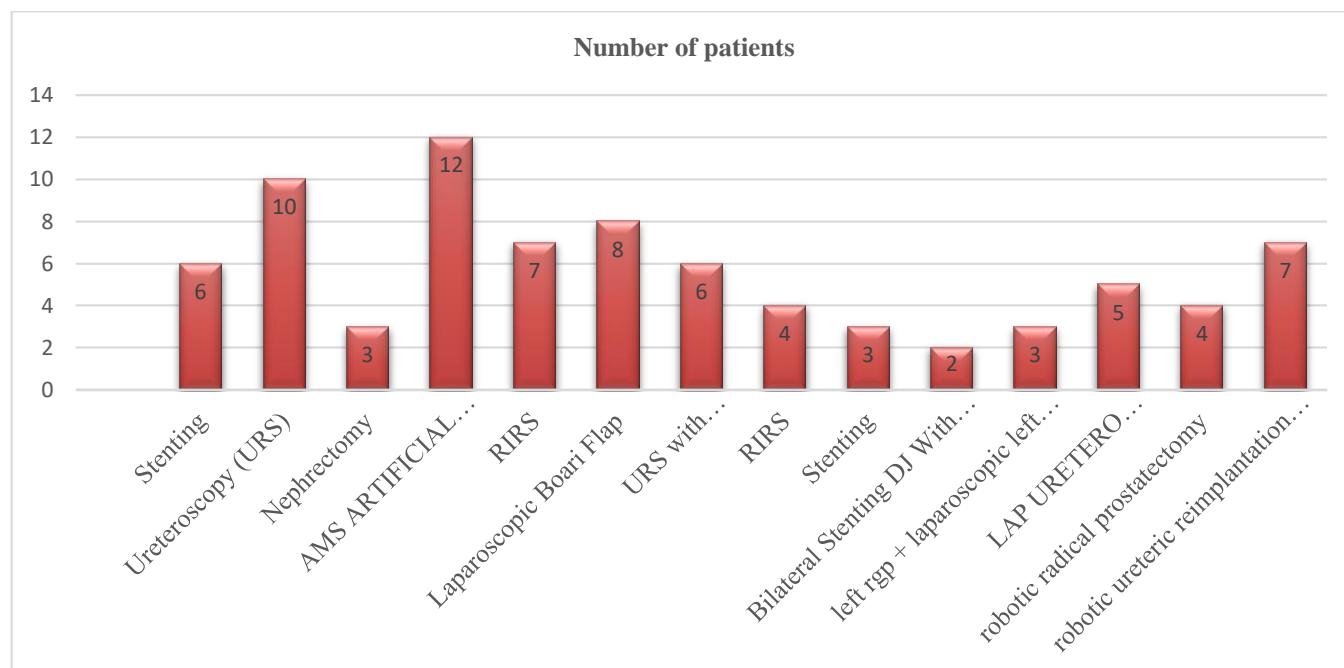
Data Collection:

Total number of 80 patients with different clinical conditions as provided below has been considered for this analysis.

Patients with age group of 22 – 75 years has been considered for analysing the risks involved in using DJ stents and to device the mitigation steps to avoid complications.

Usage duration for the Double-J ureteral stents of BIORAD MADISYS varies from 4 weeks to 7 weeks.



Number of patients and various conditions to use DJ stents of BIORAD MEDISYS.**Discussion:**

Double-J stents have been widely used for different indications. Usage of ureteral stents has several risks associated which is not limited to Bleeding, Pain in the back, bladder, groin, and penis (in men) or urethra (in women), Urine leakage in some women, Catheter migration or dislodgement, Coiling of the stent within the ureter, causing abdominal pain during urination, urinary frequency, or blood in the urine, Infection, or worsening of an existing one and Penetration of adjacent organs.

Although endourology can provide all necessary solutions for the management of forgotten indwelling stents, the best treatment remains prevention. In order to avoid encrustation, it has been reported that a time period of between 2 and 4 months is considered optimal for double-J stent removal or replacement.

Migration is an uncommon complication. It can occur proximally toward the kidney or distally toward the bladder. Factors related to distal stent migration include shape and stent material. Stents with a full coil are less prone to migrate than those with a J-shape, and stent materials with great memory, such as polyurethane, are less prone to migrate than those with less memory, such as silicone. Conversely, proximal migration occurs when the stent is too short for the ureter; an adequate choice of the stent length is therefore recommended. Simple dislodgment or migration of silicone stents up into the kidney above a lower ureteral hindrance can be managed with extraction under fluoroscopic control and local anesthesia. The distal dislocation can be managed by transurethral extraction of the stent.

Spontaneous fracture of an indwelling double-J stent is rare but can occur, so stent exchange every 6 months is recommended. The diagnosis for the patient who presented with this complication was revealed by the smooth stretching on the stent. The clinical presentation of a fragmented ureteral stent may vary, with septic, irritative, and hemorrhagic symptoms. Various explanations were proposed to explain the stent breakage: fragmentation of a stent has been attributed to the hostility of the urine. Interaction with urine and extensive inflammatory reaction in situ may play an important role in the initiation and promotion of degradation.

Conclusion:

For patients with prone risk of migration, stent materials with great memory, such as polyurethane, are less prone to migrate than those with less memory, such as silicone.

Based on the evidences we conclude that Poly urethane material is not creating any infections, hence it can be prescribed for short term use

In patients with urinary tract infections, Silicone stents may be more advantageous than polyurethane stents due to the lower risk of calcification and prolonged maintenance of tensile strength.

Silicone material can be used for long term use.

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