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Management of Complications from Ureteral Double-J Stents of BioradMedisys and Analysis of Risk Factors

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Abstract
Double-J ureteral stents of Biorad Medisys are widely used to treat urinary blockages. Early consequences with double-J stents often include pain, bladder irritation, and fever; late issues are more bothersome. We examine four instances that demonstrate a range of late problems with double-J stents (encrustation, migration, and fragmentation). Following a review of the literature, recommendations for monitoring potential risk factors are developed, as well as treatment measures for preventing problems while utilising double-J stents.

Keywords: Extracorporeal shock wave lithotripsy, stent migration, fragmentation, and encrustation.

Ureteric colic is caused by calculi that clog the urinary system at the narrowest anatomical parts of the ureter.Ureteral stent insertion is a frequent technique in everyday urologic practice. Urologists' growing use of indwelling ureteral stents for urine diversion, ureteral blockage alleviation, and postoperative drainage has resulted in a rise in concerns around their usage. There are no recommendations for successfully managing these potentially significant disorders. Because no optimal stent has been identified, we are dealing with issues such as stent migration, occlusion, encrustation, fragmentation, and stone formation.

The following are two case review findings of double-J stent problems, which included migration, fragmentation, and encrustation. This article tries to offer recommendations for the treatment and prevention of such problems based on a literature evaluation.

Case report 1

The 27-year-old male patient appeared with recurring concerns similar to those in the past, and opted for medical treatment. He had left ureteric colic on October 4, 2023, necessitating a ureteroscopy (URS) on October 5, 2023. Follow-up on 10/10/2023 revealed a case of left URS with DJ stenting. The left-sided stent was successfully removed on 04/11/2023, after the continuation of postoperative treatment. Continuous monitoring and management are vital for the patient's well-being.

Case report 2

The 19-year-old male patient presented with a right ureteric calculus on October 10, 2023, necessitating an Ureteroscopy (URS) on October 11, 2023. Following the treatment, the right URS was successfully performed on November 7, 2023, and the DJ stent was removed. Continuous monitoring and follow-up treatment are essential for the patient's postoperative recovery.

Discussion

Double-J stents of BioradMedisyshave been routinely utilised for over two decades for a variety of applications. The extensive use of ureteral stents has led to a rise in potential problems, such as stent migration, encrustation, stone formation, and fragmentation. The majority of complications linked with ureteral stent usage are mechanical in nature. Stent occlusion may occur often, necessitating a simple catheter swap. Regardless of the original reason for stent insertion, transurethral cystoscopic exchange is often a straightforward and successful treatment for blockage [1].

More severe stent problems, such as encrusted stents, pose a challenge to urologists and need a multimodal endourologic strategy. The causes of encrustation are multifaceted. Long inpatient stays, urinary infection, a history of stone disease, chemotherapy, pregnancy, chronic renal failure, and metabolic or congenital disorders are all risk factors for stent encrustation. Few studies have proposed protocols for the care of retained indwelling ureteral stents,[2,3], and practitioners continue to debate whether strategy is appropriate for handling these encrusted stents.

Ecke and colleagues used a complete preoperative imaging examination to determine the treatment method. The size of the stone load and the location of encrustation defined the particular endourologic management[4]. They advised removing the distal section of the stone load first using Lithoclast. PCNL would subsequently be employed to treat the stent's stone-covered proximal end. Flam and colleagues published a study on ESWL for stent encrustation therapy in 1990[5].

In reality, ESWL is only recommended for localised, low-volume encrustations in kidneys with sufficient function to allow for fragment clearance on their own.2 As previously reported [6,7], we feel that ESWL is only appropriate for stones that persist following PCNL treatment.

Conclusions

These instances demonstrate the potential difficulties associated with the use of ureteral stents, as well as the multimodal alternatives for their therapy. Hence selection of right brand of Ureteral stents with close monitoring and follow-up are essential and may help to avert problems in these individuals.

Conflict of interest

The authors declare no conflict of interest.

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