Editorial Comment

Editorial Comment from Dr Isotani to Removal of an encrusted ureteral stent by cutting the stent with a holmium laser using 4.5-Fr semi-rigid and flexible ureteroscopes

Stent encrustation constitutes one of the most difficult complications of ureteral stents. In this case report, Imai et al. presented the case of the encrusted ureteral stent that was successfully treated with an endoscopic procedure using retrograde approach. The knowledge about this case is important for the endocrinologists to understand the endoscopic treatment option for the encrusted ureteral stent.

As the authors described in this report, various management strategies for encrusted stents were reported, including open surgery, laparoscopic procedure, percutaneous nephrolithotomy, the endourological approach, and extracorporeal shock wave lithotripsy. Most encrusted and retained ureteral stents can be removed using endoscopic techniques. This minimally invasive approach is recommended as first-line therapy. For the complete encrustation stent in the renal pelvis, the percutaneous nephrolithotomy approach is recommended. In their report, the authors reported their successful retrieval of the encrusted ureteral stents endoscopically by cutting twice it into three parts with a Ho:YAG laser using 4.5/6.5-Fr semi-rigid and flexible ureteroscope. Similar to this report, for the retaining encrusted ureteral stents, the endourological approach was reported more than before with developments of surgical devices including new endoscopy, laser technology, and accessories. The endourological approach can be a less invasive approach than others such as open, laparoscopic surgery, or percutaneous nephrolithotomy. They demonstrated very well their detailed method in the report. Some other modification of endourological methods were reported. In one report, the distal end of encrusted ureteral stents was straightening in the bladder without and pull it out of the urethra, then crush calculi around the stent by the ureteroscope with laser, then pull out the double-J stent and remove whole double-J stent as one. Another report demonstrated that they successfully removed encrusted ureteral stents by retrograde ureteroscopy and percutaneous nephrolithotomy.

It is important to know that now we have some options to manage encrustation stent, specially in minimum invasive endourological approach using a combination of ureteroscope and laser. We need to know these updated management methods including its limitation and consider what is the best clinical practice in our institution for encrustation stent. It may provide a real benefit for the patients.

Of course, we need to think it again, the best treatment is the prevention of this complication by providing detailed patient education and the development of a tracking system.

Shuji Isotani M.D., Ph.D.
Department of Urology, Graduate School of Medicine, Juntendo University, Tokyo, Japan
shujiisotani@gmail.com
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Conflict of interest
The author declares no conflict of interest.

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Editorial Comment

Editorial Comment from Dr Barghouthy and Dr Traxer to Removal of an encrusted ureteral stent by cutting the stent with a holmium laser using 4.5-Fr semi-rigid and flexible ureteroscopes

Given the widespread use of double-J stents in endourologic practice, the urologist is encountered with a growing number of forgotten and encrusted ureteral stents. This can occur when stent removal has been missed for months or years, and forgotten by both the patient and the surgeon. However, it can also take place in lesser degrees, after a few weeks only.

Previous studies have shown that in contact with urine, ureteral stents are covered by mineral encrustations, which can potentially also lead to new stones’ formation. Multiple classification methods have been utilized to describe the level and complexity of encrustations,1,2 in order to direct the best management for each level. The most widely used, due to its simplicity and despite being based on a small number of patients, is the FECaL Double-J classification, presented by Acosta-Miranda et al. in 2009.

The paper by Imai et al. presented one Japanese team’s experience in extracting an encrusted stent.3 Their procedure is explained systematically in a clear manner and we congratulate them on their work.

The best method to deal with this worrisome problem, is by far prevention. This can be achieved by better patient education and active patient reminders for stent removal, through clinical data registry or modern software application to serve as reminders.

Traditionally, the treatment of these complicated cases has required the utilization of all the available endourological technologies, from retrograde and percutaneous access to treat vesical encrustations, through flexible and semi-rigid ureteroscopy to treat the ureteral segments, and finally, percutaneous nephrolithotripsy for the renal segments.

With the improvement in flexible ureteroscopy equipment and experience, increasing cases, even with advanced encrustation levels, can be treated with ureteroscopy alone. Thomas et al.4 presented in 2017 their team’s experience, where more than 90% of encrustation cases were treated with flexible and semi-rigid ureteroscopy alone.

In addition, different material compositions, coating materials and designs, have been used for ureteral stents’ manufacture, with each having a different profile regarding encrustation. There is growing evidence in the literature, showing the advantage of certain stent materials, namely silicone, regarding encrustation, when compared to other materials like polyurethane and even Percuflex. The occurrence of stent encrustation cases will certainly play a role in choosing the best stent composition material in the future.

Yazeed Barghouthy M.D. and Olivier Traxer M.D. GRC no 20, Groupe de Recherche Clinique sur la Lithiase Urinaire, Sorbonne Universitêté, Hôpital Tenon, Paris, France olivier.traxer@aphp.fr DOI: 10.1002/iju5.12206

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