

THE FORGOTTEN URETERIC STENT: A PREVENTABLE HARM

Ureteric stent placement is a common practice of the urologists, renal transplant surgeons as well as interventional radiologists. Urologist usually do it after ureteric stone removal, pyeloplasty (open, laparoscopic or robot assisted laparoscopic) procedures for PUJO and different surgical procedures involving pyelotomy, nephrotomy, calycotomy, ureteric repair, ureteric anastomosis etc.

Stent should be removed within due time to prevent unwanted complication. The forgotten stent presents a technical challenge often requiring a multimodal therapy depending on the degree of encrustation.

Stents are kept in situ for a period of 3 – 6 weeks [1-3]. But it is generally recommended that stents should be removed or exchanged before every 3-4 months. But if remains for a long time in place encrustation that is calcification form around the stent. Stent encrustation is a natural and inevitable reaction between biomaterial and the urinary environment. The amount of stent encrustation is directly related to how long a ureteral stent has remained in place. One study found that 9.2% of stents became encrusted when remain in situ for less than 6 weeks, while 47.5% of stents that remained in place for 6-12 weeks were encrusted and 76.3% of stents were encrusted that remained in situ more than 12 weeks[4].

The greatest risk factor for stent encrustation is the length of time stent remains in place. Other risk factors include the composition of the stent used, a history of stone formation, urinary infection, alkaline urine and pregnancy. The hardening and degradation of stent polymers may lead to fragmentation, particularly if the stent is left in place for longer than 6 months [5].

Greater than 80% of patients stented for benign disease experience stent related pain and irrigative voiding symptom [6]. Few experience a minimal discomfort from stent easy to forget about the stent. Ideal stent is biocompatible and resistant to encrustation and colonization, causes minimal discomfort.

It is reasonable to assume that patients with short term memory impairment and / or associated with psychiatric co-morbidity, substance misuse, dementia are vulnerable. Although those patients who do not feel the presence of a stent are probably at increased risk of

being forgotten by the system. There is also evidence that patients with stents for malignant occlusion experience fewer stent symptoms than others. But fortunately in such cases stents are less likely to encrust. There is negative impact of ureteric stent placement as patient health related quality of life has been well documented [6].

Successful management of retained encrusted stents requires careful planning and may need a combination of endourologic approaches at one or more sessions. PNCL, antegrade ureteroscopy with or without ICPL, retrograde ureteroscopy with or without laser lithotripsy and ESWL for proximal stones, cystolitholapaxy may require for the management of distal component of stent encrustation[7].

Lynch et al has developed an electronic stent register (ESR) and stent extraction reminder facility (SERF) located within hospital computer net work. It tracks ureteral stents and automatically sends a notice by e-mail to clinical staff if a stent becomes overdue for removal[8]. Tang et al analysed effectivity of stent card tracking system to reduce the number of overdue forgotten stents. They found it ineffective as it was infrequently reviewed[9].

The forgotten ureteric stent related complication may be directly lethal for the patient or indirectly can cause death because of complications related to operative intervention[10].

To prevent this harm some centers may develop electronic stent register system. But mostly patient counseling and awareness should be appropriate in our context. But physician should take this responsibility to prevent overdue forgotten stent. We should ensure that we are providing the best care possible for our patients through constant evaluation, monitoring and maintain the standard of patient care.

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Abbreviations:

- ESR : Electronic stent register
ICPL : Intracorporeal Pneumatic Lithotripsy
PUJO : Pelviureteric Junction obstruction