

NEWS AND VIEWS

Does a new 'pigtail suture stent' reduce stent-related symptoms?

Oliver James Wiseman

Cambridge University Hospitals NHS Trust, Cambridge, UK

Clinical context

Double J (DJ) ureteral stents are often placed after ureteroscopy [1], even though randomised prospective trials have shown that routine stenting after uncomplicated ureteroscopy is not necessary [2]. The EAU guidelines state that stents should be inserted in patients who are at increased risk of complications, such as where there has been ureteral trauma, significant bleeding or a history of infection, pregnancy or where there are residual fragments [2]. As stents cause significant pain and urinary symptoms and negatively affect the patient's quality-of-life, there has been much research undertaken to try and identify which factors relating to stent design and placement are most significant in contributing to these symptoms and whether the use of concomitant medication may help alleviate some of those symptoms. The distal end of the stent may be the most significant contributing factor to stent-related symptoms, so some studies have focussed on this aspect of stent design as being critical in trying to reduce symptoms. A recently designed stent, the JFil, named the 'pigtail suture stent' (PSS), has been introduced with this in mind. The JFil stent consists of a 7Fr 16cm body, featuring a fluted beak at the distal end and two simple sutures that reach the bladder and replace the distal part of a traditional DJ stent. Is it better or not?

News

A prospective, single-blind RCT compared stent-related symptoms caused by the PSS with a conventional double J stent (Vortek, made by Coloplast) after uncomplicated ureteroscopy for stone disease [3]. In this study, patients undergoing semirigid or flexible ureteroscopy for ureteral or renal stones <2cm were randomised. Inclusion criteria were stone-free status after the procedure, no intraprocedural complications and World Health Organisation performance status 0–2. Patients with distal ureteric stones were excluded, as were those who had a JJ stent prior to the procedure.

All procedures in both groups were randomly assigned and symptoms were assessed using the validated Italian version of the Ureteral Stent Symptoms Questionnaire (USSQ). Patients completed the USSQ three times peri-operatively: at

day 2 and 2 weeks after surgery (before stent removal), and at 4 weeks after stent removal. The primary endpoint was the sum of USSQ Urinary symptoms scores in the PSS group and conventional double J group at 2 weeks after surgery. At 2 weeks, patients having the PSS had better outcomes compared to the control group in the measures of Urinary Symptom Index score, 24 vs 30 ($p=0.004$), overall VAS score, 2 vs 4 ($p=0.02$), and the percentage of patients complaining of body pain and discomfort (64% vs 86%; $p=0.03$). Additionally, a significantly higher percentage of the control group sought health professional support for stent related symptoms (31% vs 11%; $p=0.04$) during the first 2 weeks after surgery.

Views

The authors of this study are to be congratulated for designing a randomised control study with the purpose of evaluating a new stent design to try and overcome the significant issue of stent related symptoms. While the PSS was found to reduce urinary symptom and general health index scores on the USSQ, extrapolating that they are (a) indicated in all situations where a stent would normally be placed by the operator post-ureteroscopy and (b) better tolerated than all conventional stents is not necessarily a logical step. In this study patients who had a ureteroscopy for distal ureteric stones were excluded, limiting the generalisability of the results, especially as >50% of stones operated on in the ureter are distal. Secondly, the comparator stent used to study the PSS against may not be the best tolerated stent in the market, and a recent RCT has shown that that silicone stents (Imajin, Coloplast) are better tolerated than non-silicone polymer ones [4]. In this study, silicone stents were associated with lower scores both for USSQ urinary symptoms and USSQ pain when compared to the comparator stent. Thus, while this may be the first step in identifying a better tolerated stent to be used post-ureteroscopy for stones, it is just that: a first step. Further evidence and more widespread experience will be needed before it becomes accepted into mainstream practice.

Disclosure statement

Oliver Wiseman has the following conflicts: Consultant: Boston Scientific, Coloplast, Ambu, and EMS. Research: Coloplast. Education: Boston Scientific, Coloplast, Ambu, EMS and Devicare

References

- [1] Pereira JF, Bower P, Jung E, et al. Ureteral stenting practices following routine ureteroscopy: an international survey. *World J Urol.* 2019;37(11):2501–2508.
- [2] Türk C, Neisius A, Pertík A, et al. EAU guidelines on urolithiasis. Arnhem (The Netherlands): European Association of Urology; 2021.
- [3] Bosio A, Alessandria E, Agosti S, et al. Pigtail suture stents significantly reduce stent-related symptoms compared to conventional double J stents: a prospective randomized trial. *Eur Urol Open Sci.* 2021;29:1–9.
- [4] Wiseman O, Ventimiglia E, Doizi S, et al. Effects of silicone hydro-coated double loop ureteral stent on symptoms and quality of life in patients undergoing flexible ureteroscopy for kidney stone: a randomized multicenter clinical study. *J Urol.* 2020;204(4):769–777.