Commentary

Ureteral stents are part of an ever-expanding technology horizon

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Although the concept of ureteral stenting has been around since the 1800s, it was not until the 1960s that the more modern version ureteral stents (at that time referred to as splints) were placed endoscopically. Many of the common problems with ureteral stents (irritative voiding symptoms, hematuria, encrustation, bacterial colonization, etc.) have persisted over the years, but several recent advances may abolish or drastically mitigate these problems. Recent attempts to address problems with bacterial colonization, encrustations, and biofilms have included gel-based hydrolyzed polyacrylonitrile, slow-release varnish coatings, and antimicrobial triclosan coatings (1). Unfortunately, many of these advances are not yet clinically available, and those that are, triclosan coated ureteral stents, have fallen out of mainstream clinical practice. Other attempts at addressing the irritative symptoms associated with ureteral stents continue to be an on-going process. The Percuflex™ Helical (Boston Scientific) stent was designed to better conform to the contour of the ureter, but no evidence exists yet regarding decreased stent-related symptoms. Several other novel stent designs are promising, but are still within the clinical trial phase as well. Although the authors include the Allium metal self-expanding ureteral stent within their discussion, at our institution, we have also utilized the metallic Resonance™ stent (Cook Medical) as a recent advance in ureteral stenting technology. The ability of metal stents to resist compressive forces combined with their approved dwelling time of 1 year is appealing, but the greatest drawback is likely the concern over increased lower urinary tract symptoms. Modern endourological ureteral stents have been in existence for nearly 50 years, and while several recent advances have taken place in ureteral stent technology which offer the promise increased comfort with decreased encrustation, unfortunately many of the latest designs are still within human clinical trial phases and their true utility is yet to be determined.

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Footnote

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