YotiCurl Ureteral Stent

MedTech & Digital Health

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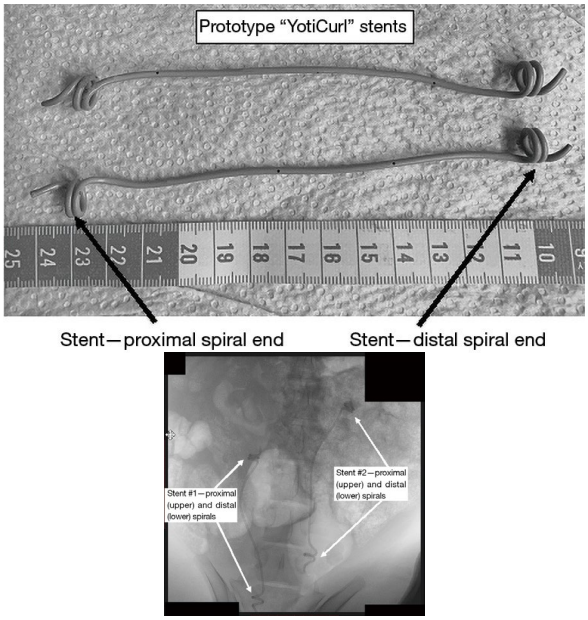
Kidney stones affect millions worldwide, with up to 15% of the population experiencing them during their lifetime. Obstructing stones often require insertion of a temporary ureteral stent to maintain urine flow. Current double-J "pigtail" stents are associated with substantial discomfort, as over 80% of patients report pain affecting daily activities, and do not promote stone clearance. The YotiCurl stent is a novel, single-use ureteral stent that is designed to alleviate patient discomfort, is easily inserted and removed, and may actively encourage stone mobilization and migration to the bladder. Proof-of-concept testing in a pig model showed safe and effective use.



Prototype "YotiCurl" stents emplaced in vivo in a pig model

APPLICATIONS

- Relief of ureteral obstruction caused by kidney stones
- Pre- and post-surgical management of urinary tract procedures
- Treatment of benign and malignant ureteral obstructions

DEVELOPMENT STAGE

Prototype stents have been synthesized and successfully tested in a live pig model, demonstrating safe emplacement, full functionality, no stent migration, absence of inflammation, and favorable histological outcomes.

DIFFERENTIATION

Patient comfort: Designed to significantly reduce pain compared to double-J stents

Ease of use: Simple insertion and removal using current clinical practice

Stone clearance: Design may facilitate spontaneous stone mobilization

Compatibility: Single-use, compatible with existing stent manufacturing

REFERENCES

- Shilo et al., Transl Androl Urol, 2022