



Comment on “Is flexible navigable suction ureteral access sheath (FANS) safer and more efficient than conventional sheaths? Italian multicentric experience”

Daniele Castellani^{1,2} · Angelo Cormio¹ · Khi Yung Fong³ · Steffi Kar-Kei Yuen^{2,4} · Vineet Gauhar^{2,5}

Received: 1 May 2025 / Accepted: 7 May 2025

© The Author(s), under exclusive licence to Springer-Verlag GmbH Germany, part of Springer Nature 2025

Keywords Kidney stone · Flexible navigable suction ureteral access sheath · Retrograde intrarenal surgery · Flexible ureteroscopy

Dear Editors,

We read with great interest the study by Cacciatore et al. who present a timely and well-executed multicenter randomized comparison of the flexible and navigable suction ureteral access sheath (FANS) versus conventional ureteral access sheaths (UAS) in retrograde intrarenal surgery (RIRS) for renal stones [1]. The authors should be commended for their study, particularly for the inclusion and exclusion criteria that encompass the current guidelines for RIRS. Indeed, the use of high-power lasers, CT scan evaluation of stone-free status, and reoperation rate for residual fragments further adds rigor to the methodology. With the growing prevalence of nephrolithiasis and the continual evolution of endourological technology, this investigation addresses a clinically relevant question: can technological advancements in sheath design meaningfully improve patient outcomes in RIRS? The introduction of suction in

endourology has recently revolutionized the performance of RIRS and significantly improved its outcomes. Supported by clinical and experimental evidence, the UAS has undergone a substantial transformation in recent years [2] but randomized trials are far and few. The results of this study are compelling: the FANS group demonstrated a significantly higher stone-free rate at one month (95% vs. 67%), reduced operative time, lower postoperative complication rates (notably less haematuria and pain), and a reduced need for re-intervention compared to the conventional UAS group. Importantly, these benefits were achieved without an increase in intraoperative complications or length of hospital stay. These findings suggest that the use of FANS not only improves the technical efficiency of stone clearance, translates into tangible benefits for patient recovery and resource utilization but also validates the feeling that suction could definitively reshape “the future of endourology” [3, 4]. The FANS device’s integration of a flexible, navigable tip with continuous suction represents a meaningful step forward in sheath technology. By facilitating the active removal of stone fragments and irrigation fluid, FANS appears to address two key challenges in RIRS: maintaining a clear operative field and reducing intrarenal pressure, both of which are linked to improved stone clearance and especially reduced infectious complications. The ability of FANS to reach the renal calyces, as highlighted by the authors, may be particularly advantageous for patients with larger or more complex stones, although this subgroup was not the primary focus of the current study.

While the findings are promising, several limitations warrant consideration. The sample size, while adequately powered for the primary endpoint, remains modest, and the follow-up period is limited to one month. Longer-term

This comment refers to the article available online at <https://doi.org/10.1007/s00345-025-05520-9>.

✉ Daniele Castellani
castellanidaniele@gmail.com

¹ Urology Unit, Azienda Ospedaliero-Universitaria delle Marche, Via Conca 71, Ancona 60126, Italy

² Endourology Section of the European Association of Urology, Arnhem, The Netherlands

³ Department of Urology, Sengkang General Hospital, Singapore, Singapore

⁴ Department of Surgery, S.H. Ho Urology Centre, The Chinese University of Hong Kong, Hong Kong, China

⁵ Department of Urology, Ng Teng Fong General Hospital, Singapore, Singapore

outcomes, including late complications and stone recurrence, remain to be elucidated. Additionally, the study excluded patients with very large or hard stones, so the applicability of FANS in these challenging scenarios is yet to be determined. Cost-effectiveness, learning curve, and device durability are also important factors for widespread adoption that were not addressed in this study. Future research should explore these aspects, as well as the potential benefits of FANS in more complex stone burdens and patients at higher risk for infectious or bleeding complications. Another issue to be elucidated in future studies is the best lithotripsy modality using FANS because currently there is no evidence of the superiority of dusting versus stone fragmentation and extraction [5]. Lastly, it would be compelling to start using FANS with real-time intrarenal pressure monitoring to objectively demonstrate the superiority of FANS in decreasing infective complications as a sequelae of reduced intrarenal pressure. For now, FANS emerges as a promising tool that may set a new standard in the armamentarium for minimally invasive kidney stone surgery.

Author contributions Conception and design: Daniele Castellani. Drafting of the manuscript: Daniele Castellani, Angelo Cormio, Khi Yung Fong, and Steffi Kar-Kei Yuen. Critical revision for important intellectual content: Vineet Gauhar. All authors approved of the final version of the manuscript for submission.

Funding The authors did not receive support from any organization for the submitted work.

Data availability No datasets were generated or analysed during the current study.

Declarations

Human rights No patients were involved in this manuscript.

Competing interests The authors declare no competing interests.

References

1. Cacciatore L, Minore A, Bonanno L et al (2025) Is flexible navigable Suction ureteral access sheath (FANS) safer and more efficient than conventional sheaths? Italian multicentric experience. *World J Urol* 43. <https://doi.org/10.1007/s00345-025-05520-9>
2. Yuen SKK, Traxer O, Wroclawski ML et al (2024) Scoping review of experimental and clinical evidence and its influence on development of the Suction ureteral access sheath. *Diagnostics* 14:1034. <https://doi.org/10.3390/diagnostics14101034>
3. De Stefano V, Castellani D, Somani BK et al (2024) Suction in percutaneous nephrolithotripsy: evolution, development, and outcomes from experimental and clinical studies. Results from a systematic review. *Eur Urol Focus* 10:154–168. <https://doi.org/10.1016/j.euf.2023.06.010>
4. Jahrreiss V, Nedbal C, Castellani D et al (2024) Is Suction the future of endourology? Overview from EAU section of urolithiasis. *Ther Adv Urol* 16:17562872241232276
5. Gauhar V, Teoh JY-C, Mulawkar PM et al (2022) Comparison and outcomes of dusting versus stone fragmentation and extraction in retrograde intrarenal surgery: results of a systematic review and meta-analysis. *Cent Eur J Urol* 75:317–327. <https://doi.org/10.5173/cej.2022.0148>

Publisher's note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.