

New robotic single-port platform for transvaginal natural orifice transluminal endoscopic surgery

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The surgical team and the da Vinci SP surgical system. Credit: Xiaoming Guan et al

Transvaginal NOTES, introduced in 2012, has gained popularity for its integration of vaginal surgery fundamentals. The approach combines the natural orifice entry of the vagina with the manual extension of

laparoscopic instruments, offering enhanced visualization of the surgical field.

While this technique has evolved for procedures like [hysterectomy](#), adnexal [surgery](#), myomectomy, sacrocolpopexy and high uterosacral ligament suspension, persistent challenges in suturing, dissection and triangulation have limited its application in vaginal natural orifice transluminal endoscopic surgery (NOTES) procedures.

Previous studies have used the robotic Xi [platform](#) for NOTES surgeries, including pelvic floor dissection for complex endometriosis surgeries. However, the Xi platform faced challenges with instrumental collisions in transvaginal NOTES.

In a study published in the journal *Intelligent Surgery*, a team of U.S. researchers explored a NOTES surgery that uses an advanced single-site [robotic platform](#)—known as da Vinci SP.

Using the new robotic platform, The research team successfully demonstrated 10 surgical steps in the pilot case, which includes robotic hysterectomy, bilateral salpingectomy, lysis of adhesion and resection of endometriosis. Six weeks post-surgery, the patient reported a positive outcome with no surgical incision and minimal pain during the follow-up clinical visit.

Xiaoming Guan, lead researcher of the case report, highlighted that this was the first use of a robotic platform in transvaginal NOTES surgery. "Further studies with larger sample sizes and comparative analyses are crucial to confirming the feasibility and safety of employing this advanced platform," added Guan.

More information: Xiaoming Guan et al, Pioneering case: Robotic single port (SP) transvaginal NOTES (RSP-vNOTES) for hysterectomy

in ten steps, *Intelligent Surgery* (2023). DOI: [10.1016/j.isurg.2023.11.003](https://doi.org/10.1016/j.isurg.2023.11.003)

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