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Following the NOSE: when surgical evolution outpaces the evidence

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Surgery for endometriosis has always been defined by a dual ambition: to remove disease thoroughly while preserving normal anatomy and function. Unlike oncological surgery, where radicality is often justified by survival endpoints, endometriosis surgery demands a more nuanced balance. Pain relief, fertility, bowel, bladder and sexual function all sit alongside technical completeness as measures of success. Progress in this field has therefore been evolutionary rather than revolutionary, shaped by refinement, shared experience and a willingness to question established practice.

The introduction of minimally invasive surgery represented the most transformative advance in endometriosis care. Laparoscopy fundamentally changed what was possible, allowing precise dissection within distorted pelvic anatomy while reducing collateral damage. Subsequent developments focused not only on the extent of excision but on how surgery is performed: fewer ports, nerve-sparing dissection, tailored bowel resections, enhanced recovery program and an increasing emphasis on functional outcomes. In this context, the question is no longer whether surgery can be less invasive, but whether it can be less traumatic.

Nowhere has this evolution been more apparent than in colorectal endometriosis. Segmental bowel resection, once performed with generous margins and accompanied by routines such as ileostomy and ligation of the inferior mesenteric artery borrowed from cancer surgery, has progressively become more conservative as experience has accumulated. Alongside this, principles of conservative mesenteric dissection and blood vessel sparing—long established in inflammatory bowel disease surgery—have increasingly informed practice in endometriosis, further reducing unnecessary surgical trauma. Shaving and discoid excision emerged as deliberate alternatives where full segmental resection was unnecessary, and techniques such as transanal discoid excision were largely developed within the gynaecological community before being adopted more widely.[1] This exchange of ideas across specialties has been a defining feature of progress in endometriosis surgery.

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Natural orifice specimen extraction (NOSE) represents a continuation of this trajectory, albeit with the direction of knowledge transfer reversed. Developed within colorectal surgery, largely in the oncological setting, NOSE has been increasingly adopted in benign disease as surgeons have questioned the necessity of an abdominal extraction incision. Importantly, NOSE does not alter the principles of disease excision or anastomotic construction. It modifies only the completion phase of the operation by asking whether specimen retrieval can be achieved with less collateral trauma.

At this point in the evolution of technique, it is worth remembering that many meaningful advances in endometriosis surgery have arisen not from new instruments, but from structured approaches that reduce variability and unnecessary trauma. Frameworks such as SOSURE, which emphasise systematic exposure, anatomical normalisation and disciplined progression through operative steps, illustrate how technique can evolve without fundamentally changing the operation itself.[2,3] Viewed in this light, NOSE should be understood as a refinement of an already optimised procedure rather than a novel concept.

Viewed in this light, NOSE represents not a departure from established practice, but a refinement of the final phase of an already optimised procedure. Variations in execution—including configuration of the anastomosis (for example side-to-end vs. end-to-end), methods of anvil introduction such as transanal piercing or hand-sewn purse-string closure, and the choice of stapling devices—largely reflect surgeon experience and preference rather than competing surgical philosophies.

The paper published in this of Facts, Views and Vision in ObGyn (FVVO) by Popov et al.[4] should be interpreted within this context. It does not describe a new operation, nor does it claim to redefine colorectal endometriosis surgery. Instead, it adds further data on outcomes associated with NOSE compared with conventional laparoscopic specimen extraction, contributing to a growing body of literature that seeks to evaluate incremental refinements rather than wholesale change.

Concerns surrounding intracorporeal bowel opening are legitimate and should not be dismissed. Exposure of the bowel lumen raises questions around microbial contamination, inflammatory response and potential downstream effects that may be difficult to measure, particularly in a young population where fertility preservation is often paramount. What is encouraging is that such questions are now being addressed directly rather than assumed. The inclusion of microbiological assessment in the study published in this issue of FVVO reflects a welcome shift toward examining biological consequences alongside surgical outcomes. However, the current evidence remains incomplete, and further work will be required to determine whether subtle or longer-term effects exist.

Much of the available evidence for NOSE initially came from observational series and single-centre experiences, several of which reported favourable perioperative and functional outcomes and contributed to increasing uptake in high-volume centres.[5,6] Importantly, this has now been supplemented by randomised data. A prospective randomised controlled trial comparing NOSE with conventional laparoscopic colorectal resection demonstrated non-inferiority in terms of safety and functional outcomes, supporting the view that NOSE can be performed without compromising patient recovery when undertaken by experienced teams.[7]

Taken together, these data suggest that NOSE has moved beyond an experimental technique and is now routinely used in several large centres by surgeons with expertise in advanced endometriosis surgery. This does not imply that it should be universally adopted, nor that unanswered questions no longer matter. Rather, it reflects a pattern familiar in surgical progress: accumulating experience, cautious validation and gradual incorporation into practice where appropriate.

The broader question raised by NOSE is therefore not whether it represents progress, but how much evidence is required before surgeons feel justified in abandoning a step that is already known to cause harm. Surgery offers many examples where plausible reasoning proved misleading, reminding us that intuition alone is insufficient. At the same time, an excessive reliance on formal trial evidence can slow progress in technically evolving fields where randomised studies are difficult to design and interpret.

Following the NOSE should not be understood as privileging instinct over evidence. Rather, it reflects recognition of a direction of travel that has consistently characterised progress in endometriosis surgery: questioning unnecessary trauma, refining technique and allowing practice and evidence to evolve together. The study published in this issue of FVVO adds to that body of evidence without claiming to settle the debate, and it should be interpreted accordingly.

Surgical progress is rarely linear, and certainty is often retrospective. The responsibility of the surgeon is to remain both open-minded and sceptical—willing to innovate, while continuing to measure, question and refine. NOSE may yet reveal limitations that are not fully understood. For now, it appears to represent another thoughtful step along a path endometriosis surgeons have been walking for decades.

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