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Invited Commentary

Transformational journey in ileo-pouch anal anastomosis surgery for ulcerative colitis

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The 30-year retrospective analysis of ileo-pouch anal anastomosis (IPAA) surgery for ulcerative colitis (UC) by Bislenghi *et al.*[1] offers a comprehensive perspective on how surgical innovations and evolving patient management strategies have reshaped outcomes. Conducted in a high-volume referral centre, this study captures the evolution of techniques and underscores their clinical implications over three decades, making it a significant contribution to the surgical literature.

Among the most striking findings is the dramatic adoption of minimally invasive laparoscopic techniques, which rose from 23.2% of cases in the 1990–2000 period to 86.0% in 2011–2022. This reflects a paradigm shift in surgical practice, driven by advancements in technology and growing evidence supporting the benefits of laparoscopy in reducing postoperative pain, enhancing recovery, and minimizing adhesion formation. Delayed IPAA was shown to independently reduce the risk of anastomotic leakage (OR 0.49; $P = 0.016$), a complication with profound implications for both short- and long-term patient outcomes. The reduction in leakage rates over time (from 16.7% to 8.4%) suggests that staging the procedure in patients with severe inflammation or poor nutritional status allows for optimal healing and reduced postoperative morbidity rates, evidence shared by previous studies in the literature[2].

These data mirror broader trends observed in recent studies on laparoscopic IPAA, such as those reported by others[3]. These advancements, shown to reduce postoperative pain, adhesion formation, and recovery time, are transformative in a procedure historically associated with high morbidity rates. The shift towards delayed IPAA as a predominant strategy further aligns with contemporary findings suggesting that staging the procedure can mitigate risks in high-risk patients, particularly those on biologics or with severe inflammation[3].

Despite these advancements, the cumulative incidence of pouch failure remained stable at 8.2% across the three time intervals, highlighting the multifactorial challenges associated with pouch durability.

Anastomotic leakage emerged as the strongest predictor of pouch failure (HR 2.82; $P = 0.010$), emphasizing the critical need to prevent this complication. Although delayed IPAA has clearly mitigated leakage rates, the consistent failure rates suggest that other factors, such as surgical technique refinements, perioperative care, and long-term pouch management, require further optimization.

This study provides important insights for surgeons performing IPAA. The data reinforce the value of delayed IPAA in reducing anastomotic leakage, underscoring the importance of staging the procedure in high-risk patients, such as those with active inflammation, poor nutritional status, or prior steroid use, as also shown in other large cohort studies. Surgeons must also adapt to the growing role of laparoscopic techniques, ensuring they are proficient in minimally invasive methods to provide patients with the best possible outcomes.

Additionally, the findings highlight an opportunity to refine the use of diverting ileostomy. Although the omission of a stoma in select delayed IPAA cases shows promise, surgeons must proceed cautiously, identifying patient subgroups through validated risk stratification models to ensure this approach does not inadvertently increase leakage or failure rates.

Finally, the stable incidence of pouch failure despite technical advancements serves as a reminder of the importance of lifelong follow-up for patients with pouches. Surgeons should collaborate with gastroenterologists to manage complications such as pouchitis and functional disorders, as these issues often manifest long after the initial surgery.

For physicians, particularly gastroenterologists managing UC patients preoperatively, this study emphasizes the need for meticulous patient optimization before surgery. The increasing use of advanced medical therapies, including biologics and immunosuppressants, requires careful coordination with surgical teams to minimize risks such as infection or impaired healing. Physicians should also consider the timing of surgery, as delayed IPAA appears to provide substantial benefits for patients with severe disease or those transitioning from intensive medical management.

Following surgery, physicians play a vital role in monitoring for complications, particularly pouchitis and other functional issues. Early detection and prompt management of these conditions are

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critical in maintaining pouch function and preventing long-term failure. Moreover, the findings highlight the importance of multidisciplinary collaboration in tailoring postoperative care plans that address both the surgical and medical complexities of UC.

In this setting, particular attention should be given to the role of biologics in influencing perioperative risks, underscoring the need for tailored management strategies. Past studies[4] highlighted how therapies like anti-tumour necrosis factor agents, vedolizumab, and ustekinumab modulate inflammation, potentially improving surgical outcomes. However, biologics also pose risks such as infection and impaired healing, necessitating careful perioperative coordination.

Future studies should explore robotic-assisted IPAA, as initial reports suggest improved precision compared to laparoscopy. Furthermore, the impact of biologics and immune modulators on surgical outcomes warrants further investigation, particularly regarding perioperative management and healing. Identifying biomarkers predictive of pouch dysfunction or failure could also aid in early intervention and personalized care strategies. Comprehensive registries and multicentre trials, as already advocated[5], will be essential to advance understanding and improve outcomes.

Furthermore, it will be helpful to establish minimal required quality indicators from a scientific society to define pouch surgery benchmarks including the number of surgeries per year, the rate of pouch failure, the use of minimally invasive laparoscopic techniques.

The role of pre-pouch nutrition and therapy, the role of time for first pouch surgery in UC as well as primary prophylaxis scheme of medical therapy, represent the major challenges for physicians.

This article[1] provides a compelling narrative of surgical evolution in IPAA for UC, with significant improvements in short-term outcomes such as leakage rates through the adoption of delayed reconstructive surgery and minimally invasive techniques. However, the stable pouch failure rates remind us of the persistent challenges in managing long-term outcomes. This analysis serves as a blueprint for future innovations, combining surgical precision, technological advancements, and personalized care strategies to further improve the lives of UC patients.

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