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# Extraperitoneal colostomy for preventing parastomal hernia: Implications for physical activity and long-term outcomes

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Dear Editor,

We read with great interest the recent article by Matsumi *et al.*[1] examining why parastomal hernia (PH) still occurs at facilities where extraperitoneal colostomy (EPC) is routinely adopted. Their study provides valuable insights by demonstrating that PH development predominantly occurred in cases where the stoma was created through the transperitoneal route despite institutional policies favoring the use of EPC. In their retrospective analysis, Matsumi *et al.*[1] evaluated 28 consecutive patients who underwent laparoscopic abdominoperineal excision for rectal adenocarcinoma between September 2013 and August 2021, with a minimum follow-up of 20 months. Notably, PH developed significantly more frequently in patients undergoing transperitoneal colostomy than in those with EPC (71.4% vs. 5.1% at 3 years, $P < 0.001$), clearly highlighting the protective effects of EPC. These findings underscore an important discrepancy between surgical principles and real-world clinical practice.

A growing body of evidence supports the superiority of EPC in reducing stoma-related complications compared to other approaches. Recent systematic reviews and meta-analyses comparing EPC and transperitoneal colostomy have consistently shown that EPC is associated with lower rates of PH, stoma prolapse, and retraction, supporting its use as the preferred technique for permanent colostomy construction.[2,3]

Despite these compelling data, EPC has not been universally adopted. One explanation may be the technical complexity associated with creating an extraperitoneal tunnel, particularly during laparoscopic surgery. Surgeons may, therefore, deviate from the intended extraperitoneal route in technically demanding situations, especially during the final phase of complex operations such as abdominoperineal excision. This phenomenon reflects a broader evidence–practice gap in colorectal surgery.

Recent advances in minimally invasive techniques may help overcome these barriers. Several laparoscopic techniques have been proposed to facilitate EPC creation, including approaches preserving the posterior rectus sheath and modified extraperitoneal tunneling methods.[4,5] Building upon these developments, Akamoto *et al.*[6] reported a robotic approach using a tip-up fenestrated grasper, suggesting that improved articulation and instrument control may further enhance the feasibility and reproducibility of EPC in minimally invasive surgery.

Another important contribution of the study by Matsumi *et al.*[1] is the identification of practical reasons why the EPC was

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not performed. The authors described factors such as limited colonic length, reuse of diverting stoma sites, and intraoperative decision-making during the final phase of surgery.[1] Understanding these practical barriers is essential for improving adherence to optimal stoma construction techniques.

Beyond the surgical technique alone, PH prevention may have broader implications for long-term outcomes. PH is associated with impaired stoma-related quality of life and may reduce usual activities in some patients because of discomfort, bulging, and appliance-related difficulties.[7] As physical activity is increasingly recognized as an important component of colorectal cancer survivorship, as demonstrated in the Colon Health and Life-Long Exercise Change (CHALLENGE) randomized trial,[8] strategies that reduce PH may help preserve postoperative function and support long-term health. Although a direct causal link between PH, sarcopenia, and oncologic prognosis has not been established,[9] this possibility warrants further investigation.

While use of a prophylactic mesh remains a widely discussed strategy for PH prevention, current evidence is not entirely consistent, particularly regarding long-term effectiveness and optimal mesh type and placement techniques.[10-12] In contrast, EPC represents a practical, mesh-free preventive approach that directly addresses the anatomical mechanism of PH formation. In this context, the study by Matsumi *et al*.[1] provides important clinical evidence supporting EPC and reinforces its role as a primary preventive strategy when constructing a permanent colostomy.

In conclusion, the findings of Matsumi *et al*.[1] reinforce the protective role of EPC in preventing PH while also revealing practical factors that may hinder its consistent implementation. Addressing these barriers and promoting the appropriate use of EPC may contribute not only to reducing surgical complications but also to optimizing preventive strategies for PH.

## Author contributions

Concept and design: YN and ST. Literature search and manuscript preparation: YN. Critical revision of the manuscript: ST. Both authors have read and approved the final manuscript, meet the criteria for authorship, and agree that the manuscript represents honest work.

## Ethical policy and institutional review roard statement

Not applicable.

## Declaration of patient consent

Not applicable.

## Data availability statement

Data sharing does not apply to this article as no datasets were generated or analyzed.

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Nil.

## Conflicts of interest

There are no conflicts of interest.

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## List of abbreviations

EPC Extraperitoneal colostomy
PH Parastomal hernia

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