

# Initial Experience With Safety and Efficacy of Endoscopic Full-Thickness Resection in Patients With Inflammatory Bowel Disease: A Case Series

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## ABSTRACT

Endoscopic full-thickness resection (EFTR) is a novel endoscopic technique for removing complex colorectal lesions. The inflammatory bowel disease (IBD) population poses unique challenges for endoscopic resection due to an increased prevalence of fibrotic, nonlifting lesions and higher recurrence rates compared with the general population. This case series reports on the successful use of EFTR in 5 patients with IBD who had challenging colonic polyps, including fibrotic and nonlifting lesions. Technical success was achieved in all cases without any postoperative complications. Follow-up surveillance revealed no residual lesions or recurrence, and histopathological analysis confirmed full-thickness resection in all samples. This is one of the first case series suggesting that EFTR is a promising, safe, and effective alternative to surgery for managing complex colorectal polyps in patients with IBD.

**KEYWORDS:** endoscopic full-thickness resection; inflammatory bowel disease; colorectal lesions; recurrence; minimally invasive surgery

## INTRODUCTION

Endoscopic full-thickness resection (EFTR) is a novel technique for resecting challenging colorectal lesions, including those at the appendiceal orifice, nonlifting polyps, submucosal growths, and fibrotic lesions.<sup>1</sup> This minimally invasive procedure uses an over-the-scope clip device (Ovesco, Tübingen, Germany) to secure 2 serosal surfaces on clip deployment, followed by resection of the lesion above the serosal closure with a snare.<sup>1</sup> EFTR has emerged as a valuable alternative to surgery for select benign and malignant colorectal lesions, showing favorable safety and efficacy outcomes in the general population.<sup>2–7</sup> Despite extensive data on the safety and effectiveness of EFTR, its role in inflammatory bowel disease (IBD) remains underexplored. While endoscopic mucosal resection (EMR) and endoscopic submucosal dissection (ESD) have been effective in patients with IBD, targeting only the mucosal and submucosal layers, they face limitations with polyp recurrence and fibrotic lesions.<sup>8–14</sup> EFTR offers a promising option for these cases by ensuring full-thickness resection (FTR) and potentially reducing recurrence.<sup>6</sup> This report presents our initial experience using EFTR to manage complex colorectal polyps in patients with IBD, highlighting its safety and efficacy.

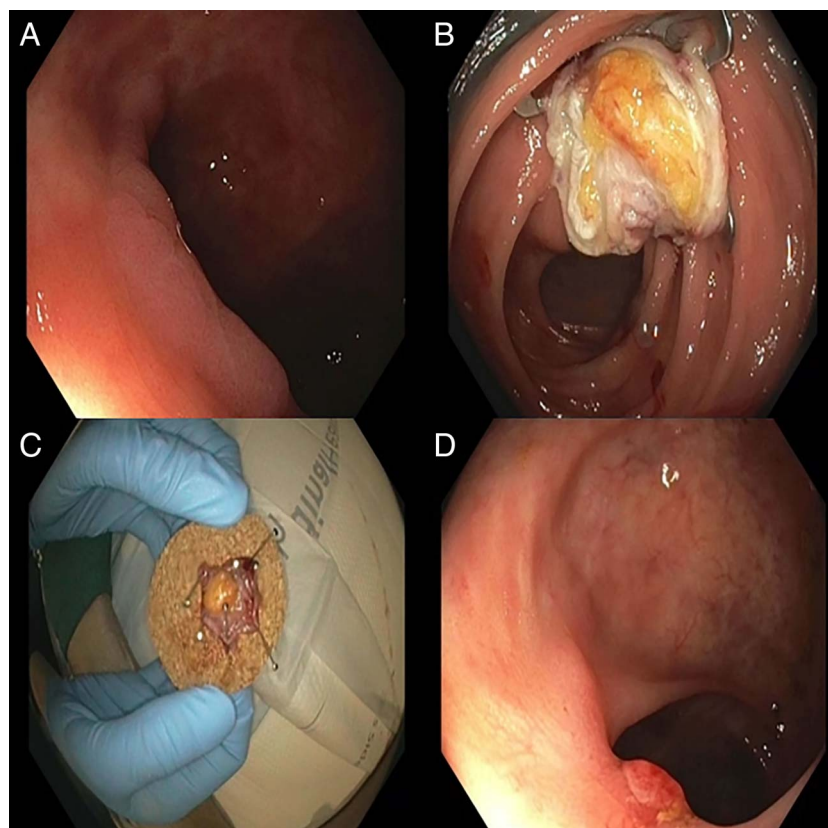
## CASE REPORT

We report 5 cases of adult patients with ulcerative colitis who underwent EFTR for challenging colonic polyps at our institution between June 2020 and July 2022. These patients presented with fibrotic and nonlifting polyps considered unsuitable for conventional endoscopic resection techniques. The mean age of the patients was  $66.4 \pm 6.8$  years, and 60% were men. The polyps were primarily located in the descending colon ( $n = 3$ ), rectum ( $n = 1$ ), and transverse colon ( $n = 1$ ), with an average size of  $25 \pm 5$  mm (Table 1).

The EFTR procedure was performed using the Ovesco FTR Device. After the identification of the lesion of interest, the borders were carefully assessed. Polyp classification and sizes are presented in Table 1. Once the borders of the polyp were clearly identified, the perimeter of the polyp was marked with the snare tip using the soft coagulation mode. Following the marking, the endoscope was carefully withdrawn from the marked area. The Ovesco FTR device was then mounted on the scope, preparing it for the resection

**Table 1.** Summary of patient characteristics, polyp locations, and outcomes following EFTR in patients with IBD

Age	Gender	Location of polyp	Size (mm)	Paris classification	Disease duration	Mayo score (current)	Current treatment	Previous Sx, polypectomy	Technical success, complications	Follow-up colonoscopy
60	F	Rectum—normal colon mucosa	20	0-IIb	36 yr	0	Mesalamine	Failed EMR	Yes, No bleeding or perforation	After 10 mo
76	F	Descending colon—tubular adenoma	30	0-IIb	50 yr	0	Sulfasalazine	Interval polypectomies and biopsies	Yes, No bleeding or perforation	After 7 mo
71	M	Proximal transverse colon—tubular adenoma	7	0-IIa	>10 yr	0	Chronic Prednisone 10 mg	Multiple polypectomies with low grade dysplasia	Yes, No bleeding or perforation	After 12 mo
62	M	Descending colon—tubular adenoma	25	0-Is	>10 yr	0	Mesalamine	Failed EMR	Yes, No bleeding or perforation	After 16 mo
63	M	Descending colon—tubulovillous adenoma	20	0-IIb	12 yr	0	Post total abdominal proctocolectomy	Interval polypectomies and biopsies	Yes, No bleeding or perforation	After 6 mo
EFTR, endoscopic full-thickness resection; EMR, endoscopic mucosal resection; IBD, inflammatory bowel disease.										



**Figure 1.** Image illustrating the stages of the EFTR procedure. (A)—a flat polyp is identified during the initial endoscopy, (B)—EFTR clip deployed, (C)—the resected 30 mm polyp from the descending colon is displayed; (D)—the postpolypectomy scar observed during a follow-up endoscopy 7 months later. EFTR, endoscopic full-thickness resection.

procedure. The endoscope, with the attached FTR device, was advanced back to the previously marked lesion. Using the forceps, the marked area of the polyp was gently grasped and pulled into the cap of the FTR device. Once the entire marked area was pulled into the FTR device cap, the Ovesco clip was deployed. An integrated snare was used, and then, the polyp tissue was closed, entrapping it for resection. The polyp was precisely cut above the deployed clip using electrocautery, facilitating its complete resection (Figure 1). The scope was then withdrawn, and the FTR device cap was removed. The scope was reinserted, and a thorough postresection inspection was conducted to assess the lesion site. Following EFTR, the patient was discharged with instructions to follow a full liquid diet for one day, followed by a gradual reintroduction of solid food.

Follow-up surveillance colonoscopy was conducted at an average of  $7.8 \pm 4.5$  months. No residual lesions or polyps were observed in any of the patients. Histopathological examination confirmed FTR in all cases, indicating successful removal of the polyps without recurrence. There were no complications.

## DISCUSSION

We present the first case series exploring the use of EFTR in managing complex colorectal lesions in patients with IBD. While EMR and ESD are well-established minimally invasive

therapies for colorectal lesion, EFTR represents a newer and promising approach in patients with IBD where fibrosis and scarring maybe more common.<sup>15,16</sup>

In a systematic review and meta-analysis by Rotermund et al (2022), the recurrence rates of adenomatous polyps after various endoscopic interventions were analyzed.<sup>17</sup> The study found that ESD (1.7%; 95% CI, 0%–3.4%) and EMR with margin ablation (3.3%; 95% CI, 2.2%–4.5%) significantly reduced recurrence compared with standard EMR without (15.2%; 95% CI, 12.5%–18.0%) or with unsystematic margin ablation (16.5%; 95% CI, 15.2%–17.8%). However, in patients with IBD, although EMR and ESD have shown minimal complications and technical success rates ranging from 77.7% to 91%, there are higher recurrence rates, especially for fibrotic and nonlifting adenomas, with a recurrence rate of 15.3%.<sup>10,18,19</sup>

The limitations of EMR and ESD for nonlifting polyps, particularly in fibrotic or scarred lesions, underscore the potential of EFTR as an alternative. EFTR, a newer concept, may be particularly suitable for diagnostic or therapeutic tissue removal in patients with IBD. Previous studies on EFTR for colorectal polyps, regardless of IBD status, reported high technical success rates (83.3%–89.5%) and acceptable R0 resection rates (75%–76.9%), with manageable adverse events (9.9%).<sup>2,3</sup> However,

the curative efficacy of EFTR is limited for early cancers, especially in lesions >2 cm.

The advantage of EFTR lies in its ability to remove adenomas without requiring lesion lifting, as it allows resection of all layers of the colonic wall, potentially reducing recurrence rates. As emphasized by Kiesslich et al (2017), advanced endoscopic techniques, such as EFTR, are vital in managing colorectal lesions in patients with IBD.<sup>20</sup> Our study supports this recommendation by providing initial insights into the potential of EFTR in reducing the recurrence risk in patients with IBD; however, long-term studies are needed to evaluate its sustained efficacy over extended follow-up periods. The absence of postoperative complications in our cohort further reinforces EFTR as a safe option for managing colonic polyps in IBD.

The novelty of our study lies in demonstrating EFTR as a new treatment modality for patients with IBD, with high technical success rates and no postoperative complications. In addition, FTR confirmed through histopathology strengthens the robustness of our findings. However, the mean specimen diameter limitation of 25 mm restricts the use of EFTR to smaller lesions, as also noted by Andrisani et al. (2017).<sup>6</sup> Addressing this limitation by modifying the EFTR technique for larger lesions is an important area of improvement. One important limitation of this case series is that all patients were in clinical remission, which may affect fibrosis levels and tissue response following EFTR and could limit the generalizability of our findings to patients with active disease.

Future research should focus on increasing sample sizes to enhance the generalizability of our findings. In addition, long-term follow-up studies are needed to evaluate the recurrence rates and sustained efficacy of EFTR in preventing adenomatous polyp recurrence in patients with IBD. Expanding the applicability of EFTR to larger lesions could further extend its scope as a valuable therapeutic option.

## DISCLOSURES

Author contributions: GS Kochhar: Study conception, Study design, critical revision and final approval of the manuscript; H. Khataniar: Data collection, data analysis, manuscript preparation; A. Desai: Study design, data collection, data analyses and manuscript preparation. GS Kochhar is the article guarantor.

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Informed consent was obtained for this case report.

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