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Introduction

Endoscopic full-thickness resection (EFTR) is emerging therapeutic option for en-bloc treatment of subepithelial tumors and epithelial neoplasia with significant fibrosis. Technique provides alternative to surgery. Study aim was to evaluate results at advanced endoscopy center as the first one to have introduced this technique in Slovenia.

Table 1. Demographics and Procedure Characteristics.

Sex, n=18 (n, %)	Male 10 (55.6)	Female 8 (44.4)
Mean age +/- SD (years)	67.4 +/- 10.9	
ASA classification, n (n, %)		
II	12 (66.7)	
III	6 (33.3)	
Mean dose of midazolam +/- SD, mg	0.7 +/- 0.83	
Mean dose of piritramide +/- SD, mg	4.5 +/- 5.1	
Location of the lesion, n=18 (n, %)		
Rectum	8 (44.4)	
Transverse Colon	2 (11.1)	
Ascending Colon	1 (5.6)	
Appendiceal Orifice	6 (33.3)	
Body of Stomach	1 (5.6)	
Mean Procedure Time +/- SD, min	42.1 +/- 14.3	
Technical success, n=18 (n, %)		
Yes	17 (94.4)	
No	1 (0.06)	
Clinical success, n=17 (n, %)		
Yes	15 (88.2)	
No	2 (12.8)	
Pathohistology of the Retrieved Specimen, n=17 (n, %)		
Adenoma with Low Grade Dysplasia	5 (29.4)	
Sessile Serrated Lesion	3 (17.6)	
Adenocarcinoma	3 (17.6)	
Neuroendocrine Neoplasia	2 (11.8)	
Other	4 (23.5)	

Methods and Materials

This was retrospective analysis of first 18 consecutive EFTR cases from 01/2020 till 11/2021, that were performed in our advanced endoscopy center with a dedicated full thickness resection device (FTRD®, Ovesco, Germany). Data was gathered from electronic medical records. We recorded the demographic, procedural and technical characteristics. Data regarding lesion pathology (surface size, type, location), timing of procedure, technical success (defined as reaching the lesion, deploying the clip, and performing an en bloc and macroscopically complete resection), clinical success (defined as R0 resection and histopathology evaluation compatible with adequate endoscopic treatment) and rate of procedure-related complications (bleeding, perforation, need for emergency surgery, infectious complications such as appendicitis and cardio-pulmonary adverse events associated with sedation) were also recorded (Table 1).

Results

Majority of patients (n=10, 55.5%) had previously failed attempts at removal of lesions that were referred for EFTR. Rest (n=8, 44.4%) were either lesions that included appendiceal orifice (n=6, 33.3%) or neuroendocrine neoplasia (n=2, 11.1%).

Mean age of patients was 67.4 years +/- standard deviation (SD) 10.9 years. 8/18 (44.4%) patients were female. Based on American Society of Anesthesiologists' (ASA) classification of Physical Health, 12 patients were ASA 2 and 6 patients ASA 3. Procedures were performed with conscious sedation (midazolam) and analgesia (piritramide), with pulse oximetry monitoring. There were no cardiopulmonary adverse events.

One procedure was aborted due to postsurgical anatomy after major abdominal surgeries in the past; the endoscope with the FTRD device could not be passed through. One patient developed post procedural appendicitis and a surgical appendectomy was performed, although the EFTR was technically successful. No other complications were recorded. Mean procedure time was 42.1 +/- (SD) 14.3 minutes. Technical success of the procedure was 94.4% (n=17/18), clinical success was achieved in 88.2% (n=15/17). One patient was referred to surgery due to insufficient safety margins of removed specimen and one patient due to presence of invasive adenocarcinoma (pT2). All but one (post-procedural appendicitis) patients were discharged after one day of observation.

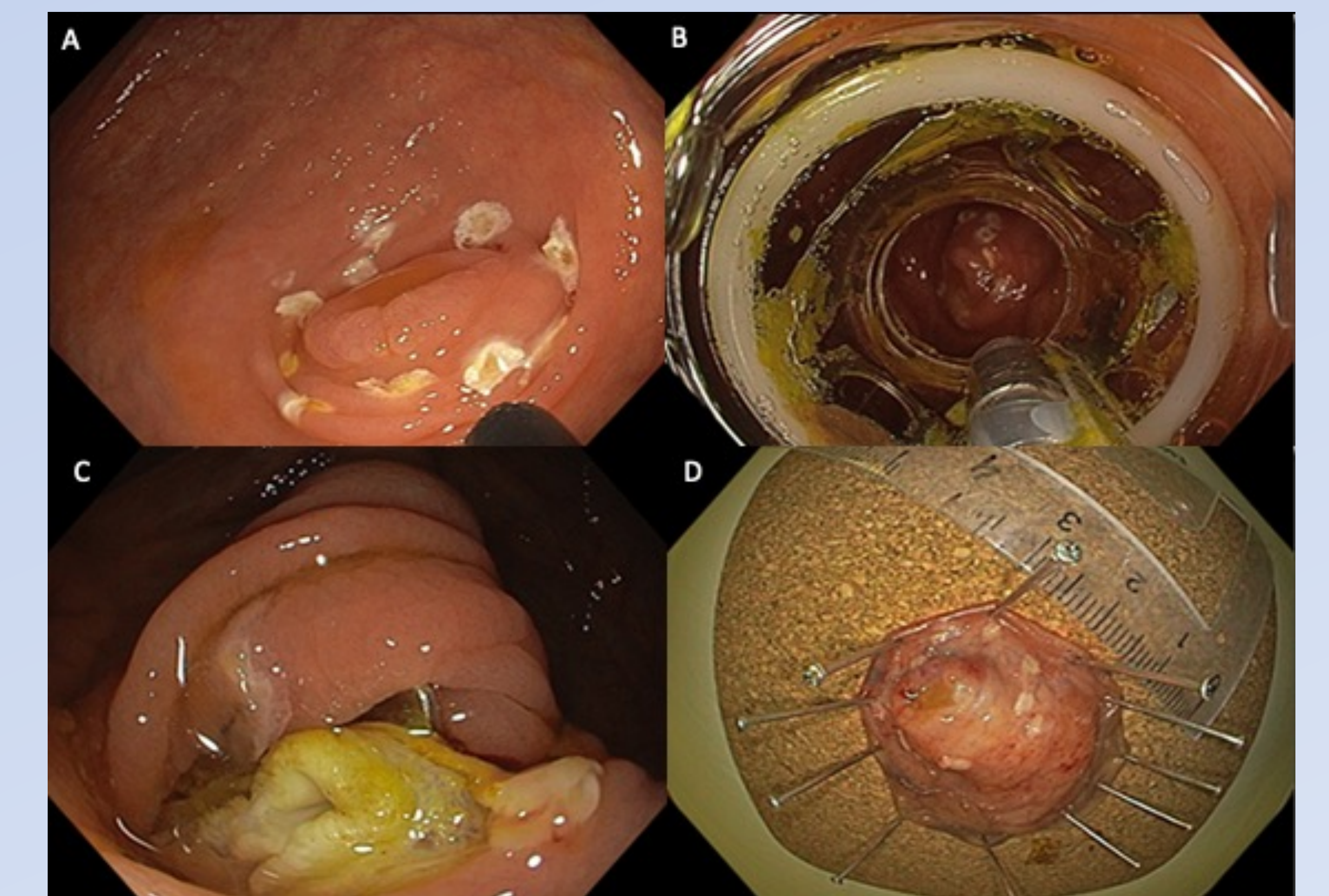
Conclusion

Our results confirm that EFTR is:

- 1. effective endoscopic technique.**
- 2. it is exceptionally useful in fibrotic lesions and neuroendocrine neoplasia.**

Technically less challenging than endoscopic submucosal dissection it can still pose technical difficulties especially in cases with postsurgical anatomy.

Figure 1. Endoscopic Full Thickness Resection of the Lesion in the Appendiceal Orifice.



A) Pre-EFTR marks of a 20 mm sessile serrated lesion of the appendiceal orifice. B) Deployment of the EFTR device. C) Resection defect after EFTR. D) Mucosal side of the resected specimen. The pathology showed sessile serrated lesion.

Contact

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- Schmidt A, Meier B, Caca K. Endoscopic full-thickness resection: Current status. *World J Gastroenterol.* 2015 Aug 21;21(31):9273-85. doi: 10.3748/wjg.v21.i31.9273. PMID: 26309354; PMCID: PMC4541380.
- Aeppli P, Criblez D, Baumeler S, Borovicka J, Frei R. Endoscopic full thickness resection (EFTR) of colorectal neoplasms with the Full Thickness Resection Device (FTRD): Clinical experience from two tertiary referral centers in Switzerland. *United European Gastroenterol J.* 2018 Apr;6(3):463-470. doi: 10.1177/2050640617728001. Epub 2017 Aug 23. PMID: 29774161; PMCID: PMC5949966.
- Aslanian HR, Sethi A, Bhutani MS, et al. ASGE guideline for endoscopic full-thickness resection and submucosal tunnel endoscopic resection. *VideoGIE.* 2019;4(8):343-350. doi:10.1016/j.vgie.2019.03.010