Endoscopic muscularis excavation of a rectal duplication cyst

Rectal duplication cyst (RDC) is a rare congenital disorder of the hindgut, accounting for up to 5% of all duplications in the alimentary tract [1]. The cyst usually becomes apparent in childhood, presenting with infection, fistulization, or mass effect; clinical presentation in adulthood is uncommon. Surgical excision is a cornerstone of treatment because it relieves symptoms and prevents complications, such as perianal sepsis, bleeding, and malignant degeneration [2]. Herein, we describe what is, to the best of our knowledge, the first case of endoscopic resection of an RDC.

A 33-year-old patient was admitted to our department to undergo a diagnostic work-up because of bowel disturbances. At colonoscopy, a submucosal lesion was seen in the rectum 7 cm from the anal verge ( Fig. 1 a ). Transrectal ultrasound demonstrated a 20-mm anechogenic, well-delineated lesion extending to the muscularis propria layer ( Fig. 1 b ). RDC was diagnosed. The patient opted for endoscopic resection, and informed consent was obtained.

After circumferential marking and mucosal incision, a submucosal entry point was created at the distal side of the lesion by injecting 6% hydroxyethyl starch solution (500 mL) mixed with 2 mL of methylene blue dye and 1 mL of epinephrine ( Fig. 2 a ). Submucosal dissection was done with both a DualKnife and a HookKnife (Olympus, Tokyo, Japan) until the edges of the cyst were circumferentially exposed. Then, muscular excavation was done to detach the dorsal edge of the cyst from the muscularis propria ( Fig. 2 b ). Finally, the 51-mm resected specimen was removed ( Fig. 2 c ), and the cyst was seen on the dorsal side ( Fig. 2 d ). Pathologic examination demonstrated a 25-mm cyst with a mucin-filled lumen. The cyst wall consisted of an epithelial layer of columnar cells with partially hemorrhagic ulcerated colonic mucosa and granulation tissue ( Fig. 3 a ), surrounded by two thick muscle layers ( Fig. 3 b ).

Endoscopic resection by means of muscularis excavation – as an extension of standard endoscopic submucosal dissection – was initially described for the treatment of gastric submucosal tumors and tumors of the esophagogastric junction originating from the muscularis propria [3,4]. Our case demonstrates that the same approach may be feasible in the endoscopic treatment of rectal submucosal lesions.

Competing interests: None

Fig. 1  Macroscopic features of a rectal duplication cyst. a A rectal submucosal tumor is discovered in a 33-year-old patient undergoing colonoscopy because of bowel symptoms. b Transrectal ultrasound demonstrates a 20-mm anechogenic lesion extending to the muscularis propria layer. Intracystic echoes indicate the presence of mucus.
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Fig. 2 Endoscopic submucosal excavation of the rectal duplication cyst. a Submucosal entry point at the distal side of the lesion. b Exposure of the cyst. c Post-resection mucosal defect. d A completely excavated cyst is seen on the dorsal side of the specimen.

References

Bibliography
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Fig. 3  Microscopic view of the cyst wall.  
\textbf{a} Part of the rectal duplication cyst demonstrating hemorrhagic ulcerated colonic mucosa and granulation tissue.  
\textbf{b} The wall of the cyst has an epithelial layer of columnar cells and an outer smooth-muscle layer.