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Diagnosis and treatment of a rare small intestine duplication in adult under double-balloon enteroscopy and laparoscopy

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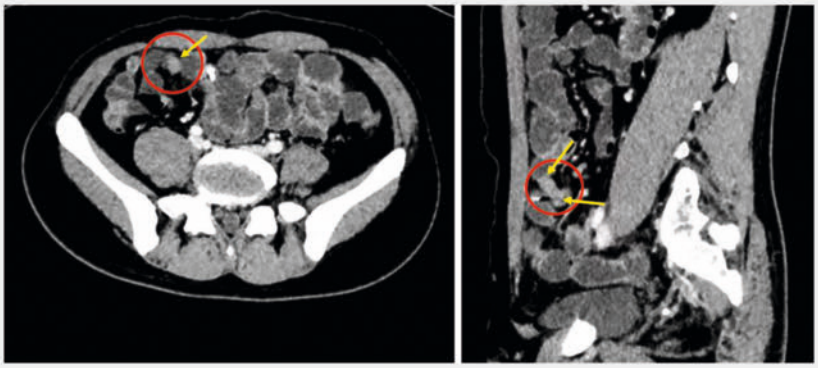
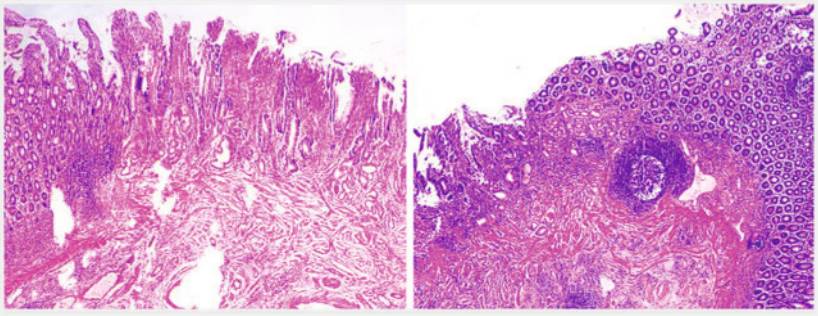


▶ **Fig. 1** Computed tomography images showed a blind tube-like structure near the right lower abdomen and ileum.

▶ **Fig. 2** Duplicated and deformed small intestine after dissection.



▶ **Fig. 3** Pathological result indicated that intestinal mucosa contained ectopic gastric glands.

Video 1 Double-balloon enteroscopy and laparoscopic observation of ileal tubular duplication deformity with independent mesentery and blood supply.

A 35-year-old man was admitted to the hospital due to unexplained recurrent abdominal pain and hematochezia for 1 year. Lab results showed mild anemia (HGB 122 g/L). Abdominal enhanced computed tomography showed a blind tube-like structure near the right lower abdomen and ileum. The distal local wall was nodular, thickened, and significantly enhanced (▶ **Fig. 1**). Double-balloon enteroscopy (DBE) was then performed through the oral route and the anal route (▶ **Video 1**). A double lumen opening of the ileum was displayed approximately 1.2 m from the anal route. One irregular semi-circular ulcer with a white coating was found near the stricture in one lumen. It was suspected to be a small intestine duplication anomaly.

During laparoscopic exploration (▶ **Video 1**), a lumen approximately 8 × 2 cm in size could be seen at the distal end of the ileum, approximately 30 cm away from the ileocecal region. Its mesentery showed a tubular lumen, which was different from Meckel's diverticulum. In particular, this tubular lumen had an independent mesentery and blood supply. Subsequently, we pulled out the ileum and used a cutting stapler to remove the duplicate deformed intestinal segment. The postoperative diagnosis was ileal duplication deformity (▶ **Fig. 2**). Pathology showed that intestinal mucosa contained ectopic gastric glands (▶ **Fig. 3**). The patient was discharged 9 days after surgery and did not experience any particular discomfort.

Intestinal duplication is a rare congenital anomaly that typically occurs during fetal or pediatric development [1, 2]. Duplicated segments usually share a common wall and blood supply with native intestine. Clinical symptoms can manifest as abdominal pain, bloody stools, and even intestinal obstruction. It can easily be mis-

diagnosed as Meckel's diverticulum. For treatment, surgical intervention is required to correct deformities and restore normal function. Previous reports of small intestine duplication mainly occurred in children [1, 3]. Here, we report a rare case of ileal tubular duplication deformity with an independent mesentery and blood supply in an adult male.

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Conflict of Interest

The authors declare that they have no conflict of interest.

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