



## Gastric outlet obstruction caused by an ectopic pancreas in a neonate: A case report



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### ABSTRACT

We herein report a neonate who presented with non-bilious vomiting at one day of age caused by a prepyloric ectopic pancreas. Ultrasonography clearly detected the presence of a submucosal mass preoperatively, which was treated with local gastric resection. Only 9 neonates with a symptomatic pyloric or prepyloric ectopic pancreas have been previously reported in the literature. Therefore, we reviewed and discussed the clinical features of neonates with this type of ectopic pancreas.

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Ectopic pancreas is defined as pancreatic tissue that lacks anatomic and vascular continuity with the main body of the pancreas [1]. It is commonly asymptomatic and incidentally found in the stomach, duodenum or upper part of the jejunum during operations and at autopsy [2]. Symptomatic ectopic pancreas in neonates is extremely rare. We herein report a one-day-old female neonate who presented with non-bilious vomiting caused by an obstruction secondary to an ectopic pancreas located at the prepyloric antrum.

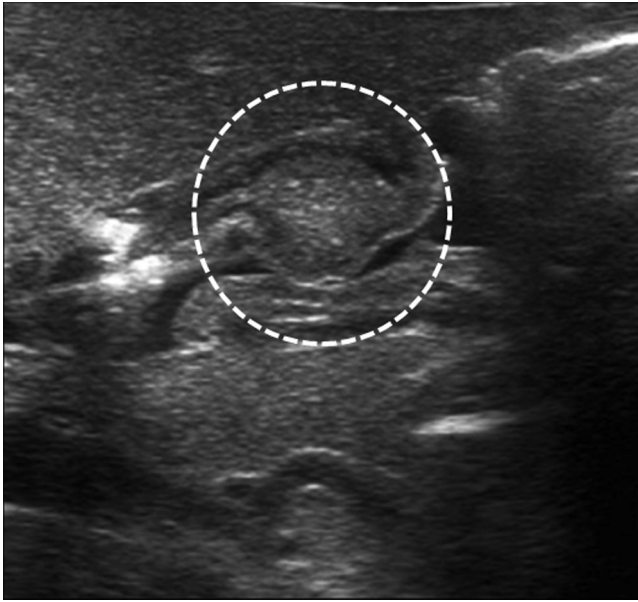
### 1. Case report

A 3125 g female baby, one of dichorionic diamniotic twins, was born at 37 weeks of gestation by cesarean section, indication for which was a previous cesarean delivery. Her prenatal surveys had revealed normal amounts of amniotic fluid. Her Apgar scores were 8 and 9 at 1 and 5 min after birth, respectively. Her oral intake was started soon after birth as usual, however, she presented with non-bilious vomiting 4–6 times per day on the first day after birth. She had been conservatively observed in the newborn nursery until six

days after birth. A physical examination at that time revealed a soft abdomen and normal bowel sounds without a palpable mass. The patient's body weight was 2768 g, which showed an 11.4% decrease compared to her birth body weight. Her blood tests were unremarkable except for mild hyperbilirubinemia. An abdominal X-ray demonstrated a gas in the large intestine predominantly and did not indicate a complete bowel obstruction. Abdominal ultrasonography (US) was then performed, which revealed a submucosal solid mass (measuring approximately 7 mm in diameter) at the anterior wall of the prepyloric gastric antrum (Fig. 1). The width of the pyloric wall and length of the pyloric channel were within normal limits, which excluded hypertrophic pyloric stenosis (HPS). An upper gastrointestinal (UGI) series demonstrated a narrow pylorus and a round-shaped defect of the contrast medium at the prepylorus in the prone position, potentially due to the above mentioned mass (Fig. 2). Thus, a jejunal tube was placed for enteral feeding. Contrast-enhanced abdominal computed tomography (CT) was performed to confirm the characteristics of the mass and it localized the slightly enhanced mass at the same site indicated on US. The preoperative diagnosis was a submucosal mass at the prepyloric gastric antrum, which included the differential diagnoses of ectopic pancreas and gastric duplication. At 16 days of age, the infant underwent exploratory laparotomy via an upper half circumumbilical incision. The mass was palpated at the anterior

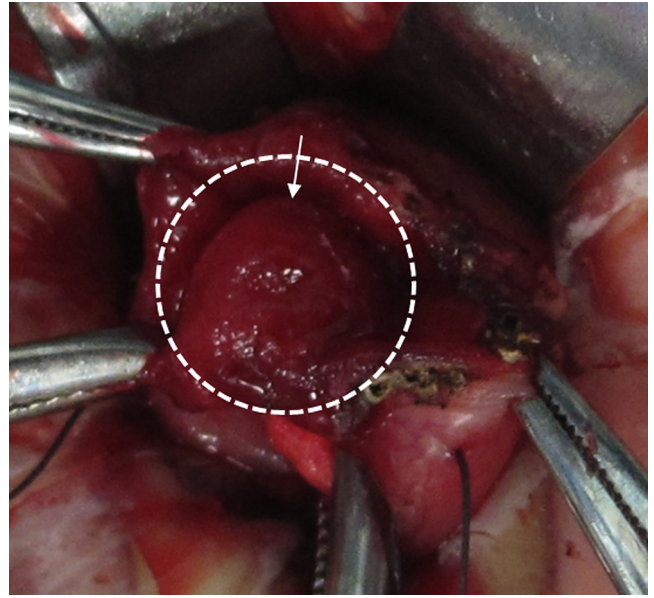
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**Fig. 1.** Abdominal ultrasonography at the age of 7 days revealed submucosal mass at the anterior wall of prepyloric antrum (dotted circle).

wall of the antrum and excised with a full thickness of the local gastric wall (Fig. 3). The defect of the antral wall was closed in a single layer with interrupted sutures. It had a central umbilication on the mucosal surface of the mass. The postoperative course was uneventful except for slow recovery of gastric emptying. She was discharged on the 24th postoperative day and has gained normal growth and development during the follow-up period of 18 months. The excised mass specimen consisted of a  $10 \times 10 \times 8$  mm, solid, milk-white colored tissue. A histologic examination revealed aberrant submucosal exocrine pancreatic tissue that had acini,

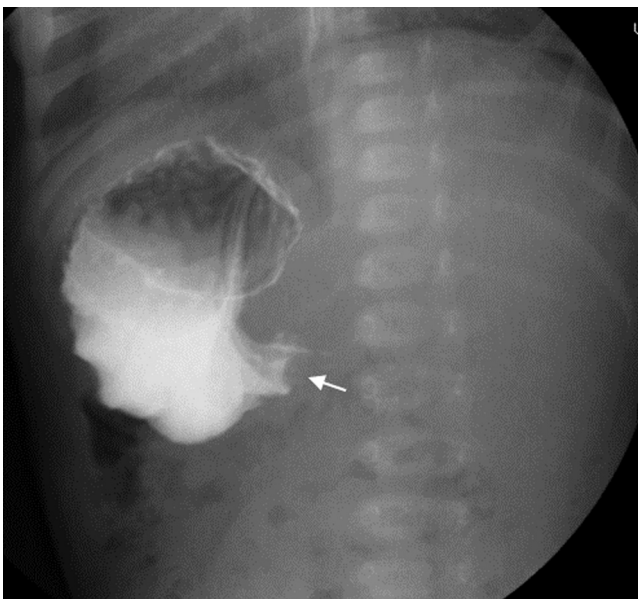


**Fig. 3.** Intraoperative finding: part of the anterior wall of prepyloric antrum was incised adjacent to the base of the submucosal mass (dotted circle), and the central umbilication was noted on the surface (arrow).

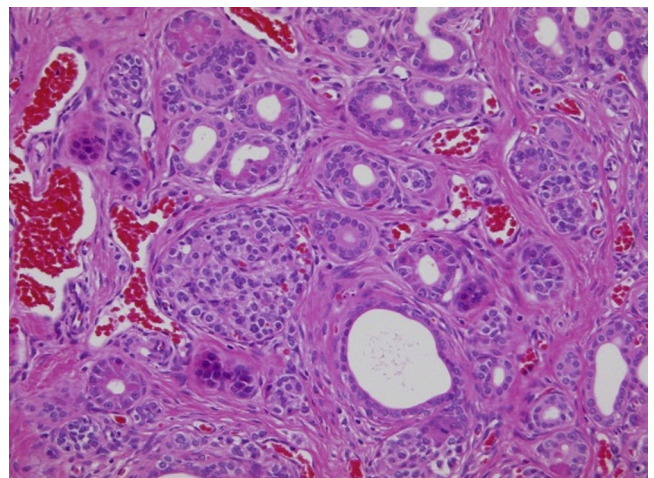
ducts, and islets cells, which was compatible with an ectopic pancreas (Fig. 4).

## 2. Discussion

Ectopic pancreas occurs in 1%–2% of autopsies and in 1:500 laparotomies with a male to female ratio of 3:1 [1]. Ninety percent of all cases are found in the stomach, duodenum, and jejunum, although it can be found throughout the gastrointestinal tract and in other intra-abdominal organs [2]. The majority of patients with ectopic pancreas are clinically asymptomatic. Its clinical manifestation may include some degree of obstruction resulting from the enlarged nodule or complications such as inflammation, ulceration, tumor, or intussusception [3].



**Fig. 2.** Upper gastrointestinal series demonstrated narrowed pylorus and a round-shaped defect of the contrast medium in the prone position at the prepylorus (white arrow).



**Fig. 4.** Histologic section of the submucosal mass (Hematoxyline eosine staining): pancreatic tissue with acini, ducts, and islets cells was noted in the layer of between submucosa and muscularis propria.

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