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Case Report

Pancreatic Rest Manifesting as Gastric Outlet Obstruction in a Young Adult: A Case Report

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Abstract

Pancreatic rest has been hailed as ectopic pancreatic tissue in medical literature. It is an uncommon entity whereby an extra-pancreatic tissue lodges away from the pancreas proper. Patients diagnosed with pancreatic rests are often asymptomatic. Conversely, few patients display symptoms. We herein describe the case of a young female presenting with intractable nausea, food aversion and occasional vomiting who was found to have pancreatic rest upon endoscopic visualization and endosonographic imaging, respectively. Her ectopic pancreatic tissue was extending into the muscularis propria, thereby patient was referred for surgical excision of her pancreatic heterotopic tissue.

Keywords: Pancreatic; Manifesting; Gastric; Obstruction; Young Adult

Introduction

Pancreatic rest is an uncommon diagnosis with an incidence of 1 to 2% as documented in medical literature [1]. Pancreatic rest can occur anywhere in the gastrointestinal (GI) tract. However, it has a predilection to the stomach and proximal small intestine, respectively [2]. Histologically, pancreatic rest is characterized by the following features: acinar cells formation, established ductal structures and independent blood supply [3]. Four types of pancreatic rest have been described thus far, whereby type I displays a striking similarity to the pancreas itself and type IV consisting of islets cells exclusively [4]. To date, the pathogenesis of pancreatic rest has not been fully elucidated. In light of this, three theories have been posited in medical literature in regard to the mechanism of pathogenesis underlying the formation of pancreatic rest: metaplasia theory, misplacement theory and aberrant notch signaling theory [5]. Most patients are asymptomatic. Symptoms are dictated by location and size of the pancreatic rest [6]. Symptoms can range from GI bleed, gastric outlet obstruction (GOO) and ulcerations to pancreatitis. Pancreatic rest can induce obstructive jaundice if it is located in the vicinity of the ampulla of Vater [7]. Ectopic pancreatic tissue can exhibit a more dramatic scenario when it results in an impending GI tract perforation. Endoscopic modalities, such as esophagogastroduodenoscopy (EGD) and endoscopic ultrasound (EUS), help further characterize and differentiate pancreatic rest from other submucosal tumors. If patients are asymptomatic, then expectant monitoring is warranted. When symptomatic, pancreatic rests should be removed either endoscopically or surgically.

Case Report

A 27-year-old female patient presenting for a 1-month history of abdominal fullness, inability to tolerate solids and liquids, food aversion, nausea and occasional vomiting. Patient is previously healthy and has no comorbidities or past surgical history. She takes no medications regularly. EGD was performed and revealed a subepithelial antral bulge (Black arrow) with central umbilication (White arrow) obstructing the distal stomach (Figure 1A and 1B). The gastric body and fundus were unremarkable. The duodenal bulb and second portion of duodenum were normal. A high index of suspicion for pancreatic rest was made thereby biopsy was not undertaken to prevent the development of pancreatic rest-itis. Patient was subsequently referred for EUS whereby the lesion was hypoechoic and extending into the muscularis propria. No lymph nodes were seen in the vicinity of the lesion. EUS+ fine need aspiration (FNA) were performed and revealed islands of pancreatic acini and dilated ducts extending through the muscularis propria, corroborating a diagnosis of pancreatic rest. Given that the pancreatic lesion was abutting the muscularis propria, the patient was ultimately referred for surgical excision of the heterotopic pancreatic tissue.

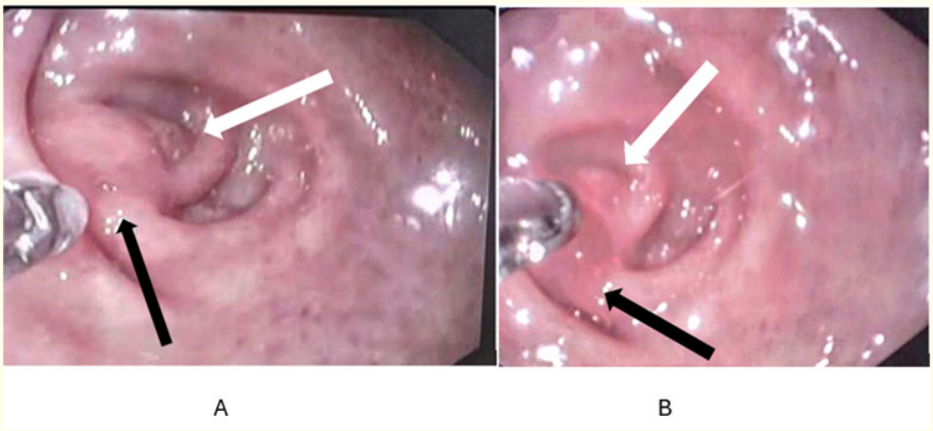

Figure 1: A, B: An esophagogastroduodenoscopy (EGD) revealing a sub-epithelial lesion (Black arrows) with central umbilication (White arrows), corroborating a diagnosis of pancreatic rest.

Discussion

Pancreatic rest has been coined many terms in medical literature: aberrant pancreas, ectopic pancreas, heterotopic pancreas and ectopic pancreatic tissue [1,3]. It was first described by Hunt and Bonesteel in 1727 whereby it was referred to as a diverticulum in the ileum. Pancreatic rests are submucosal tumors who display cystically dilated exocrine cells. They can also exhibit endocrine or both endocrine and exocrine cells. Incidence of heterotopic pancreatic tissue is 1 to 2% [1]. The stomach is the most commonly targeted site. Endoscopically, pancreatic rest is characterized by a firm and slightly irregular texture with a diameter size ranging from 0.2 to 4 cm. Pancreatic rests often display a central depression or umbilication consisting of a draining duct. Radiologically, a CT scan can reveal the following features: flat-ovoid shape, antral location, endoluminal growth pattern, ill-defined border and prominent enhancement of mucosa. From the same token, EUS often reveal the following characteristics: hypoechoic lesion with indistinct margins, a lesion involving the 3rd or 4th layers or a combination of both layers, and an anechoic duct [2]. Theoretically, biopsy should be taken from the central umbilication because it has a greater diagnostic yield.

The differential diagnosis of pancreatic rest may include: stromal cell tumor, lymphoma, carcinoid and adenomatous polyp [4]. Pancreatic rest is often asymptomatic. When symptomatic, heterotopic pancreatic tissue can manifest as: epigastric pain, dyspepsia, obstructive jaundice and intestinal obstruction. In other words, location dictates symptoms manifestation. In light of this, Gunjaca., *et al*. reported a case of acute abdomen associated with pancreatic rest whereby the inflammation of the pancreatic rest resulted in duodenal perforation [1]. Filippou et al. described a case of a pancreatic rest at the level of the ampulla of Vater in a 69-year-old female patient presenting with painless obstructive jaundice [2]. Furthermore, Monedero., *et al.* documented a case of intestinal intussusception triggered by the concomitant presence of pancreatic rest and an inverted Meckel's diverticulum [4]. Ugur Kantar et al. reported a case of intractable diarrhea caused by pancreatic rest. Surgical removal of the ectopic pancreatic tissue resulted in complete resolution of diarrhea [5].

Asymptomatic pancreatic rest can be followed-up expectantly. When symptomatic, management of pancreatic rest can be either endoscopic or surgical. Conventional snares, band-ligation and cap-assisted polypectomy represent endoscopic treatment modalities. Should the pancreatic lesion extend into the muscularis propria, surgical resection is warranted. Therefore, our patient was referred for surgery because her pancreatic rest involved the muscularis propria as was demonstrated via EUS.

Conclusion

In conclusion, pancreatic rest is an exceedingly rare entity which is often asymptomatic. Location and bulkiness are conducive to the manifestation of symptoms. We presented an unusual case of a pancreatic rest surfacing as GOO. Employment of endoscopic modalities, such as EGD and EUS is paramount to characterize pancreatic rest and tailor therapeutic implications. Nonetheless, future studies are warranted to further elucidate the mechanism underlying the pathogenesis of pancreatic rest and to standardize treatment modalities.

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