Perforated tubular duodenal duplication in a 79 year old woman: Case report and review of the literature

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ABSTRACT

INTRODUCTION: Enteric duplications are rare congenital anomalies of the digestive tract that can occur anywhere along its length, with the majority being found in the small intestine. The duodenum is the least common site. Almost all symptomatic duodenal duplications present early in life with abdominal pain and pancreatitis. To the best of our knowledge this is the first described case of a perforated tubular duodenal duplication in an elderly adult.

PRESENTATION OF CASE: We present a case of a perforated tubular duodenal duplication in an elderly woman. She presented with diffuse abdominal pain, fever, and tachycardia. Emergent exploratory laparotomy revealed a perforated duodenal duplication. Excision of the duodenal duplication and primary closure of the defect was performed successfully. The patient recovered well.

DISCUSSION: Enteric duplications are poorly understood anomalies of embryonic development. They can be cystic or tubular dorsal enteric remnants lying in communication with the alimentary tract that are distinct from diverticula. A tubular duodenal duplication is exceedingly rare, and this case is made even more notable in that such an anomaly presented with sepsis and occurred in a 79 year old woman. We are unsure why the duplication ruptured. To the best of our knowledge this case represents the first report of a ruptured tubular duodenal duplication in an elderly adult.

CONCLUSION: This is a very rare occurrence and has never been described in an elderly patient before. Excision and primary closure led to a good outcome.

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1. Introduction

Enteric duplications are rare congenital anomalies of the digestive tract that can occur anywhere along its length, with the majority being found in the small intestine.1 The duodenum is the least common site. Almost all symptomatic duodenal duplications present early in life with abdominal pain and pancreatitis.2 We describe a case of a 79 year old woman who presented with a perforated tubular duodenal duplication. To the best of our knowledge this is the first described case of a perforated tubular duodenal duplication in an elderly adult.

2. Report of a case

A 79 year old woman with no significant past medical history was woken from sleep with abdominal pain, nausea, and vomiting. She presented to her local emergency department where she underwent a computed tomography (CT) scan with oral contrast (Fig. 1). She was diagnosed with a suspected perforated duodenal diverticula and transferred to our institution for surgical management.

Upon arrival she was febrile, tachycardic, and in severe pain, leading us to take her to the operating room (OR) for emergent exploratory laparotomy. In the OR a large perforated duodenal mass was discovered. Further dissection revealed a lumen with two distinct connections to the duodenum, allowing us to diagnose a complete tubular duodenal duplication (Fig. 2). The duodenal duplication was excised and the duodenum was closed. A feeding gastro-jejunostomy tube was placed. Upper gastrointestinal swallow study imaging on post-operative day (POD) four showed no anastomotic leak from the duodenum. The patient recovered well and was tolerating a soft mechanical diet upon discharge to home on POD 13.

3. Discussion

Enteric duplications are poorly understood anomalies of embryonic development. They can be cystic or tubular dorsal enteric

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remnants lying in communication with the alimentary tract that are distinct from diverticula. They classically have three characteristics as proposed by Ladd and Gross: (1) continuity and strong adherence to some part of the alimentary tract, (2) a smooth muscle coat, (3) and a mucosal lining consisting of one or more cell types normally observed in the alimentary tract. The duodenum is the most rare site of duplications, accounting for approximately 5%. Most duplications are cystic, accounting for 81% of enteric duplications. Perforated tubular duplications are rare and few have been reported in the literature. All that have been reported occurred in young children.

Differentiating a tubular from a cystic duodenal duplication can be difficult. Endoscopic retrograde cholangiopancreatography (ERCP), CT, and magnetic resonance imaging (MRI) have been found useful for defining the nature of the duplication. ERCP has also proven useful for treatment of cystic duplications, though no published literature addresses endoscopic treatment of tubular duplications. Overall, surgical excision remains the gold standard for treatment of symptomatic duplications. Careful evaluation of the biliary system should be made either prior to surgery or intraoperatively to assess for involvement of the ampulla of Vater. No recommendations exist for management of asymptomatic duodenal duplications.

A tubular duodenal duplication is exceedingly rare, and this case is made even more notable in that such an anomaly presented with sepsis and occurred in a 79 year old woman (Fig. 3). We are unsure why the duplication ruptured. Reports in the literature exist describing ectopic pancreatic or gastric tissue in cystic duplications, though no mention is made of ectopic tissue in tubular duplications. Our specimen was found to have a normal duodenal mucosal layer. To the best of our knowledge this case represents the first report of a ruptured tubular duodenal duplication in an elderly adult.

4. Conclusion

This is a very rare occurrence and has never been described in an elderly patient before. Excision and primary closure led to a good outcome.

Conflict of interest statement

None.
Funding

None.

Ethical approval

Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

Author contributions

Matthew Lopez performed the background research, writing of the manuscript, and submission of the manuscript. He has no conflicts of interest. Tabetha Bradley performed the editing of the manuscript. She has no conflicts of interest. Andrew Harrison performed the editing of the manuscript. He has no conflicts of interest. Andan Alseidi edited and advised the manuscript. He also provided the images in the manuscript. He has no conflicts of interest. No financial support was required in the preparation of this manuscript.

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