Gastric Outlet Obstruction from Duodenal Lipoma in an Adult

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Abstract

The duodenum is a rare site for gastrointestinal lipoma with less than 230 cases reported in the literature. Although, peptic ulcer disease remains the most common benign cause of gastric outlet obstruction (GOO), duodenal lipomas remain a rare, but possible cause of GOO and could pose a diagnostic challenge, especially in countries where access to endoscopy and modern imaging techniques poses a challenge. The authors present a case of GOO in a 40-year-old male, secondary to a duodenal lipoma. It was successfully treated by a transduodenal resection through a midline laparotomy. The histology report confirmed it was a submucosal lipoma.

Keywords: Duodenotomy, lipoma, obstruction

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Introduction

Lipomas of the gastrointestinal tract (GIT) are rare (1:600 necropsies).[1] Owing to recent advances in endoscopy and modern imaging techniques such as computed tomography (CT) scan and magnetic resonance imaging, more cases are being diagnosed and treated. However, duodenal lipomas are very rare with lesser than 230 cases reported in the literature most of these are from autopsy records rather than clinical experience.[2] Reports of treatment of duodenal lipoma are either by endoscopic technique or open surgery. The open surgery may involve a duodenotomy or segmental resection.

We present a case of duodenal lipoma treated by open surgery involving a duodenotomy.

Case Report

A 40-year-old man presented to our institution with a 3 months history of projectile, copious vomiting (which consisted of recently ingested food), epigastric fullness, constipation and abdominal discomfort. There was no history of hematemesis, melena or change in bowel habit. He had a 7 months history of dyspepsia.

Clinical examination, showed a chronically ill-looking man, emaciated, pale and dehydrated. Visible peristalsis was noted at the upper abdomen with demonstrable succussion splash. He had no ascites, organomegaly or a palpable mass. Barium meal showed a dilated stomach with a large amount of residual food debris mixed with barium sulfate [Figure 1]. An extrinsic pressure effect was seen in the pyloric region of the stomach with resultant gastric outlet obstruction (GOO). The duodenum was not demonstrated. An abdominal ultrasound scan showed a large and prominent stomach, with the gastric lumen harboring large food debris with near absence of gastric emptying. An area of fusiform bowel thickening was noted near the duodenal bulb. He could not be investigated further due to financial constraints. We were, therefore left with no option than to carry out an exploratory laparotomy, after fluid and electrolyte resuscitation. The finding was a pedunculated, submucosal lipoma arising from the second part of the duodenum that extends to occlude the distal duodenum and proximal jejunum [Figure 2]. A duodenotomy with wedge resection of the pedunculated lipoma and primary repair was done. A sleeve of duodenal mucosa was taken along with the lipoma because of a suspicious nodule on the mucosa [Figure 2]. The post-operative course was uneventful and the patient was discharged home on the 7th day after the surgery. Final histopathological diagnosis of the specimen was a submucosal duodenal lipoma measuring 11 cm × 8 cm × 6 cm.

Discussion

Lipomas are mesenchymal tumors and are the third commonest benign tumors affecting the GIT.[2] The most common site involved in the GIT is the colon followed by the small intestine, with duodenal lipomas being very rare.[2] In a study involving

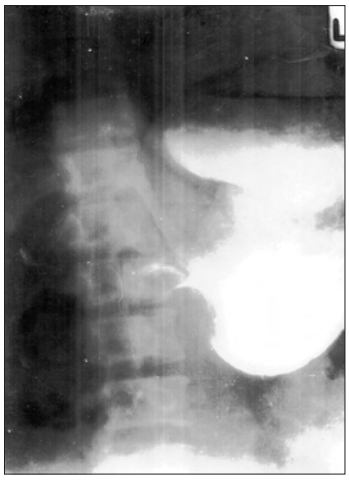

Figure 1: Pre-operative barium meal showing the extrinsic pressure effect

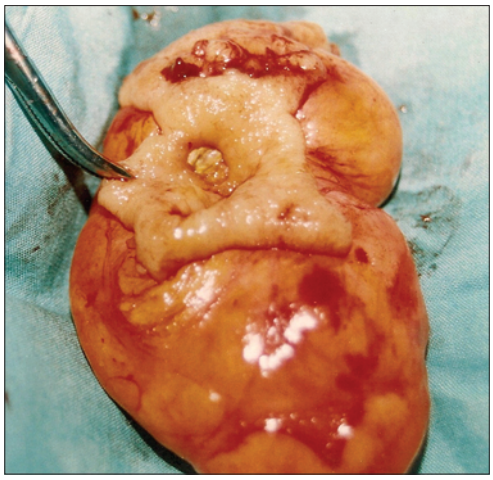

Figure 2: Excised submucous lipoma showing naked fat sign

clinical and autopsy records by Botsford *et al.*,[3] only five duodenal lipomas in 115 benign GIT tumors were described while good reported 17 duodenal lipomas out of 659 cases of small intestinal tumors.[4]

Comfort in 1931 reported that most gastrointestinal lipomas causing symptoms are ≥ 4 cm in size while the majority of them were asymptomatic.[5] Epigastric fullness is the most common clinical presentation of duodenal lipomas.[6] The symptoms gradually become worse culminating in GOO, ulceration and hemorrhage owing to stretching of the mucosa.[6] Uncommon forms of presentation that have been reported include intussusceptions due to the relatively fixed anatomical position of the duodenum and pancreatitis.[7]

Duodenal lipomas are divided into submucosal, which is more common and seen in our patient and subserosal. They are either sessile or pedunculated.

Diagnosis can be established by radiological, endoscopic or operative means. In upper GIT contrast study, the appearance is that of a smooth, non-ulcerating filling defect of the duodenum, which can occasionally be compressed by fluoroscopy (not specific for lipomas).[2] An abdominal CT scan finding of a well-circumscribed hypo dense lesion with a density ranging from −50 to −100 HU can be diagnostic for duodenal lipomas.[8] Endoscopic ultrasonography (EUS) can be of value in the diagnosis of submucosal duodenal lipomas. EUS features of a homogeneous whitish hyperechoic mass within the submucous layer are highly characteristic of duodenal lipomas.[9]

GIT endoscopy is the diagnostic procedure of choice, either by the appearance of a pedunculated mass of fat or of a lesion stretching the submucosa and when the mucosa is uncovered, the shiny yellow color of lipoma becomes apparent (the naked fat sign).[10]

Endoscopically, lipomas can be excised by the snaring or unroofing technique, but incomplete excisions in large lesions remains a problem.[11] Therefore, open surgery is indicated when endoscopic excision is not feasible, the nature of the lesion cannot be ascertained or if the clinical presentation demands it (e.g., intussusception). It also ensures complete excision of the lipoma, which is not always possible endoscopically. The choice of procedure is dependent upon the patient's condition as well as the size and position of the lesion. There are two open operative procedures-namely, excision of lipoma through duodenotomy (which was done for our patient) and limited bowel resection and anastomosis.[2]

Conclusion

Duodenal lipoma though a rare cause of GOO should always be considered when managing patients with GOO. This becomes more pertinent in those third world countries where modern diagnostic facilities may not be available or accessible. Diagnostic laparotomy such as in this case may be the last hope for such patients to obviate needless mortalities.

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