Diagnosis and Surgical Resection for a Duodenal Lipoma with Gastric Outlet Obstruction: A Case Report

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Introduction

Gastrointestinal lipomas, scarce benign tumors of the gut, are rarely located in the duodenum. There is a narrow number of the patient which are symptomatic and may have upper gastrointestinal obstruction or bleeding(1-3). We report a case of a 63-year-old woman who presented to us with intermittent gastric outlet obstruction along with duodenal lipoma which underwent surgical resection.

Case

A 63-year-old woman presented with tachycardia, epigastric fullness, and nausea from around 6 hours ago. She had two weeks history of dyspepsia and recurrent episodes of vomiting an hour after her meal which was containing undigested food materials. Her symptoms were always subsided by vomiting. She had a past history of peptic ulcer which had been diagnosed last year by endoscopy, and tubal ligation 35 years ago, and a history of hypertension for 6 years with a prescription of losartan 25 mg every two days. In physical examination, upper abdominal distension with mild tenderness was the only relevant finding and the rest of the exam was normal. She was admitted to the GI ward, lab test was obtained, an abdominal x-ray was requested, IV line and NG tube were inserted that evacuated more than 400 ml of bilious fluid. An upper gastrointestinal endoscopic evaluation was done and showed an elevated sub epithelial lesion with normal mucosa. Endoscopic ultrasound showed a submucosal bulge at the Duodenal bulb that on ultrasound view appears to be a hyperechoic mass originating from the second (submucosa) layer measuring about 24.5 to 16.6 mm in diameter, and a round hypoechoic lymph node with a maximum diameter of 5.75 mm adjacent to the lesion (figure 1).

Then spiral computed tomography scan with oral and with and without intravenous contrast and triphasic MDCT was done and showed tubular filing defect with coronal height up to 30 mm and axial width up to 12 mm within D2 segment lumen of the duodenum (figure 2).
all the imaging findings were supportive of a duodenal lipoma. Finally, she was prepared for operation surgery with the diagnosis of lipoma. After performing a midline laparotomy and abdominal exploration which was negative for any metastatic lesion, Kocher’s maneuver was done, after finding the mass with palpation, a lateral dudenotomy was done at the closest site to the mass. There was a submucosal mass in posteromedial wall of D1. It was resected by a single apply of a 60 mm Endo GIA stapler beneath the mass. Dudenotomy was repaired in single layer and the patient was transferred to ward. The postoperative period was uneventful and she was discharged on the 4th post-op day with food tolerance and normal bowel movements. Final histopathological analysis showed a duodenal lesion consisting of a piece of small intestine measuring 2.8 cm in length and 2 cm in diameter, a submucosal well-delineated neoplasm composed of mature adipocytes separated by delicate fibro vascular bundles, which confirmed the diagnosis of lipoma (figure 3,4).
Figure 3. A 3.5 x 2 x 0.7 cm encapsulated submucosal lesion with yellowish homogeneous color after duodenotomy.

Figure 4. Microscopic examination of small intestinal lipoma. (A) Small intestinal mucosa (bracket), (HEx40). (B) Submucosal lipoma (arrow), (HEx40). (C, D) Mature adipose lobules separated by delicate fibrovascular bundles (C: HEx100, D: HEx400).

Discussion

Duodenal lipoma is a benign and relatively rare gastrointestinal tumor with slow growth which reported cases indicated is more common in the fifth and seventh decade of life and male are more contracted (3, 4). Anatomically most duodenal lipomas appear in the second part of the duodenum, and histologically are submucosal, circular, or oval with regular boundary (2, 3, 5). Duodenal lipoma has no diagnostic clinical
symptom and mostly remains asymptomatic unless be bulked up and obstructive, ulcerative, necrotic by stretching of the mucosa, intussuscepted, and more rarely causes pancreatitis. The symptoms are on lesions size and location, and the most symptomatic lesion has a size of more than 2 cm in diameter(2, 6-10).

Radiological, endoscopic, or operative means can help in diagnosis. A well-defined hypo-dense duodenal lesion with a density of between -60 and -120 HU on CT scan, and also high-intensity on T1-weighted images and usually intermediate intensity on T2-weighted images on MRI all indicate duodenal lipoma. Endoscopic ultrasonography can also help in determining involved layer and depth, and hyper-echogenicity is arising from (submucosa) and uniformity. Further more, Endoscopic evaluation is necessary to localize where the lesion exist, which help to choose the proper strategy(11-15).

The strategy for resection of the lesion whether by endoscopy or by surgical resection, depends on the size of the lesion, and more on being pedunculated or sessile and involvement of tunica muscularis. In dealing with a pedunculated smaller lesion which is not reached tunica muscularis, endoscopic resection has priority, otherwise, in cases of multiple lipoma, sessile lesion, adjacency to the papilla of Vater, giant lipoma trespassing 10 cm, disturbance of endoscopic vision when bleeding, and incapacity to specify layer and hardness of discernment between duodenal and gastrointestinal stromal tumor, surgical resection is preferred(6, 8, 16-18). Reported literatures have indicated successful fractional resection by endoscopy even for tumors in size of larger than 4 cm, but in this case surgical resection was applied instead because of adjacency of lesion to papilla of Vater(16).

**Conclusion**

Duodenal lipoma is a rare gastrointestinal tumor, which is mostly asymptomatic, may become symptomatic, and lead to bleeding, intussusception, or obstruction. Duodenal lipoma is a benign tumor therefore less invasive strategy such as endoscopic or laparoscopic resection of the tumor has priority if possible. In cases of multiple lipoma, sessile lesions, adjacency to the papilla of Vater, giant lipoma, endoscopic procedure failure, and uncertainty in distinguishing the original layer of the tumor (stromal or duodenal), surgical resection is preferred. In this case, because of the adjacency of the tumor to the papilla of Vater, open surgery was applied.

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Not applicable

**Declaration**

**Ethics approval and consent to participate:**This study followed the Helsinki Declaration of the World Medical Association. The patient signed informed consent.

**References**


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