Duodenal Intussusception of Brunner's Gland Adenoma Mimicking a Pancreatic Tumour

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ABSTRACT:
Brunner's gland adenoma is a rare benign tumour of the duodenum. It is usually asymptomatic but may occasionally present with gastrointestinal haemorrhage and obstruction. We report a 40-year old lady, presenting with upper gastrointestinal bleeding and was found to have prolapsed and intussuscepted Brunner's gland adenoma of the duodenum, which mimicked the appearance of a tumour in the head of pancreas.

KEYWORDS:
Brunner's gland adenoma, gastrointestinal bleeding, intussusception

INTRODUCTION

Brunner was the first to describe an alkaline-based mucin-secreting gland in the submucosa of duodenum in 1688. The first reported case of Brunner's gland adenoma was by Curveilheir in 1835.

Brunner's gland adenoma is an extremely rare benign duodenal neoplasm, accounting for an estimated incidence of 0.008% in a single series of 215,000 autopsies. A recent study by Perez et al reported eight cases of Brunner's gland tumours from sixty two patients with benign nonampullary duodenal neoplasms [1].

The most common clinical features of Brunner's gland adenoma are gastrointestinal bleeding and symptoms of obstruction. Thus far, there have been two reports of patients presenting with duodenal intussusception and one which mimicked the appearance of a tumour of the head of pancreas [2]. We report a case of a prolapsed and intussuscepted, Brunner's gland adenoma of first portion of duodenum, which also mimicked the appearance of a pancreatic head tumour.

CASE REPORT

A 40-year-old female presented with two-month history of melaena, diarrhoea and epigastric discomfort associated with significant weight loss of over 14 kg and symptomatic anaemia. On clinical examination, there was tenderness over the epigastric region with no mass palpable.

Upper gastrointestinal endoscopy showed an external compression on the pyloric antrum resulting in distortion of the pylorus and preventing scope entry into the duodenum. Contrast enhanced computed tomography scan of the abdomen showed a well defined eccentrically located enhancing mass with a 'whorled' appearance involving the first and the second part of duodenum resulting in luminal narrowing. There was no clear fat plane between the mass and the head of pancreas. Thus, there was possibility of duodenal tumour invasion to the head of pancreas or vice versa (Figure 1).

Endoscopic ultrasound revealed a large whorled lesion measuring 6 cm diameter arising from the duodenum, with no clear fat planes between this mass and the head of the pancreas. A provisional diagnosis of duodenal tumour with extension into the pancreas was made with a differential diagnosis of tumour of the head of the pancreas, invading into the duodenum.

She was planned for a Whipple's pancreaticoduodenectomy. However, intra-operatively, a large ulcerating pedunculated tumour measuring 5 X 6cm was found at the posterior wall of the first part of duodenum. The tumour had prolapsed and intussuscepted, into the second part of duodenum (Figure 2). There were no lymph node enlargement and the tumour was free from the pancreas. The intussusception was reduced and wide local excision of the tumour was done via a pyloroduodenotomy. The pyloroduodenotomy was closed primarily. Her post operative recovery was unremarkable and she was discharged four days after the surgery.

Histopathology report revealed a Brunner's gland adenoma. She has remained asymptomatic for two years now.

DISCUSSION

Brunner's gland adenoma commonly occurs in the fifth and sixth decades of life with no gender predominance. Its clinical presentations include upper gastrointestinal bleeding, obstructive symptoms, such as vomiting and epigastric bloatedness, and rarely intussusception and diarrhoea, possibly due to duodenal motor disturbances. Aetiology and pathogenesis of this duodenal lesion remained unknown, though most studies postulated that an increased acid secretion possibly stimulates the growth of Brunner's gland resulting in hyperplasia[2].

Most of these tumours are asymptomatic and are only diagnosed incidentally through endoscopy. Computed tomography (CT) of the abdomen is used in large lesion to determine extra-luminal involvement. CT is otherwise associated with poor sensitivity in small tumours [1]. Endoscopy remains the diagnostic tool

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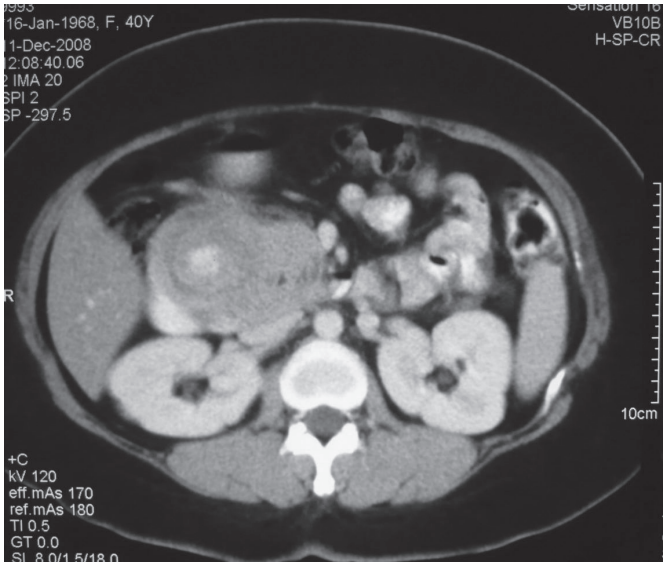

Figure 1 CT scan showed a whorled tumour at the periampullary region

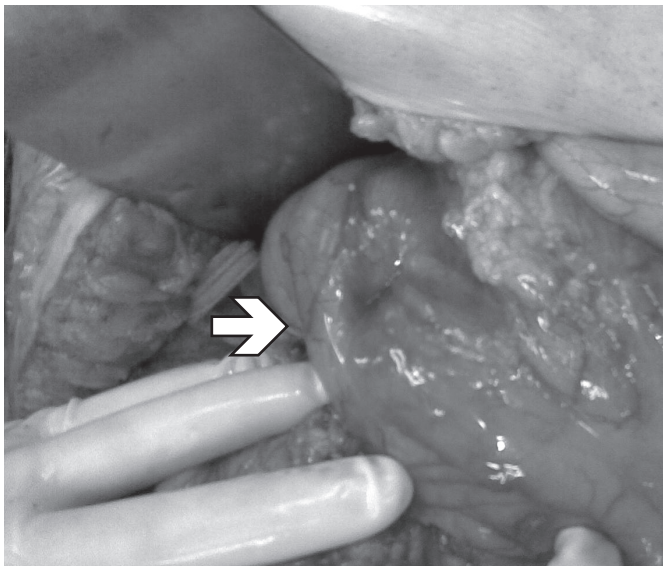

Figure 2 Intra-operative finding of prolapsed and intussuscepted tumour arising from the first part of duodenum (arrow)

of choice with added advantage of supplementary endoscopic biopsy and endoscopic ultrasonography. In our case, upper endoscopy was not possible as the scope was unable to pass through the pylorus. We proceeded with abdominal CT and subsequently, endoscopic ultrasonography to determine the origin and extension of the tumour.

There are two treatment approaches for duodenal tumours, which include endoscopic resection and open or laparoscopic surgery. Perez et al, in his study of 62 patients with benign nonampullary duodenal neoplasm, proposed that lesions measuring less than 1cm and within the range of 1 to 2cm, which are limited to the mucosa through endoscopic ultrasonography, could be treated with endoscopic polypectomy. However tumours measuring more than 2cm or ranged between1 to 2cm with submucosal extension, were recommended for surgical resection [1].

Endoscopic resection techniques include standard snare polypectomy, injection and polypectomy, injection and cutting, endolooping and polypectomy, polypectomy with twice snaring and haemoclip-assisted polypectomy [3]. As for the larger tumours, the surgical procedure of choice, in the form of either open or laparoscopic surgery, depends on the availability of expertise and condition of patients. The recommended procedures are transduodenal polypectomy and segmental duodenal resection.

Transduodenal polypectomy is recommended for tumours at the first part of duodenum whereas segmental duodenal resection is more suited for tumours in the third and fourth part of duodenum. Pancreaticoduodenectomy may be required for lesions arising from the second part of the duodenum, particularly those that are near the ampulla [1].

In our patient, we were unable to confirm the nature and origin of the tumour preoperatively: whether it's arising from the duodenum or the head of pancreas. The tumour was large and was not accessible through endoscopy. The patient was subjected to laparotomy with the intention of pancreaticoduodenectomy. Intraoperatively, the duodenal tumour was palpably confined to the duodenum and confirmed through a pyloroduodenotomy. In conclusion, this case showed us that Brunner's gland adenoma can intussuscept and mimick a head of pancreas tumour, and that meticulous intraoperative examination and palpation may avert the danger of performing an unnecessary pancreaticoduodenectomy.

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