Brunner's Gland Hamartoma Causing Gastric Outlet Obstructive Symptoms

SATTAM S. LINGAWI, MD, and J. DOUGLAS FILIPENKO, MD, Vancouver, BC

ABSTRACT: Brunner's gland hamartomas are rare benign tumors of the duodenum. They are usually small and asymptomatic. We describe an unusual presentation of a Brunner's gland hamartoma.

THE DIFFERENTIAL DIAGNOSIS of duodenal filling defects is long. It includes both benign and malignant neoplastic masses, as well as pseudotumors. Brunner's gland hamartomas is a relatively uncommon benign condition that causes mucosal nodularity and smooth filling defect in the duodenum and should be considered in such differential diagnosis.

CASE REPORT

A 47-year-old woman had recurrent episodes of postprandial upper abdominal pain of 6 months' duration, occasionally relieved by vomiting. There was no history of hematemesis, melena, anemia, or weight loss.

Findings

A barium meal and follow through revealed a 3 x 3 cm solitary mural mass distending the duodenal cap. The mass had a smooth nonulcerated mucosal surface (Fig 1). Abdominal ultrasonography showed a homogeneous, mildly hyperechoic mass that was well demarcated (Fig 2). Peristalsis was observed around the lesion. No ultrasonographic evidence of local invasion or distant metastasis was detected. Contrast-enhanced computed tomography (Fig 3) showed a soft-tissue density mass distending the duodenal cap, with no evidence of regional or distant metastasis.

On endoscopy, a nonulcerated mass was detected arising from the superior wall of the duodenal cap. The stomach and the remainder of the duodenum were unremarkable. Endoscopic biopsies revealed partially eroded duodenal mucosa with a significant degree of reactive atypia associated with the mucosal epithelium. The lesion was surgically resected via a supraumbilical midline incision. The duodenum was exposed and longitudinal duodenotomy was done. The tumor was removed from the duodenum.

Pathologic Findings

The tumor had a lobulated contour with a maximum diameter of 3 cm and a broad base. In cross section, the mass was solid, tan-yellow in color and had a well-circumscribed, lobulated border (Fig 4). The mucosal surface was eroded but otherwise intact.

Histologically, the mass was characterized by numerous lobules of benign appearing Brunner's glands and small duct structures, within fibromuscular stroma. There were no atypical cytologic features.

From the Departments of Radiology and Laboratory Medicine, St. Paul's Hospital, University of British Columbia, Vancouver.

Reprint requests to Sattam S. Lingawi, MD, Vancouver General Hospital, Department of Radiology, Heather Pavilion, Floor A, Room 63, 855 W 12th Ave, Vancouver, BC V5Z 1M9.

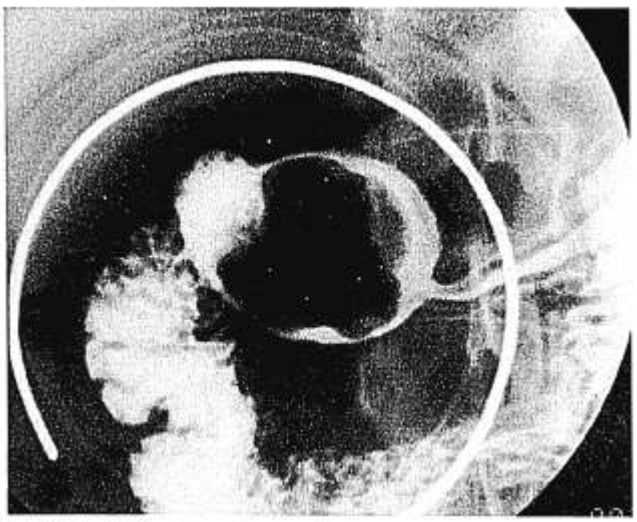

FIGURE 1. Lobulated mass (3 x 3 cm) with smooth mucosal surface within duodenal cap.

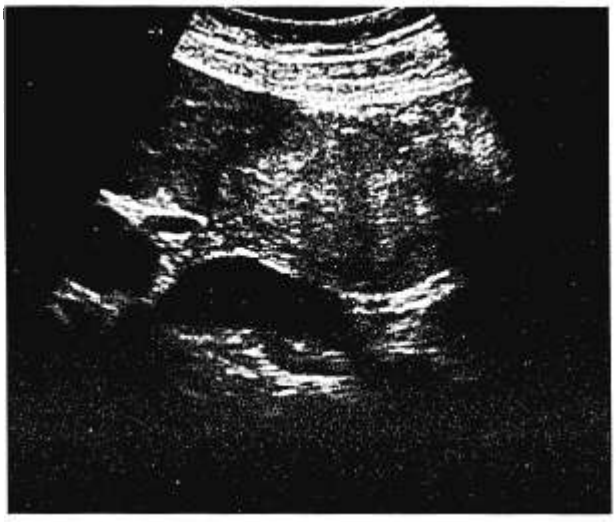

FIGURE 2. Solid, mildly echogenic mass in duodenum without extraluminal extension.

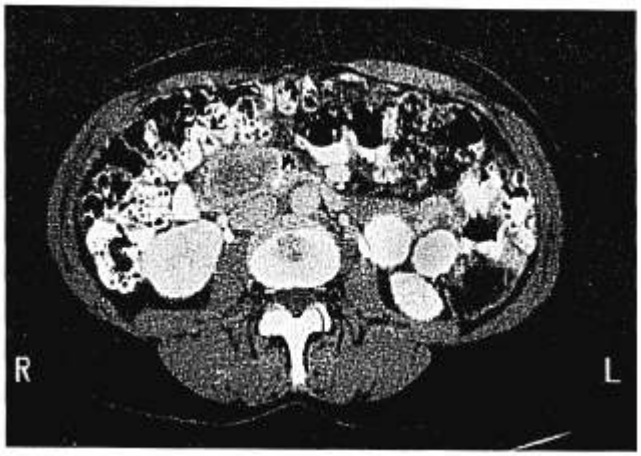

FIGURE 3. Solid mass distends duodenum without evidence of extraluminal extension.

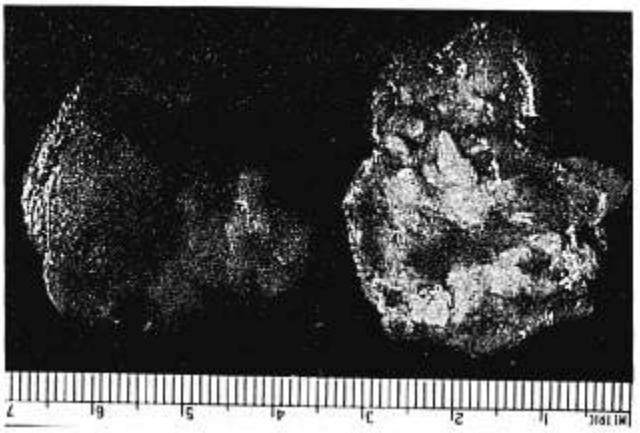

FIGURE 4. Solid, well-circumscribed mass (3 x 3 cm) with tan-yellow color and intact mucosal surface.

DISCUSSION

Brunner's gland hamartomas were first documented in medical literature by Curveilhier in 1835 and by Salvioli in 1876.[1,2] These are uncommon benign tumors of the duodenum, representing approximately 5% of all duodenal neoplasms.[3] They are usually located within the posterior wall of the first part of the duodenum and tend to appear in the fourth and fifth decades of life without predominance by either sex.

Various pathologic names have been attached to this entity, including adenoma, adenomatous hyperplasia, nodular hyperplasia, Brunner's gland nodule, and hamartoma, of which the latter is the most appropriate, since it is composed of an admixture of Brunner's glands, ducts, and adipose tissue.

There are three main pictures of clinical presentation. The first group includes patients with no symptoms or minimal vague abdominal discomfort in which the tumor is discovered incidentally during investigation for other reasons. In this group, the tumors tend to be small (<2 cm). The prevalence of this group is difficult to determine but is thought to represent more than 50% of all cases. Patients in the second group have gastrointestinal hemorrhage, which is usually chronic in nature without hemodynamic instability. This group represents approximately 43% of cases. Rarely, massive haematemesis may occur from such tumors. Patients in the third group group have obstructive symptoms and tend to have larger tumors (>2 cm), which are thought to be rare.[4,5]

Since Brunner's gland hamartomas are submucosal in location, endoscopic biopsies are frequently noninformative and the final diagnosis will depend on gross and histologic examination of the tumor. In fact, some larger tumors can cause erosive and inflammatory changes within the overlying mucosal surface. Sometimes, the degree of inflammatory atypia can be so marked as to raise the question of malignancy. Cases of severe dysplasia of Brunner's gland ductal epithelium, and duodenal carcinoma of Brunner's glands have been reported.[6,7]

Since most of these lesions are asymptomatic and are discovered as incidental small nodular changes in the duodenum, the treatment is usually conservative in clinical and radiologic follow-up. Endoscopic or surgical resection of the tumor is indicated whenever the patient is symptomatic or the suspicion of malignancy is raised.

References

1. Goldman RL: Hamartomatous polyp of Brunner's glands. *Gastroenterology* 1963; 44:57-62
2. Schluger LK, Rotterdam H, Lebwohl O: Gastrointestinal hemorrhage from a Brunner's gland hamartoma. *Am J Gastroenterol* 1994; 89:2088-2089
3. Chrwastie AC: Duodenal carcinoma with neoplastic transformation of the underlying Brunner's glands. *Br J Cancer* 1953; 7:65-67
4. Osborne R, Toffler R, Lowman RM: Brunner's gland adenoma of the duodenum. *Am J Dig Dis* 1973; 18:674-689
5. Levine J, Burgart L, Wong K: Brunner's gland hamartomas: clinical presentation and pathological features of 27 cases: *Am J Gastroenterol* 1995; 90:290-294
6. Rotterdam H, Enterline H: *Pathology of the Stomach and Duodenum.* New York, Springer-Verlag, 1989
7. Kouraklis G, Kostakis A, Delladetsima J: Hamartoma of Brunner's glands causing haematemesis. *Scand J Gastroenterol* 1994; 29:841-843