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Gastrointestinal Radiology

Carcinoid Tumors of the Duodenal Cap Presenting as Multiple Polypoid Defects

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Abstract. Carcinoid tumors of the duodenal bulb usually present as a single polypoid mass. A case is described in which the lesion developed as multiple polypoid defects in the duodenal cap. In the proper setting, carcinoid should be considered in the differential diagnosis of multiple polypoid lesions the first portion of the duodenum.

Key words: Duodenum, neoplasm – Gastrointestinal tract, carcinoid.

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Carcinoid tumors of the duodenum comprise approximately 2.3% of gastrointestinal carcinoids [1]. The usual presentation is that of a solitary polypoid mass ranging in size from 0.3 to 4 cm. The average age at time of detection is 58 years with a range of 44–70 years [2–5]. This case is unusual in that carcinoid tumors presented as multiple small polypoid defects of the duodenal bulb discovered during an upper gastrointestinal examination. The polypoid defects varied in size from 0.8 to 1.4 cm.

Case Report

A 47-year-old man was admitted for evaluation of asymptomatic anemia noted on a routine CBC performed during an outpatient visit for complaints of hip pain.

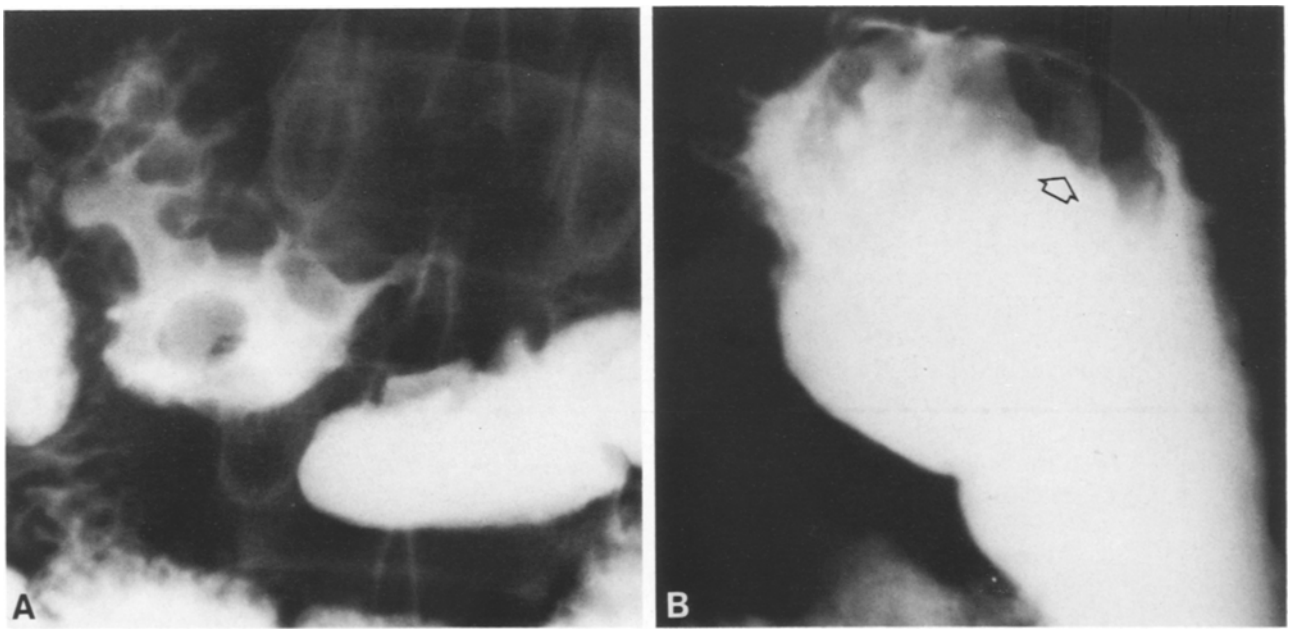

Fig. 1. A Multiple polypoid masses in the duodenal bulb produced by carcinoid tumors. **B** Metastatic carcinoid lesion in the fundus of the stomach (*arrow*)

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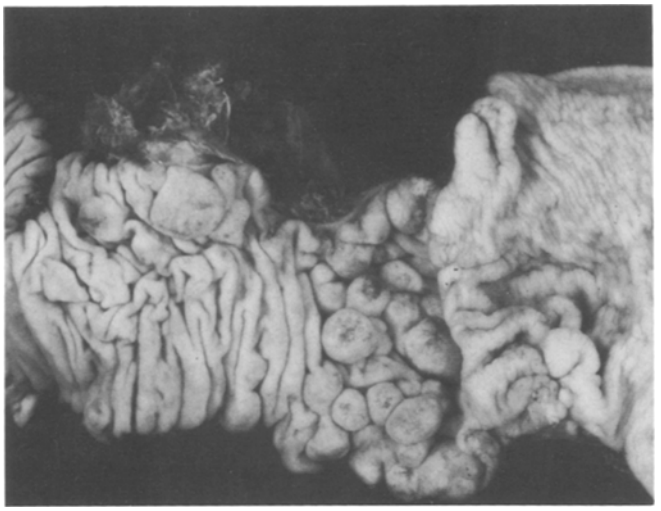

Fig. 2. Pathological specimen shows multiple polypoid carcinoid tumors in the duodenal bulb, some of which have small central umbilications

An upper gastrointestinal examination demonstrated multiple filling defects in the duodenal cap and a single polypoid lesion in the fundus of the stomach (Fig. 1). Endoscopy confirmed the presence of the lesions in the 2 sites, but biopsy specimens were inconclusive revealing inflammatory tissue. Exploratory laparotomy disclosed multiple duodenal polyps and a fundal mass. The liver was normal. Histopathological examination of the duodenal polyps was consistent with carcinoid neoplasms with silver stain characteristics of primary mid-gut-type tumors. The lesion in the fundus of the stomach was considered to be metastatic as it also showed mid-gut carcinoid silver staining features.

Subsequently, the patient underwent an 80% subtotal gastrectomy, cholecystectomy, and pancreatoduodenectomy.

He remains alive 6 years after the original diagnosis and operation for the carcinoid tumors, and has no symptoms of the carcinoid syndrome, although there was metastatic disease in regional lymph nodes at operation. He is currently being treated for chronic renal failure and secondary hyperparathyroidism. He is asymptomatic from the standpoint of his tumors. His anemia persists and is attributed to chronic renal disease. Extensive work-up failed to establish evidence for a multiple endocrine neoplasia.

Discussion

The multiple polypoid presentation of these carcinoid tumors in the first portion of the duodenum mimics hyperplasia of Brunner's glands. Lymphoid hyperplasia can produce a similar appearance, but some of the lesions are usually umbilicated [7]. However, at least one of the nodules in this case suggests an umbilication on the upper GI series, and the pathological specimen confirmed this finding (Fig. 2). Ectopic gastric mucosa can cause multiple elevated lesions in the cap, but they are usually small (1–6 mm in diameter) [8].

Hyperplasia of Brunner's glands of the multinodular type usually cannot be mistaken radiographically for a malignant process [6]. However, carcinoid lesions such as were seen in this case cannot be differentiated from Brunner's gland hyperplasia on an upper GI series.

Gastrointestinal tract carcinoids are potentially malignant, although in their most common location, the appendix, they are usually benign [9, 10]. At the time of diagnosis, 16–23% of duodenal carcinoids are reported to exhibit metastatic disease [1, 5].

Multiple polypoid filling defects in the duodenum, particularly if associated with the carcinoid syndrome, should alert the examiner to the possibility of multiple carcinoids in the duodenal cap in spite of the rarity of this presentation.

References

1. Sanders RJ, Axtell HK: Carcinoids of the gastrointestinal tract. *Surg Gynecol Obstet 119*:369–380, 1964
2. Kempe Harper RA: *Radiology of the Duodenum.* London: Lloyd-Luke (Medical Books) Ltd., 1967, p 126
3. Pochaczevsky R, Sherman RS: The roentgen appearance of gastric argentaffinoma. *Radiology 72*:330–337, 1959
4. Stassa G, Klingen Smith WC: Primary tumors of the duodenal bulb. *AJR 107*:105–110, 1969
5. Horsley GW, Golden BN: Carcinoid tumors of the duodenum. *Int Abstr Sur 105*:417–423, 1957
6. Govoni AF: Benign lymphoid hyperplasia of the duodenal bulb. *Gastrointest Radiol 121*:267–269, 1976
7. Langkemper R, Hoek AC, Dekker MD: Elevated lesions in the duodenal bulb caused by ectopic gastric mucosa. *Radiology 137*:621–624, 1980
8. Weinberg PE, Levin B: Hyperplasia of Brunner's glands. *Radiology 84*:259–262, 1965
9. Berk RN, Lasser EC: *Radiology of the Ileocecal Area.* Philadelphia: W.B. Saunders Co., 1975, p 268
10. Morgan JG, Marks C, Hearn D: Carcinoid tumors of the gastrointestinal tract. *Ann Surg 180*:720–727, 1974

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