An interesting case of Duodenal carcinoid

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Abstract:
Carcinoids arise from cells of the diffuse neuroendocrine system and can arise almost anywhere within the gastrointestinal tract. Carcinoids belong to group of gastrointestinal neuroendocrine tumors (G1 NETs). About 4 percent of all gastrointestinal carcinoids occur in the duodenum. This is a case report of 65 yrs old man who presented with dyspeptic symptoms and weight loss. CECT abdomen revealed an intensely enhancing lesion in junction of second and third part of duodenum and endoscopy showed a globular swelling with umblication suggestive of duodenal carcinoid which was confirmed histologically and was successfully treated by surgical excision.

Keyword: Carcinoid, Duodenal carcinoid, Carcinoid syndrome, Gastrointestinal neuroendocrine tumors.

Introduction
Duodenal carcinoid are rare, comprise 1% to 3% of primary duodenal tumors. Now duodenal carcinoids are increasingly recognized as a consequence of the generalized use of an upper gastrointestinal endoscopy. Most (>90%) duodenal carcinoid arise from the first or second part of the duodenum. Duodenal carcinoids are generally small, 75% of them are smaller than 2 cm. Most (63%) are limited to the mucosa or submucosa. Most duodenal carcinoids are solitary, but they are multiple in 9% to 13%. Although various gastrointestinal hormones are frequently found in duodenal carcinoids, no clinical syndrome is seen in 58% to 98% of patients. Duodenal carcinoids can give rise to symptoms related to local growth, such as obstruction, jaundice, abdominal pain with or without pancreatitis, gastrointestinal bleeding, nausea, and vomiting. The mean age at presentation is the sixth decade, with a slight male predominance. Because the vast majority of duodenal carcinoids are not associated with a clinical syndrome, they are usually diagnosed during duodenoscopy for nonspecific symptoms.

Case report
65 yrs old male presented with 10 months history of early satiety and post prandial bloat without significant abdominal pain or distension. He also had nausea, heart burn & halitosis. He had ball rolling movements on and off with food consumption but there was no associated stale food or induced vomiting. He neither had UGI or LGI bleed. He had significant loss of appetite and had a weight loss about 6 kg in 10 months. He did not have any other co morbid illness.

He was a chronic smoker and alcoholic more than 40 years. On examination his vitals were normal. Systemic and local examination did not reveal any significant findings including gastric outlet obstruction features. He was evaluated with basic investigations (CBC, RFT, and LFT) which were normal. USG abdomen also normal study. Patient retroviral disease status was negative. Since the patient had late onset dyspeptic symptoms with weight loss he was subjected to duodenoscopy, which showed globular lesion about 2 cm in size with central umblication about 2 to 3 cm distal to the ampulla. Was initially provisionally suspected as a carcinoid or lymphoma. Multiple biopsies were taken from the lesion. Esophagus, stomach, bulb and ampulla were normal. Biopsy reported as chronic non specific duodenitis with tiny microfoci of endocrine cell clusters.

Endoscopy showing globular swelling with central umblication in D2
CECT abdomen showed intensely enhancing lesion measuring 1.37*1.17 cm in the lumen of the 3rd part of duodenum abutting the wall with thickening of the mucosal folds of D1, D2, D3 likely the neuro endocrine tumor suspicious of carcinoid or gastrinoma. Liver and vascular structures were normal. No retroperitoneal or mesenteric lymphadenopathy.

CECT abdomen intensely enhancing lesion in D2
With the suspicion of duodenal carcinoid patient was taken up for surgery. 1.5 cm fleshy pedunculated polypoidal lesion arising from D2 distal to the ampulla was found intraoperatively without evidence of liver metastasis, ascites or peritoneal nodes. Duodenotomy and excision of pedunculated polyp was done. Duodenotomy closed in two layers.

**Discussion**

Langhans is credited with the first description of a gut carcinoid tumor in 18671 however, it was Oberndorfer in 1907 who first used the term karzenoid to describe a carcinoma like small bowel tumor that behaved in a benign fashion.2 Carcinoid tumors arise most often within the gastrointestinal tract and are classified traditionally according to their site of origin within the embryologic subdivisions of the gut: foregut, midgut, and hindgut. Given their greater incidence, midgut and hindgut carcinoids have been more extensively studied, and prognostic factors for recurrence and survival after treatment of these tumors have been defined, including tumor size, location, and depth of invasion.3-6 Duodenal carcinoids are uncommon, and so the few large studies of patients with carcinoid tumors of the gastrointestinal tract have included very few patients with duodenal carcinoids.3,4 Management recommendations for duodenal carcinoids have, therefore, been extrapolated from the experience with midgut and hindgut carcinoids, as well as from previous studies that have included patients with peripancreatic carcinoid tumors or duodenal gastrinomas.7 In the largest series of duodenal carcinoid tumors to date, Burke et al8 from the Mayo Clinic, in a retrospective study of 27 patients with duodenal carcinoid tumors (excluding gastrinomas), concluded that tumors smaller than 2 cm can be treated safely with local excision alone on the basis of not finding that no patient treated with this strategy had a recurrence. Carcinoid tumors produce a number of vasoactive substances that can induce cutaneous flushing. The most common carcinoid tumors (appendix and small bowel) do not produce flushing until the vasoactive substances reach the systemic circulation. Flushing, therefore, generally denotes metastasis to the liver or a different primary tumor site (e.g., lung or ovary). The 5-year survival in patients with well-differentiated duodenal carcinoid is 80% to 95%. Poor prognostic factors include distant metastases, advanced stage, larger primary tumor size, depth of invasion into the muscularis mucosa or beyond, increased mitotic activity, and less differentiation. Ampulla of Vater carcinoids may show different growth characteristics than other duodenal NETs, because the size of the ampullary NET does not correlate with the development of liver metastases. Duodenoscopy with biopsies is the most common method to diagnose duodenal carcinoid, and it should be followed by EUS to assess the level of invasion. For patients with suspected or proved advanced disease, CT (or MRI) and somatostatin receptor scintigraphy (SRS) are indicated. Treatment is based on size, location, and type of carcinoid.

Small (1 cm) nonampullary duodenal carcinoid can be removed endoscopically if no metastases are present and tumor invasion is limited to the submucosa. • For intermediate-sized (1 to 2 cm) duodenal NETs, surgical treatment is generally recommended, although various extensive endoscopic tumor removal procedures have been used successfully.

Now patient is on follow up and he is without dyspeptic symptoms and general condition improved with weight gain of 2 kilograms.

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Large (>2 cm) duodenal NETs, or one of any size with lymph node involvement, should be treated by surgical resection. Our patient had a duodenal carcinoid less than 2 cm with late onset dyspeptic symptoms. The weight loss of 6 kg was attribute to the poor nutritional status and carcinoid tumor. Patient had no flushing or evidence of metastasis and he was managed by surgical excision.

**Conclusion**

Duodenal carcinoids are rare and indolent tumors usually associated with a benign progression. Duodenoscopy, CECT abdomen and EUS should be performed to evaluate the tumor size, the level of wall invasion, and the presence of regional or distant lymphatic metastases. Endoscopic removal of tumors smaller than 1.0 cm is recommended. Tumor size between 1.0 cm and 2.0 cm requires newer endoscopic resection or surgical removal as done in this patient.

**References**

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