
Case Reports

Multiple Gastric Carcinoids Associated with Hypergastrinemia; Endoscopic Removal : A Report of Case

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INTRODUCTION

Carcinoid tumors of the stomach represent 0.3% of all gastric tumors and 2-3% of all gastrointestinal carcinoids in Europe¹⁾, and although higher frequencies have been reported in 10% of all gastrointestinal carcinoids in Japan²⁾. This case was multiple gastric carcinoids associated with hypergastrinemia and very rare pedunculated status. From pathophysiological point of view the treatment of choice is discussed. The following is a report of such a case.

CASE REPORT

A 43-years-old woman was visited on our hospital because of recognized gastric polypoid lesions in mass health check by barium meal examination in December 1990. In order to confirm the diagnosis and treatment she was admitted our department in March 1991. She was no complain of hematemesis, melena and diarrhea. She suffered from broncheal asthma when she was 14 years old. On physical examination, height 168.5cm, weight 47kg, pulse 74/min, blood pressure 110/70mmHg. Her nutrition was good without anemia and jaundice. No skin flashing so-called carcinoid syndrome was present. Abdomen was flat and soft, no palpation of the liver and spleen. Laboratory data on admission (Table 1) was normal except for serum gastrin levels of 1100pg/ml higher. The serum level of 5-HIAA were normal.

Barium meal examination revealed multiple defined polypoid lesions at the upper body of the stomach on double contrast view (Fig. 1). Gastric endoscopy revealed a peduncular polyp (Yamada IV) with a diameter of about 15mm on the greater curvature with nodular, reddish, erosive surface (Lesion A) (Fig. 2). Another semipeduncular protrusion of 12mm in measure at the posterior wall on the oral side from lesion A (Lesion B) (Fig. 3). Two small sessile polypoid lesions approximately 5mm in diameter on the anterior wall (Lesion C,D) (Fig. 4). The corpus mucosa revealed atrophic finding. Endoscopic ultrasonographic study found that an isoechoic mass protruded into lumen of the stomach with polypoid fashion (Lesion A) (Fig. 5). The another hypoechoic mass located between second and third layer (Lesion B) (Fig. 6).

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Table 1 Laboratory data on admission

<Peripheral blood>		<Blood chemistry>	
WBC	5900/mm ³	GOT	33 U
RBC	388×10 ⁴ /mm ³	GPT	27 U
Hb	11.9 g/dl	LDH	299 U
Ht	35.0%	ALP	91 U
PLT	20.5×10 ⁴ /mm ³	γ-GTP	15 U
		LAP	35 U
<Urinalysis>		CHE	0.78 ΔpH
gravity	1.020	T-Chol	203 mg/dl
PH	6.0	TG	89 mg/dl
PRO	(-)	T-B	0.75 mg/dl
GLU	(-)	BUN	11.7 mg/dl
KET	(-)	UA	3.2 mg/dl
BLO	(-)	Creatinine	0.50 mg/dl
URO	0.1 mg/dl	Amylase	139 U/l
BIL	(-)	T-P	6.7 g/dl
		S-Iron	139 μg/dl
<Feces occult blood>		GLU	95 mg/dl
orthotolidine	(-)		
guaiac	(-)		
immunoreaitive method	(-)		
<Serum hormonal examination>		<Tumor marker>	
serotonin	0.18 μg/ml	CA 50	12.3 U/ml
5-HIAA	5.7 ng/ml	CA 19-9	33.9 U/ml
secretin	71 pg/ml	ST 439	2.6 U/ml
gastrin		AFP	<10 ng/ml
(4/1)	1100 pg/ml	CEA	1.9 ng/ml
(4/12)	630 pg/ml		

In order to prevent further development of carcinoids a gastrectomy was suggested, but the patient refused to undergo operation treatment. According to patient choice, the endoscopic removal of the tumors was performed. Lesion A was referred for snare polypectomy, Lesion B, C, D were performed by endoscopic mucosal resection. Histological pictures showed tumor cells were small, uniform with scanty cytoplasm, arranged in broad strands, nests, with reactive fibrosis, no mitoses were seen (Fig. 7). The tumor cells displayed a argyrophil reaction with the Grimelius method, as well as chromogranin immunoreactivity. No argentaffin reaction (Fontana-Masson) occurred in the tumor cells, nor was there any somatostation, gastrin, serotonin immunoreativity. Electromicroscopic study revealed many dense granules with limiting membrane within the cytoplasm of neoplastic cells. They were spherical in shape and measure about 250nm in diameter (Fig. 8). Finally we diagnosed these lesions as carcionids tumors.

DISCUSSION

Gastrointestinal carcinoids develop from Kulchitzky cells located in the crypts of Lieberkuhn, these cells originate from neural crest. It was coined by Obermdorfer in 1907 to denote the tumors benign nature. Because of originating from deep glandular crest, gastric carcinoids usually grow in small protruded lesion and submucosal tumorlike covering gastric mucosa, very rare appeared as like the

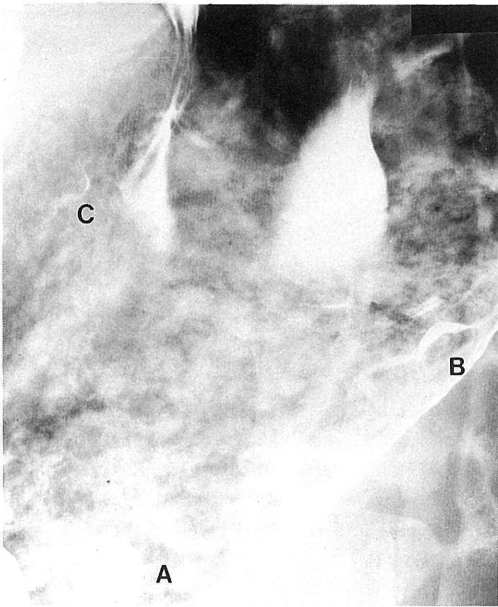


Fig. 1 Barium meal examination revealed multiple polypoid lesions at the upper body of the stomach.

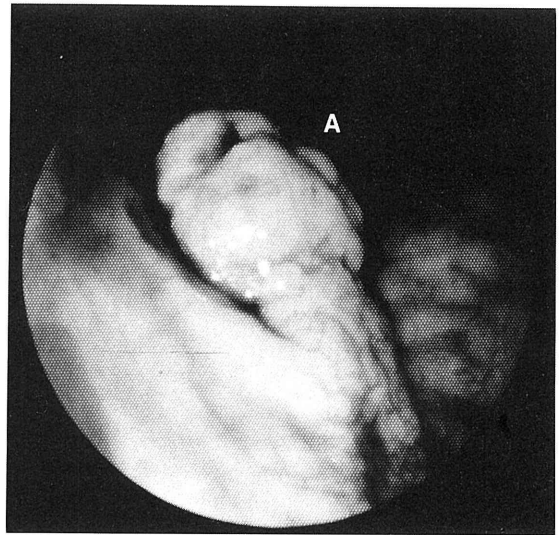


Fig. 2 Gastroendoscopic picture showing a peduncular polyp with erosive surface, lesion A.

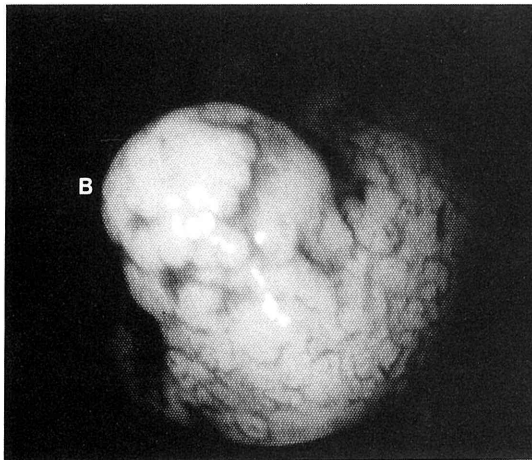


Fig. 3 Endoscopic finding showed a semipeduncular lesion, lesion B.

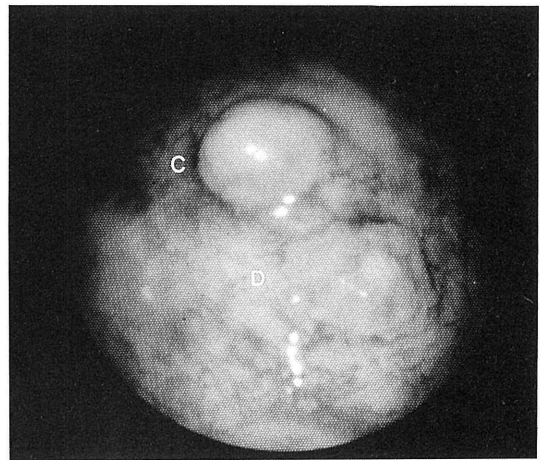


Fig. 4 Endoscopic finding revealed small elevated lesions, lesion C, D.

present case³).

In recent years the association between gastric carcinoids and atrophic gastritis has been more and firmly established⁴). On the basis of gastroscopic studies carcinoids have been detected in 1-7% of patients with pernicious anemia⁵). The estimates on the frequency of atrophic gastritis in connection with gastric carcinoids range between 20% and 50%⁶). Our patient have been described in atrophic gastritis of the corpus of the stomach, but no pernicious anemia was showed. There are 16 cases reported with gastritis A type and 13 cases of them were multiple lesions in Japan⁷). The cases for the association of

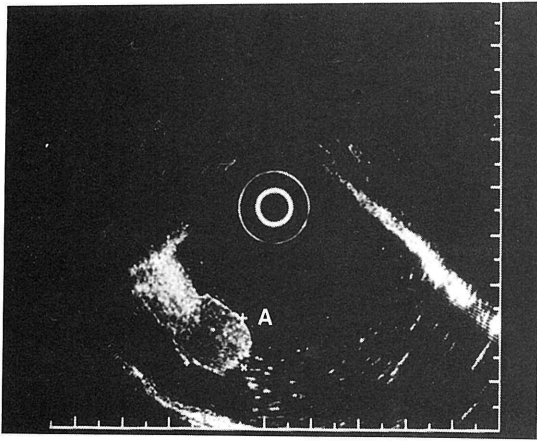


Fig. 5 Endoscopic ultrasonography showing an isoechoic mass protruded into the lumen of the stomach, lesion A.

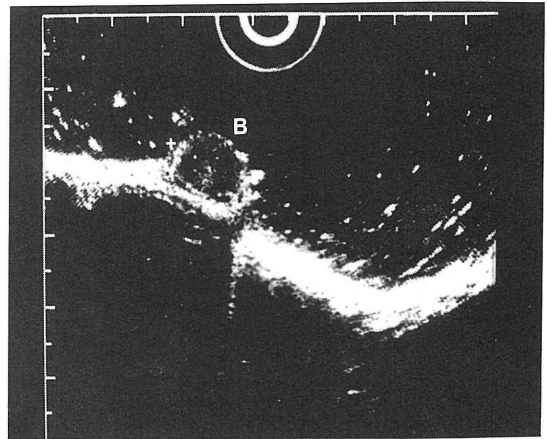


Fig. 6 Endoscopic ultrasonography revealed the low echoic mass located between the second and the third layer of the stomach, lesion B.

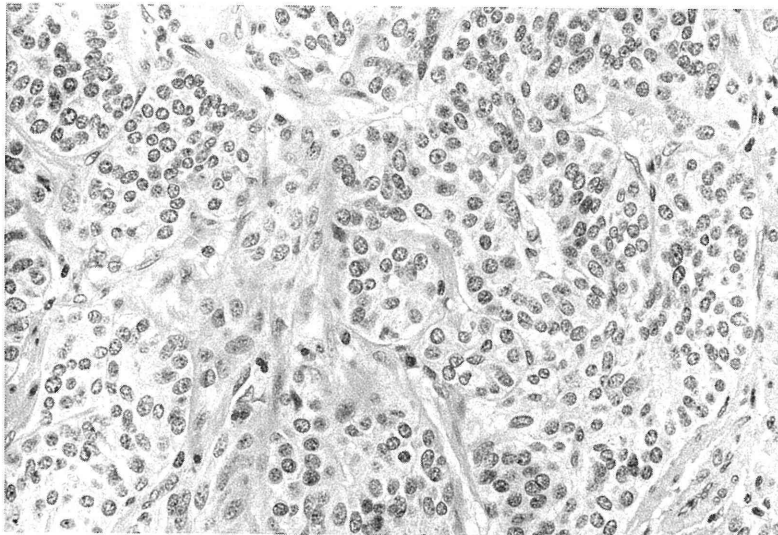


Fig. 7 Photomicrography of the tumor tissue from resected polyp. The tumor consists of uniform cells, arranged in broad strands, nests, associated reactive fibrosis.

gastric carcinoids and atrophic gastritis seems to be a disturbance in the hormonal feedback mechanism. Gastric acidity reduces gastrin production, but in type A atrophic gastritis there is achlorhydria and unopposed hypergastrinemia.

The patient has been followed up with repeated gastroscopies and biopsies after removal of all initial gastric carcinoids for 6 months. The serum gastrin levels were still elevated 1800 and 3000 pg/ml, respectively. These may indicate multifocal gastric carcinoids, she should be referred for surgery in order to prevent further development of carcinoids. Feb. 1992, she underwent total gastrectomy. Gastrin levels of the plasma were normal after operation. At least four parts of the carcinoid were presented in the deep

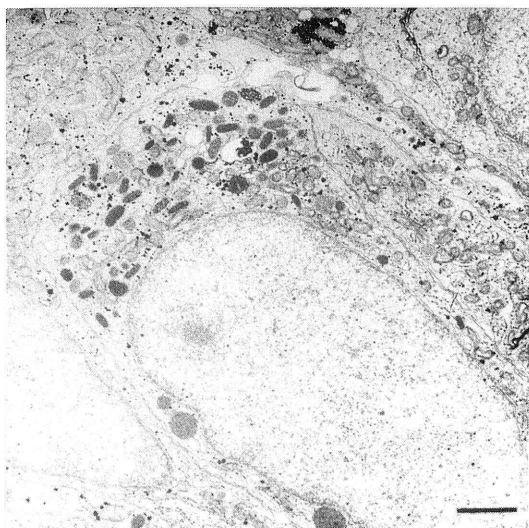


Fig. 8 Electron microscopic photography demonstrated electron dense granules in the cytoplasm, about 250nm in diameter.

glandular crests at the corpus of resected specimen. Gastric carcinoids are considered to be slow growing. The natural history of the tumors is related to the size and multiplicity of the primary lesions and the presence of metastases⁸⁾. Hepatic metastases in both the presence and absence of regional lymph node metastases have been reported. Harvey et al. have followed five patients 1 to 6 years by endoscopy without evident enlargement or increase in the number of tumors⁹⁾. We are of opinion that polypectomy seems to be sufficient measure in small lesions but in multifocal lesions, persisting hypergastrinemia, gastrectomy should be considered.

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内視鏡的切除を行った高ガストリン血症を伴う 多発性胃カルチノイドの1例

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高 瀬 雅 久, 滝 沢 千 晶, 三 坂 享 一, 川 口 実
斎 藤 利 彦

症例は43歳女性, 検診で胃隆起性病変を指摘され, 精査のため1991年3月入院となった。胃X線検査では胃体上部に多発する隆起性病変を認めた。胃内視鏡検査では体部に4個の隆起性病変を認め, そのうち1個は有茎性であった。4病変とも内視鏡的切除を行った。組織学的にはカルチノイド腫瘍で, グリメリウス染色陽性であった。本症例は血清ガストリン1100 pg/mlと高値を示した。高ガストリン血症を伴う多発性胃カルチノイドで, 有茎性を示した稀な症例であり報告した。
