Acta Medica Okayama

Volume 34, *Issue* 3 1980 *Article* 7

JUNE 1980

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Abstract

A papillary (villous) adenoma of the duodenum was found in a 67-year-old male. Radiographic barium studies of the upper gastrointestinal tract revealed a tumor in the second portion of the duodenum. Biopsied specimens taken through a duodenofiberscope showed papillary adenoma. A partial duodenectomy with duodenojejunostomy was performed. The specimen was a pedunculated tumor measuring 3 X 2 X 1.5 cm. Histologically, the tumor was composed of villous and tubular arrangements of mucus-secreting columnar epithelial cells. A moderate number of entero-endocrine cells and a few Paneth cells were also noted. Forty-two other cases reported in Japan are briefly reviewed.

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*PMID: 6447988 [PubMed - indexed for MEDLINE]

Acta Med. Okayama **34**, (3), 197—201 (1980)

— BRIEF NOTE —

PAPILLARY ADENOMA OF THE DUODENUM; REPORT OF A CASE AND REVIEW OF THE LITERATURE IN JAPAN

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Received March 14, 1980

Abstract. A papillary (villous) adenoma of the duodenum was found in a 67-year-old male. Radiographic barium studies of the upper gastrointestinal tract revealed a tumor in the second portion of the duodenum. Biopsied specimens taken through a duodenofiberscope showed papillary adenoma. A partial duodenectomy with duodenojejunostomy was performed. The specimen was a pedunculated tumor measuring 3×2×1.5 cm. Histologically, the tumor was composed of villous and tubular arrangements of mucus-secreting columnar epithelial cells. A moderate number of entero-endocrine cells and a few Paneth cells were also noted. Forty-two other cases reported in Japan are briefly reviewed.

Key words: papillary adenoma, villous adenoma, duodenal tumor, duodenum.

Routine radiographic and endoscopic examinations increase the detection rate of duodenal epithelial tumors. In addition, biopsy of the tumors is very helpful for the accurate preoperative diagnosis and for decision of the surgical management. In this report, we describe a rare tumor, papillary adenoma of the duodenum, which was diagnosed histologically before operation.

A 67-year-old man was admitted to Okayama City Hospital with epigastric discomfort for 3 weeks. Barium examination of the upper gastrointestinal tract prior to admission revealed a filling defect in the second portion of the duodenum. Past history included duodenal ulcer at the age of 57.

Physical examination revealed a well nourished male; pulse rate was 96/min and blood pressure 130/80 mm Hg. Laboratory values were as follows: WBC 8,300/mm^3; hematocrit 45%; hemoglobin, 15.5 g/dl; RBC 468 $\times 10^4$; platelets 22 $\times 10^4$; total protein 7.5 g/dl (albumin 53%, α_1-globulin 3% α_2-globulin 10%, β-globulin 9%, γ-globulin 25%); glucose 99 mg/dl; blood urea nitrogen 13 mg/dl; creatinine 1.3 mg/dl; lactic dehydrogenase 310; alkaline phosphatase 5.6 K-A unit; SGOT 19; SGPT 12; Na 141 mEq/l; K 4.1 mEq/l; Cl, 106 mEq/l. Chest x-ray films and ECG were normal.

A hypotonic duodenogram showed a mobile mass at the junction of the second and third portions of the duodenum (Fig. 1). Endoscopic examination

Fig. 1. X-ray film showing a filling defect (arrow) at the junction of the second and third portions of the duodenum.

Fig. 2. specimen of the pedunculated papillary adenoma.

demonstrated a nodular mass 3 cm below the ampulla of Vater. Multiple biopsies confirmed a villous adenoma. Surgical exploration revealed a pedunculated tumor arising from the posterior wall of the second portion of the duodenum. A partial duodenectomy with duodenojejunostomy was performed.

The specimen was a grayish pink, soft tumor measuring $3 \times 2 \times 1.5$ cm with a peduncle of 0.5 cm in length (Fig. 2). Its surface was nodular and finely granular. Microscopically the tumor was confined to the mucosa, Brunner's glands being intact. The peduncle was composed of normal duodenal mucosa and muscularis mucosae. The tumor consisted of columnar epithelial cells arranged in villous and tubular patterns (Figs. 3, 4) with a few mitotic figures (Fig. 4). Many goblet cells and a few Paneth cells (Fig. 5) were seen among the columnar epithelial cells. Grimelius' stain demonstrated a moderate number of argyrophil cells scattered among the epithelial cells (Fig. 6), but no argentaffin cells were revealed with Fontana-Masson. A small number of leukocytes were present in the epithelial layer. The stroma consisted of numerous blood vessels and delicate fibrous tissue which contained lymphocytes, plasma cells, macrophages and eosinophils. There was no evidence of malignancy.

Papillary adenoma of the duodenum has been described as papilloma, villous adenoma, villous tumor, and papillary polyp (1). In 1973, Kiyama *et al.*

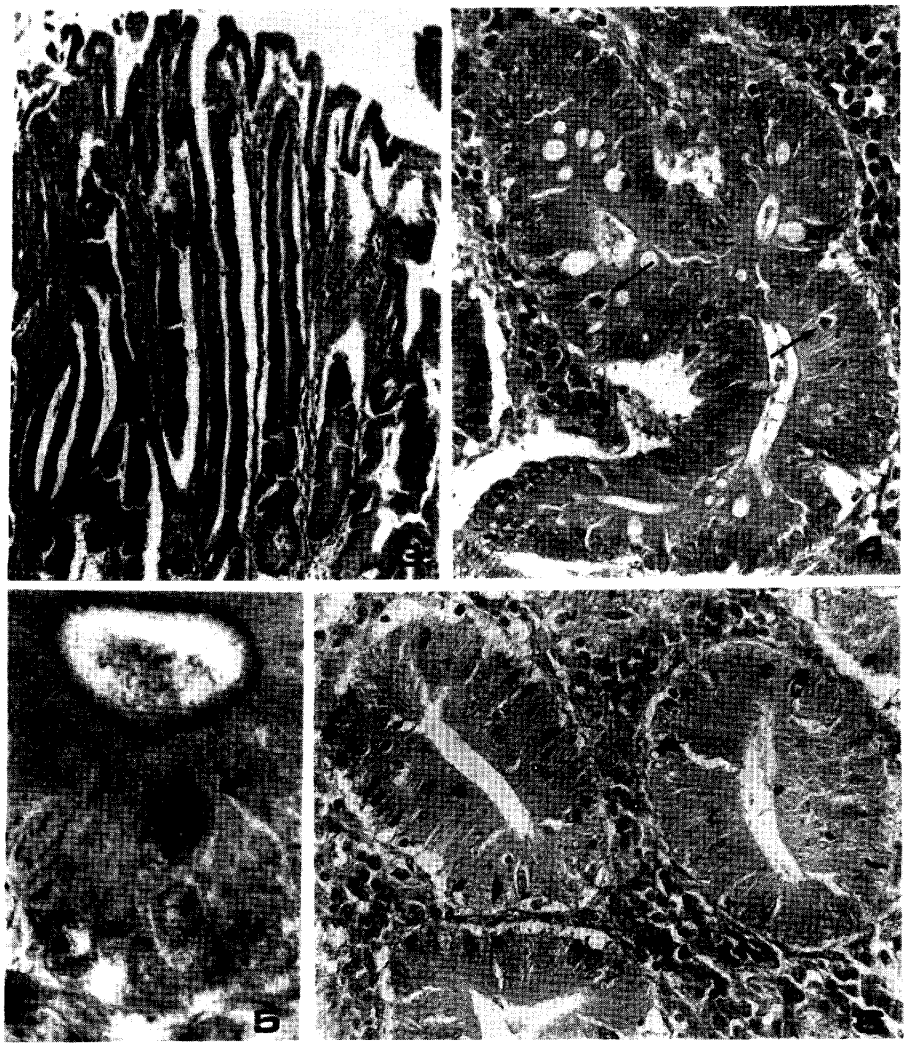

Fig. 3. Villous pattern of the tumor. H-E stain, ×60.

Fig. 4. Tubular arrangement of the tumor cells showing structural and cytological atypia. Mitotic figures (arrows) and goblet cells are seen. H-E stain, ×280.

Fig. 5. A Paneth cell containing numerous round granules (arrow). Mallory's phosphotungstic acid hematoxylin stain, ×1100.

Fig. 6. Argyrophil cells with fine black granules scattered in the columnar epithelium. Grimelius' stain, ×270.

reviewed 34 cases of papillary adenoma of the duodenum reported in Japan and added one their own (2). Thereafter, several cases have appeared (3-9) and our case brings the total number to 43 (Table 1). The age ranged from 25

TABLE 1. PAPILLARY ADENOMA OF THE DUODENUM REPORTED IN JAPAN

Patient's age	Number of cases	Sex M	Sex F	Place of the tumor	Number of cases	The great diameter of the tumor (cm)	Number of cases
0-19	0			Superior part	17	0-0.9	7
20-29	1	0	1	Descending part	20	1.0-1.9	8
30-39	2	2	0	Horizontal part	6	2.0-2.9	6
40-49	9	5	4	Ascending part	0	3.0-3.9	6
50-59	12	7	5			4.0-4.9	4
60-69	17	11	6			5.0-5.9	0
70-79	2	0	2			6.0≤	6
						No description	6

M, Male; F, Female.

to 71 years. Twenty-five cases were males and 18 females. Tumors were mainly in the proximal duodenum. Of 43 cases, only two showed multiple lesions in the descending portion of the duodenum (5, 6). The largest tumor was $8.0 \times 5.5 \times 3.5$ cm (2). Endoscopic observation was performed frequently in recent cases and biopsy was successful in 4 instances including our case (3, 8, 9).

Histological features of the papillary adenoma were not precisely described in most reports. In 1965, Malmed and Levin reported the presence of Paneth cells in a villous adenoma of the duodenum (10). In Japan, Nakamura *et al.* in 1968 (11) reported the first case containing many Paneth cells. Since then, the presence of Paneth cells has been reported in 4 cases (2, 4, 6, 9). So far recorded, only Kiyama *et al.* described the presence of endocrine cells in a papillary adenoma (2). Their case showed both argyrophil and argentaffin cells, whereas our case contained only argyrophil cells. It is of interest whether these Paneth and entero-endocrine cells are neoplastic components of the tumor or only remnants of the normal duodenal mucosa. It is well known that Paneth cells are observed in benign and malignant neoplasms of the gastrointestinal tract (12). In our case, the boundary between the tumor and normal duodenal mucosa was clear, with no intermingling. In addition, both Paneth and endocrine cells were noted in the neoplastic epithelium showing structural and cytological atypia. These facts suggest that Paneth cells are neoplastic. Recently, the entero-endocrine cell was considered to be not ectodermal but entodermal in origin (13). Therefore, endocrine cells can also be neoplastic.

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