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Duodenal Carcinoma—A Curable Disease

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ABSTRACT

During a five-year-period 9 cases of duodenal carcinoma were treated. Eight of the patients were resected and 7 of them survived more than 5 years without signs of recurrent disease. Aggressive therapy, including radiotherapy and chemotherapy in cases with lymph node metastases, might in some way explain the good results. The importance of visualizing the infrapapillary region of the duodenum when performing upper endoscopy is stressed.

INTRODUCTION

Duodenal carcinoma is an uncommon disease. Most reports include only a few cases. To collect larger patient series either a prolonged time period or collective series are necessary, but then the treatment policy becomes quite variable.

When ERCP, ultrasonic scanning and computerized tomography became available at our hospital in the mid seventies, we adopted an aggressive approach towards diagnosis and treatment of tumours in the pancreatico-duodenal area. During the five-year-period April 1st 1977 to April 1st 1982 we had the opportunity to see 9 cases of duodenal carcinoma. This is a fairly large number of patients treated by one team and without major variations in treatment policy. The purpose of this study is to show the results of this series after a five-year follow-up.

PATIENTS AND METHODS

Only patients considered both by the clinician and by the pathologist to have an adenocarcinoma of the duodenum were included. There were five women and four men with a mean age of 60 years. The patients are presented in Table 1 and one of the cases more in detail below.

Table 1. Presentaton of the nine cases. UGI = upper gastrointestinal series. GE= gastro-enterostomy

No	Sex	Age Yrs	Main symptoms	Diagnostic means	Delay Mo	Treatment	Lymph nodes	Additional treatment	Survival Mo	Present condition Late complications
1	F	44	Vomiting	UGI Endoscopy	1	Whipple	+	5-Fu	124	Nutritional problems
2	M	62	Diarrhoea Cholangitis	Endoscopy	25	Whipple	-	-	0	Died 3 days postop of septicemia
3	F	47	Anaemia, later pain	UGI Endoscopy	24	GE Radiation 40Gy + 5-FU Whipple	-	-	112	Excellent
4	F	54	Anaemia, later pain	UGI Endoscopy	7	Whipple	-	-	110	Cholangitis steathorrea At present excellent
5	F	74	Pain, vomiting	UGI Endoscopy	7	Whipple	-	-	86	Excellent
6	M	70	Weight loss Steathorrea Jaundice	Endoscopy	3	Whipple	+	Radiation 40 Gy	82	Perfor. ulcer prox. to anastomosis after 6 y. Otherwise excellent
7	M	73	Pain	UGI Endoscopy	1	Radiation 30 Gy. GE	-	-	4	Dead
8	F	56	Pain, vomiting weight loss	UGI Laparotomy	2	Segmental resection	-	Radiation 55 Gy	66	Anastomotic stenosis Ovarian carcinoma with metastases, at present under control
9	M	64	Anaemia	Endoscopy	2	Whipple	-	-	65	Excellent

Five of the patients were from our own district area and four referred from other hospitals. All the patients have been followed up by interviews in July 1987 or later and their hospital charts scrutinized.

Five of the patients were anaemic, four of them with blood-positive stools. Three patients had negative upper GI-series, and two negative endoscopy performed during investigation of their symptoms. Five of the patients had their tumour just distal to the papilla, the others were located further distally in the duodenum.

The Swedish Cancer Register for the years 1977 - 1982 was used to determine the frequency of duodenal carcinoma during the period in question.

CASE REPORT

Case 3. A 47-year-old women, who during a lengthy stay in Africa became anaemic, was treated with iron without effect. On her return to Sweden 6 months later she was closely investigated including upper GI-series and endoscopy with negative results. On a few occasions occult gastrointestinal bleeding was found but mostly faecal blood tests were negative. Some deficiency in her iron metabolism was suspected. When she some months later got upper abdominal pain, renewed X-ray showed a suspected polypoid tumour in the duodenum. Endoscopy confirmed this finding and a biopsy verified malignancy.

During a laparotomy an open biopsy verified the duodenal carcinoma. The tumour, however, encroached the mesenteric vessels and resection was considered impossible. A gastro-jejunostomy was performed and the tumour marked for later radiotherapy.

The patient was treated with 40Gy and 5-FU but occult bleedning and anaemia persisted. At a second-look laparotomy 6 months after the first one it was obvious that the mesenteric vessels now were free and a Whipple procedure was performed. A stricture could be seen in the resected duodenal specimen but no tumour. Microscopic examination showed intensive fibrosis but no malignant cells.

The patient is now, more than 9 years after the diagnosis, in very good condition without any sign of recurrent disease.

RESULTS

Survival

One of the patients was treated palliatively and succumbed of the disease after 4 months. The other eight patients were radically resected. Of these one died three days postoperatively of an overwhelming septicemia. All the seven patients surviving the resection were alive and without signs of recurrent disease at the follow-up after a mean observation time of 7 years and 8 months. Survival figures are summarized in Table 2.

Table 2. Results in the present patient series and that from the Mayo Clinic (5). Figures within brackets show percentage, p-values achieved with chi-square test.

	Present series	Mayo Clinic	P
Resectability rate	8/9 (89)	46/91 (51)	
5-year-survival			
Whole series	7/9 (78)	21/96 (23)	<0,01
Resected cases	7/8 (88)	21/46 (46)	<0.05
Patients surviving resection	7/7 (100)	21/36 (58)	<0.05

Late complications

One of the patients suffers from nutritional problems.

One patient during the first postoperative years had attacks of steathorrea and cholangitis but she is now healthy.

One patient was operated upon 6 years after the Whipple procedure for a perforated ulcer just proximal to the gastroenterostomy.

One patient 2½ years after duodenal resection had problems with gastric emptying. On endoscopy the duodeno-jejunostomy was found to be narrow. A gastro-jejunostomy was performed. At the same operation an ovarian carcinoma was found. This has later metastasized but the secondaries have disappered on chemotherapy.

Frequency

During the period 1977-1982 39.048 caes of gastrointestinal cancers were registered in Sweden (ICD-code numbers 150-154). Of these were 881 in the small intestine (ICD 152) and 112 in the duodenum (ICD 152.0). This means that the duodenal carcinomas amounted to 0.29 per cent of all gastrointestinal cancer, varying during the years from 0.24 to 0.34. Of the cancers in the small

intestine, duodenal carcinoma constituted 12.7 per cent with a variation from 10.0 to 15.4.

DISCUSSION

Age, sex distribution, symptomatology and the time of delay from onset of symptoms until diagnosis, as well as tumour site, seem to coincide well with other patient series (1,5,6,10).

The diagnosis was made in most instances with an upper gastrointestinal series or at endoscopy. The main symptoms of duodenal carcinoma - upper abdominal pain, vomiting or signs of gastrointestinal bleeding - nowadays call for an upper gastrointestinal endoscopy as the first diagnostic procedure. If no explanation of the symptoms is found in the oesophagus or the stomach, the duodenum including the infrapapillary region, should be investigated. In patients with major upper gastrointestinal bleeding one per cent had duodenal tumours as their bleeding source (2). The frequency is probably higher in occult bleeding without visible bleeding source in the stomach. If the duodenoscopy fails an upper GI-series should be performed, explicitly with regard to the third and the fourth part of the duodenum.

The survival figures are the best so far published. Comparison with other series is sometimes impossible. In some presentations tumours not originating from the duodenal mucosa seem to be included. If these other tumours have a worse prognosis, which is highly probable, some of the differences might be explained. The Mayo Clinic series (5) has carefully excluded tumours of other origin and has among the best results published to date. Our good results might be pure chance but as can be seen in Table 2 there is a statistical significance in favour of the present series. The Mayo series dates back to 1940, which can explain some of the difference but the survival in patients after a successful radical procedure should only marginally be depeding upon when the patients were treated.

The two patients with positive lymph nodes and the one with a limited duodenal resection were all treated with irradiation or 5-FU. Earlier experience with adjuvant therapy is scarce (1,2,7,8). It can in no way be excluded that our aggressive approach has improved the results. In case 3 it was a prerequisite for a radical therapy.

The frequency of duodenal carcinoma related to the total number of gastrointestinal carcinomas is astonishingly similar to earlier published figures

(4). The frequency of duodenal carcinomas in relation to the number of small intestine carcinomas is low in Sweden. Published figures vary between 25 and 52 per cent and in a collected series of 326 patients the frequency was 35 per cent (3). The explanation for this can be either that other types of small intestinal cancers are common in Sweden, or differing routines for diagnosis or registration.

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