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Squamous Cell Carcinoma of the Descending Colon: Report of a Case and Literature Review

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Key Words
Squamous cell carcinoma · Colon · Prognosis

Abstract
It is very rare that squamous cell carcinoma (SCC) arises from colorectal epithelium. An 89-year-old man was treated in 2001 with chief complaints of anorexia, abdominal pain, and low grade fever. The histological diagnosis as SCC was determined by biopsy during a colonoscopy. We diagnosed primary SCC of the colon because except in the colon no malignant lesions were found by systemic CT. Surgical complete resection was performed. However, he died three months after surgical resection because of hepatic metastasis and cachexia. The prognosis of this disease seems to be worse than that of adenocarcinoma.

Introduction

It is well known that more than 90% of colorectal diseases are adenocarcinoma, with the majority of remaining cases having no epithelial histology such as carcinoid tumors, sarcomas, and lymphoid tumors [1]. Pure squamous cell carcinoma (SCC) is not uncommon in glandular organs such as the uterus, lung, and pancreas, but a tumor of the intestinal tract is rare [2]. The incidence of SCC of the colon and rectum has been reported to be 0.25 to 0.1 per 1,000 colorectal carcinomas [3]. After the first case report in 1919 [4], a total 72 pure SCCs of the colon and rectum have been reported [3, 5–7]. Clinical characteristics, biologic behavior, and treatment response of this colorectal cancer are largely unknown. In this paper we report a case of primary SCC of the descending colon.

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Case Report

An 89-year-old man underwent surgical operation for sigmoid colon cancer in 1994. Histological feature was well differentiated adenocarcinoma. He visited our hospital with low grade fever, anorexia and abdominal pain, seven years after the first operation in May 2001. Abdominal examination revealed a mass in the left upper quadrant. Barium enema showed irregular stenosis of the colon at the splenic flexure. Abdominal computed tomography (CT) showed wall thickness and stenosis of the colon at the splenic flexure and lymph node enlargement around the tumor (**fig. 1**). Colonoscopy revealed stenosis with ulceration in the colon at the splenic flexure. The histological diagnosis of SCC was determined by biopsies during colonoscopy. Although chest, neck and cervical CT were done, tumors were only identified in the colon. Therefore, we concluded that the colon was the primary lesion site. Although this tumor was a huge mass which penetrated the jejunum and adhered to the left kidney and left diaphragm, left hemicolectomy, partial resection of the jejunum and splenectomy were performed. The resected mass was huge, 11.0 × 8.0 cm, with penetration to the jejunum (**fig. 2**). Pathology demonstrated SCC of the colon at the splenic flexure invading the jejunum, diaphragm and capsule of the kidney (**fig. 3**a). Regional lymph nodes had metastasis of SCC (fig. 3b). A curative operation was performed. Adjuvant chemotherapy was not started because of the advanced age of the patient. Three months after the operation he died because of multiple liver metastases and cachexia.

Discussion

SCCs of the colon are an extremely rare clinical entity. The first case of a pure SCC of the colon was reported in the German literature by Schmidtmann in 1919 [4]. In Japan, Murakami et al. reported the first case of a pure SCC of the colon in 1974 [8]. Since that initial description 72 cases of pure SCCs of the colon and rectum have been reported (**table 1**) [3, 5–7].

Certain criteria must be satisfied before a diagnosis of primary SCC of the colon is made [9]. First, metastasis from other sites to the bowel must be ruled out. Second, a squamous-lined fistulous tract must not involve the affected bowel, because this may be a source of SCCs. Third, SCCs of the anus with proximal extension must be excluded. Fourth, SCC must be confirmed by histological analysis. Our case satisfied all these criteria.

The prognosis of patients with colorectal SCC is difficult to establish because of the rarity of these tumors. The colorectal SCC seems to be more frequently locally invasive and more likely to involve regional lymphatics than the adenocarcinomas, probably because of a delayed diagnosis. In this case, the tumor was pT4 (invasion of the diaphragm and capsule of the kidney) and lymph node involvement. However, curative resection with a negative resection margin was performed. Comer et al. [10] suggested a poorer prognosis for patients with colorectal SCC than adenocarcinoma.

The role of adjuvant chemotherapy or radiation remains unknown. Gelas et al. [3] reported that surgical resection after neoadjuvant combination of chemotherapy and external beam radiation therapy was useful for rectal SCC. Juturi et al. [5] reported that combination of cisplatin, 5-fluorouracil, and leucovorin would be a possible treatment option for patients with metastatic colorectal SCC. Copur et al. [7] reported that cisplatin, etoposide and 5-fluorouracil combination chemotherapy was effective and serum SCC antigen level was a useful marker of response to chemotherapy. Chemotherapy for colorectal SCC has been controversial. Nowadays, we think that surgical resection may be the first choice and adjuvant treatment (chemotherapy or radiation therapy) may be done if the patient has a good performance status.

In conclusion, advanced colorectal SCC with invasion to adjacent organs and metastatic lymph nodes had a poor prognosis. Treatment selection is difficult because

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colorectal SCC is a very rare disease. However, surgical resection and adjuvant chemotherapy is a better approach to the treatment of colorectal SCC.

Table 1. Squamous cell carcinoma of the colon and rectum: clinical feature

Case	Author (year)	Age years	Gender	Location	Treatment	Outcome
1	Schmidtmann (1919)	65	M	cecum		DOD at 1 month
2	Catell and Williams (1943)	63	M	rectum at 10 cm	surgical resection	alive at 3.5 years
3	Hicks and Cowling (1955)	90	F	ascending colon	N/A	DOD at 1 month
4	Wiener et al. (1962)	52	F	rectum at 9 cm	APR	died at 1 year
5	Larizaden and Powell (1965)	44	F	hepatic flexure	right hemicolectomy	alive at 8 months
6	Wood (1967)	58	M	cecum	right hemicolectomy	N/A
7	Minkowitz (1967)	49	F	rectosigmoid	proctocolectomy	dead at 5 months
8	Gaston (1967)	65	M	cecum	right hemicolectomy	alive at 2 years
9	Pemberton and Lendrum (1968)	48	F	ascending colon	right hemicolectomy	alive at 2 years
10	Birnbaum (1970)	82	M	ascending colon	right hemicolectomy	N/A
11	Comer et al. (1971)	34	F	rectum at 8 cm	APR	alive at 13 years
12				transverse colon		
13				descending colon		
14				upper rectum		
15				ascending colon		
16				hepatic flexure		
17				sigmoid		
18				sigmoid		
19	Lewis et al. (1971)	61	M	cecum	right hemicolectomy	dead at 10 days
20	Balfour (1972)	63	M	sigmoid		alive at 18 months
21	Horne and McCulloch (1978)	53	M	cecum	right hemicolectomy	dead at 11months
22	Crissman (1978)	72	M	transverse colon	colectomy	dead at 3 days
23	Burgess et al. (1979)	43	M	hepatic flexure	right hemicolectomy	dead at 1 year
24	Williams et al. (1979)	N/A	N/A	rectum	N/A	N/A
25	Kahn et al. (1979)	64	M	ascending colon	N/A	N/A
26	Hickey and Corson (1981)	48	F	transverse colon	transverse/left hemicolectomy	alive at 21 months
27	Petrelli et al. (1981)	73	M	sigmoid	palliative colostomy	dead at 9 days
28	Pitella and Torres (1982)	33	M	ascending colon	ileocolic bypass	dead at 10 days
29	Hey and Brandt (1982)	N/A	N/A	colon (not specified)	N/A	N/A
30		N/A	N/A	colon (not specified)	N/A	N/A
31	Lyttle (1983)	65	F	ascending colon	right hemicolectomy	alive at 2 months
32	Vezeridis et al. (1983)	56	M	rectum at 10 cm	APR	intraoperative death
33		57	M	transverse colon	colectomy	alive at 14 months
34		44	M	rectum	APR	dead at nine days
35		61	F	rectum	investigational chemotherapy	dead at 4 months
36		66	F	rectum at 5 cm	5-FU and radiation	dead at 15 months
37		62	F	rectum	APR	dead at 13 months
38	Gould et al. (1983)	61	M	splenic flexure	ileocolic bypass	dead at 3 months
39	Francioni et al. (1983)	N/A	N/A	colon (not specified)	N/A	N/A
40	Forouhar (1984)	N/A	N/A	colon (not specified)	N/A	N/A
41	Balsano (1985)	65	M	cecum	right hemicolectomy	N/A
42		58	M	ascending colon	right hemicolectomy	N/A
43	Chulia et al. (1986)			hepatic flexure		
44	Navarro et al. (1986)			colon		
45				colon		
46				colon		
47	Pigott and Williams (1987)			rectum	APR	doing well
48	Shao et al. (1987)			ascending colon	right hemicolectomy	
49	Lundquest et al. (1988)			cecum		
50	McMahon (1991)		F	transverse colon		

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51	Wyatt (1991)	71	M	cecum		alive at 1 year
52	Schneider et al. (1992)			rectum	surgery and RT	
53				rectum	surgery and RT	
54				rectum	surgery and RT	
55	Betancourt et al. (1992)			hepatic flexure		
56	Vignale (1993)	69	M	sigmoid colon		alive at 8 months
57	Yoshida et al. (1994)	51	M	splenic flexure	left hemicolectomy	dead 39 days after diagnosis
58	Vraux et al. (1994)			colon	chemotherapy	dead 5 years after diagnosis
59	Alekseev et al. (1994)			colon		
60	Morita (1995)	57	M	ascending colon		alive at 2 years
61	Petrelli et al. (1996)	62	M	rectum	APR	
62		41	F	cecum	colectomy	
63	Juturi et al. (1998)	61	F	hepatic flexure	right hemicolectomy	alive NED 18 years after diagnosis
64		67	M	Sigmoid colon	left hemicolectomy and CT	dead of disease 15 months after diagnosis
65	Goodfellow et al. (1999)	66	M	hepatic flexure	right hemicolectomy	N/A
66	Copur et al. (2001)	54	M	rectosigmoid	APR + CT	dead at 18 months after diagnosis
67	Gelas et al. (2002)	47	F	rectum	APR + CT	
68		63	M	rectum	APR + CT	
69		70	F	rectum	APR	
70		93	M	rectum	RT	
71		45	F	rectum	low anterior resection	
72		43	F	rectum	low anterior resection	
73	our case	89	M	descending colon	descending colectomy	dead 3 months after operation

N/A = Not available; DOD = died of disease; APR = abdominoperineal resection; 5-FU = 5-fluorouracil; RT = radiation therapy; CT = chemotherapy; NED = no evidence of disease.

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Fig. 1. Abdominal computed tomography (CT) scan showed a large heterogeneous mass involving the colon at the splenic flexure and swelling lymph nodes.

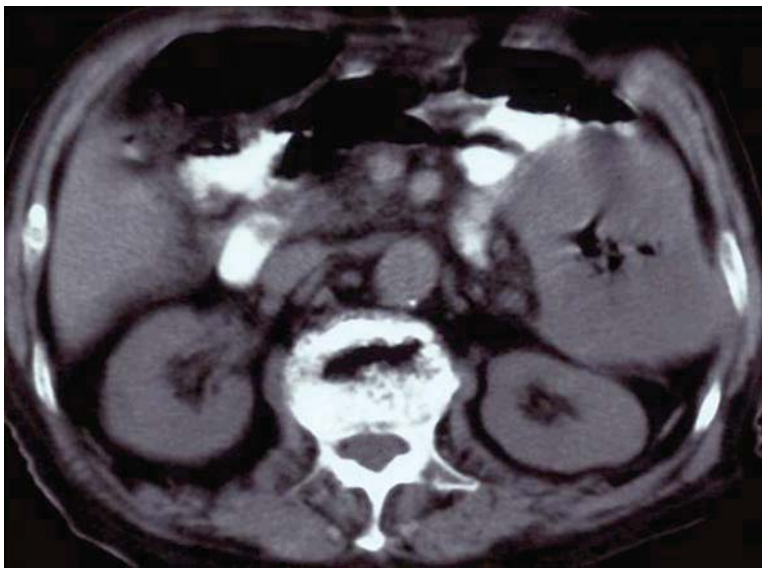

Fig. 2. Macroscopic appearance. The resected specimen was a huge mass of 11.0 × 8.0 cm.

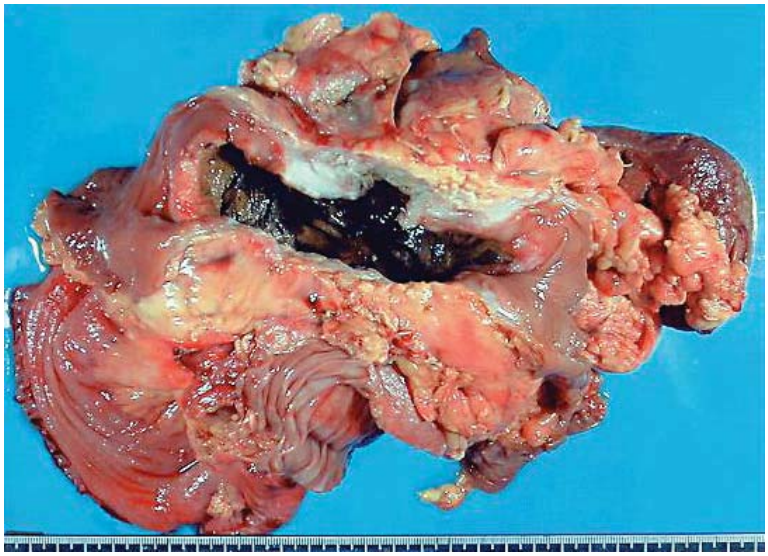

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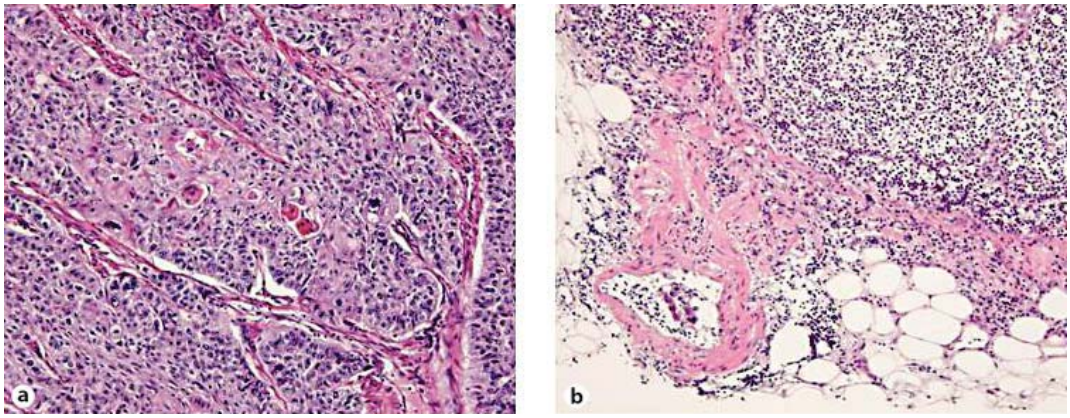
Fig. 3. **a** Primary tumor showing weak squamous change, demonstrating moderately differentiated SCC. Original magnification ×100. HE stain. **b** Metastatic lymph node showing metastatic, moderately differentiated SCC. Original magnification ×100. HE stain.



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