

Carcinosarcoma in the Cecum

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Carcinosarcoma of the colon is rare. Seventeen cases have been reported in the English literature. Most cases occurred in the left side of the colon. Indeed, there is only one reported case of cecal carcinosarcoma. Carcinosarcoma has a tendency to distantly metastasize and shows dismal prognosis. We report a case of carcinosarcoma in the cecum and review the literature describing colonic carcinosarcoma. (**Gut Liver 2012;6:395-398**)

Key Words: Carcinosarcoma; Sarcomatoid carcinoma; Cecum; Ascending colon

INTRODUCTION

Carcinosarcoma is a biphasic malignant tumor characterized by a mixed composition of carcinomatous and sarcomatous regions. Following the first report by Virchow¹ in 1864, its occurrence has been described in various organs. The most common sites were head and neck, and female urogenital system.² In the gastrointestinal tract, carcinosarcoma arised in the esophagus, stomach and biliary tract is usually reported,³ whereas carcinosarcoma of colon has been reported rarely.⁴⁻²⁰ Indeed, there was

only one case report of cecal carcinosarcoma.⁷ In this report, we described carcinosarcoma of the cecum and reviewed 17 reported cases.

CASE REPORT

A 72-year-old woman with valvular heart disease was admitted to our hospital for investigation of hematochezia. Laboratory tests showed low hemoglobin concentration (7.4 g/dL; normal range, 13 to 17 g/dL), mean cellular volume (74.4 fL; normal range, 80 to 97 fL), and mean corpuscular hemoglobin-mean (23.3 pg; normal range, 26 to 34 pg). The serum levels of carcinoembryonic antigen (CEA), carbohydrate antigen 19-9, and alpha fetoprotein were within normal limits. On colonoscopic examination, a 3-cm sized Yamada type IV polypoid mass with surface ulceration was noted at the cecum (Fig. 1A). Under impression of malignancy, colonoscopic polypectomy was performed. The cut surface of the polyp was gray to white and friable. The resection margin was grossly involved by the tumor (Fig. 1B).

Microscopically, the overlying mucosa was effaced by the tumor. There was no mucosal dysplasia or transition area between

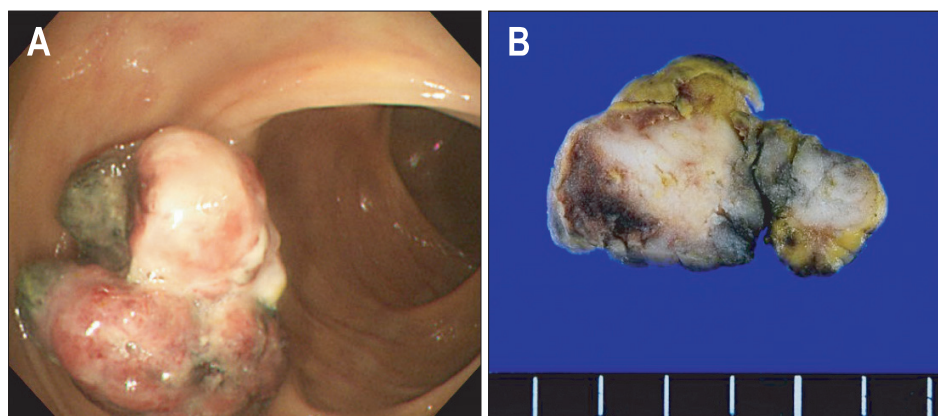


Fig. 1. Colonoscopic and gross findings. (A) Upon the colonoscopic examination, a Yamada type IV polypoid mass with surface ulceration was noted at the cecum. (B) The removed polyp measured 3.1×2×1.8 cm. The cut surface showed focal hemorrhage and a friable appearance.

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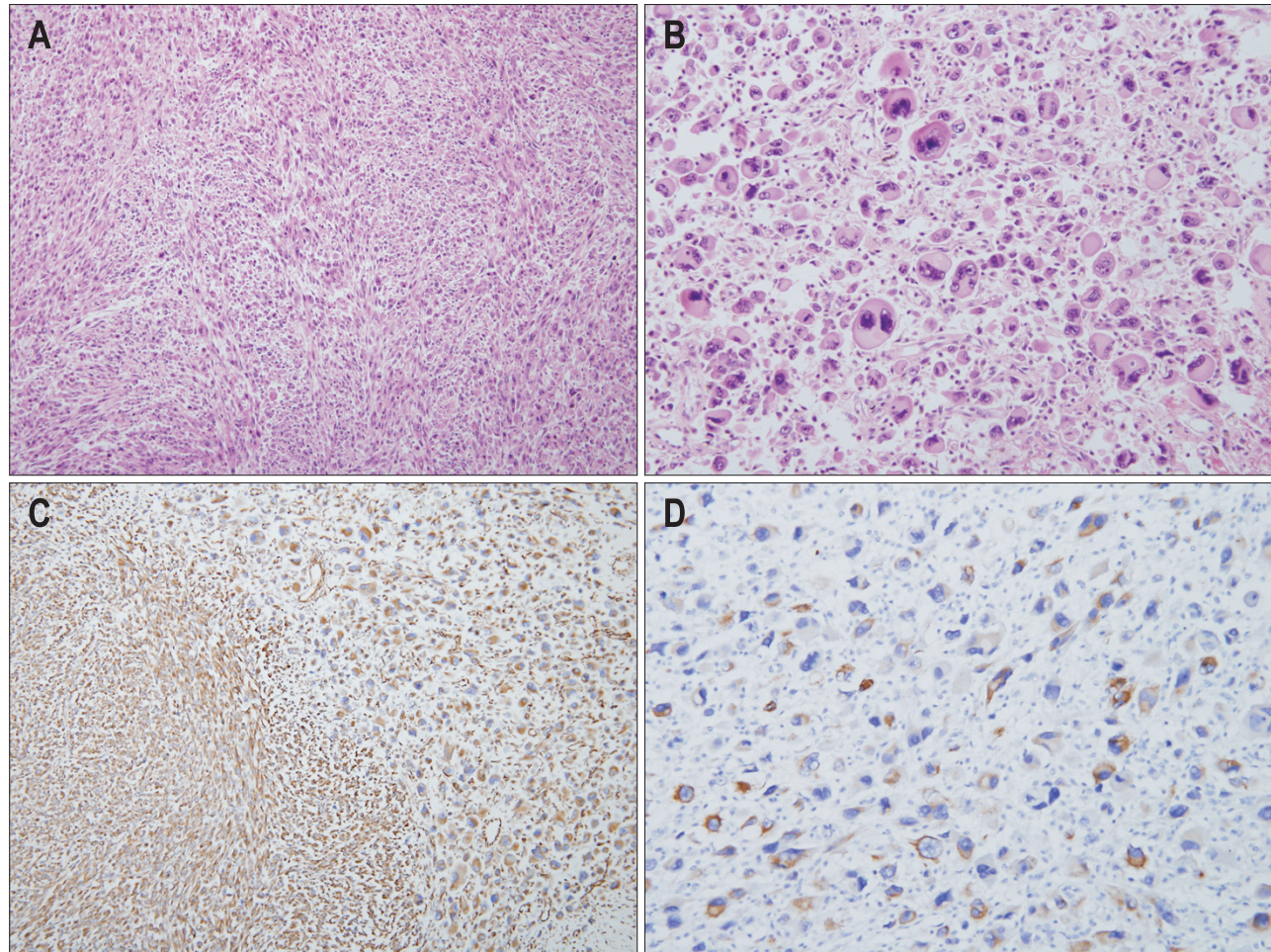


Fig. 2. Microscopic findings. The tumor cells were spindling and epithelioid. (A) The former had round to ovoid nuclei with a coarse chromatin pattern, had distinct nucleoli and were arranged in a fascicular pattern (H&E stain, $\times 200$). (B) The latter had large, bizarre nuclei and abundant eosinophilic glassy cytoplasm without cohesiveness (H&E stain, $\times 400$). (C) Vimentin was diffusely positive in the spindle cells ($\times 200$). (D) Some epithelioid cells expressed cytokeratin ($\times 400$).

the normal mucosa and tumor. The tumor cells were spindling or polygonal. The spindle cells had round to ovoid nuclei with coarse chromatin pattern, distinct nucleoli, and formed fascicular pattern (Fig. 2A). The polygonal cells had large bizarre nuclei and abundant eosinophilic glassy cytoplasm and lacked of cohesiveness (Fig. 2B). Histologically, the tumor showed anaplastic feature and did not make any organoid pattern, it was not able to determine the nature of differentiation of tumor cells. The mucin stains such as PAS, mucicarmine, and alcian blue failed to reveal mucin-producing cell.

To determine the nature of tumor cells, immunohistochemical staining for cytokeratins (pancytokeratin, cytokeratin 7, 19, and 20), epithelial membrane antigen (EMA), vimentin, smooth muscle actin (SMA), desmin, CEA, C-kit, CD34, S-100 protein, and HMB45 were performed. Most tumor cells showed diffuse strong immunoreactivity to vimentin (Fig. 2C), but there was a distinct area showing immunoreactivity to epithelial markers such as cytokeratins, EMA (Fig. 2D). This area was also positive for CEA. The tumor did not express other specific markers, such

Table 1. Immunohistochemical and Mucin Staining Profile of the Tumor

Marker	Carcinomatous area	Sarcomatous area
Pan CK	+	-
CK 7/20	-/-	-/-
CEA	+	-
EMA	+	+, weak
Vimentin	+, focal	+
SMA	-	+
c-kit	-	-
CD34	-	-
S-100	-	+, focal
Mucin stains	-	-

CK, cytokeratin; CEA, carcinoembryonic antigen; EMA, epithelial membrane antigen; SMA, smooth muscle actin; +, positive; -, negative.

Table 2. Cases of Colonic Carcinosarcoma

No.	Age/Sex	Site	Met	Treatment	Rec	Further Tx	Survival
1	73/M	Sigmoid	No	LHC	Yes	CTx	4 yr
2	71/F	Rectum	No	RTx+AR	Yes	Ex	6 mo
3	86/F	Ascending	No	RHC	No	-	Alive, 2 yr
4	89/F	Ascending	Yes	RHC+CTx	-	-	5 mo
5	69/F	Descending	No	LHC	-	-	6 mo
6	60/F	Transverse	No	RHC+CTx	No	-	14 mo
7	78/M	Descending	No	LHC+CTx			Alive, 16 mo
8	82/M	Rectum	No	LAR	Yes	-	6 mo
9	57/F	Rectosigmoid	Yes	Resection+CTx	-	-	4 mo
10	41/F	Sigmoid	Yes	LAR+CTx	-	-	4 mo
11	56/F	Left colon	Yes	En block resection	Yes	IPCH	21 mo
12	84/M	Splenic flexure	No	LHC	-	-	4 day
13	80/F	Sigmoid	No	Op (not specific)	-	-	6 mo
14	71/M	Hepatic flexure	Yes	Ex	-	-	-
15	60/M	Rectum	No	APR+CTx	Yes	RTx	6 mo
16	81/M	Ascending	Yes	RHC+CTx	-	-	Alive, 2 yr
17	13/F	Rectosigmoid	Yes	Ultra-LAR+CTx	-	-	Alive, 2 mo
18	72/F	Cecum	No	RHC	No	No	Alive, 20 mo

M, male; F, female; Met, metastasis; Rec, recurrence; Tx, treatment; LHC, left hemicolectomy; CTx, chemotherapy; RTx, radiotherapy; AR, anorectal resection; Ex, explorative laparotomy; RHC, right hemicolectomy; LAR, low anterior resection; IPCH, intraperitoneal chemohyperthermia; Op, operation; APR, abdominoperineal resection.

as SMA, desmin, S-100 protein, C-kit, CD34, and HMB45 (Table 1). A small number of tumor cells were weakly immunoreactive to p53. Although epithelial component was hardly defined by histological examination, in view of the immunoprofile, the final diagnosis was carcinosarcoma.

Because the resection margin was involved by malignant cells, right hemicolectomy was performed, 3 weeks later. However, no residual tumor was found at the previous polypectomy site. There was no metastasis in 35 pericolic lymph nodes. The chest computed tomography scan showed an abnormal nodule, but it was pathologically confirmed in biopsy as chondroid hamartoma. She is alive for 20 months after operation without recurrence.

DISCUSSION

Carcinosarcoma of the colon is a rare neoplasm composed of both carcinomatous and sarcomatous elements. It was also called as sarcomatoid carcinoma, carcinoma with mesenchymal stroma, carcinoma with sarcomatous change, spindle cell carcinoma, and pleomorphic anaplastic carcinoma.⁹ Among them, the term 'sarcomatous carcinoma' is considered to be the best one for description of tumors in which the sarcomatous components, at least focally, expressing cytokeratin, but the term 'carcinosarcoma' is officially used in World Health Organization classification.⁹

We reviewed the clinicopathological features of previously reported 17 cases (Table 2).⁴⁻²⁰ The ages of patients ranged from 13 to 89 (mean, 67.6) years. Ten patients were women and seven were men. Sometimes, colonic carcinosarcoma deeply invaded the bowel wall, metastasized widely, resisted multi-agent chemotherapy, and caused early patient death.^{7,12} The prognosis was so dismal that several patients died within a few months (10 cases). Most cases occurred in left side colon (12 patients), including descending, sigmoid, and rectum. Only 2 and 3 cases occurred in transverse and ascending colon, respectively. Carcinosarcoma had a tendency to distantly metastasize (7 cases).^{7,12-14,17,19,20} Metastasis sites were liver (3 cases),^{7,12,19} lymph node (3 cases),^{13,14,20} omentum or peritoneum (3 cases),^{12,14,17} and spleen (1 case).¹²

Although histogenesis of carcinosarcoma is uncertain, most of the tumors containing carcinoma and sarcomatous components are considered as monoclonal growth rather than collision of tumors, and there is a report explaining this phenomenon by activation of epithelial-mesenchymal transition.²¹ The immunoprofile of our case does not conflict with interpreting this tumor as a result of epithelial mesenchymal transition.

In summary, the present report describes a case of carcinosarcoma of the cecum in a 72-year-old woman. This case appears to be the second report of cecal carcinosarcoma.

CONFLICTS OF INTEREST

No potential conflict of interest relevant to this article was reported.

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