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*Original Article*

# Leiomyosarcoma of the sigmoid colon with biorherapy

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**Abstract:** Background: Leiomyosarcoma (LMS) of sigmoid colon is an extremely rare neoplasm with poor prognosis, which is often misdiagnosed as colonic adenocarcinoma. The diagnosis of LMS depends on the pathology. The mitosis and the histological grade observation are important for diagnosis. Unlike gastrointestinal stromal tumor, c-KIT in LMS is negative, and immunohistochemistry examination is positive for SMA, desmin, EMA and vimentin. Case presentation: Here, we report a case of colonic LMS, with incompletely intestinal obstruction and hematochezia. Sigmoidoscopy showed a large intraluminal lesion in the sigmoid colon and the surface was irregular, showing as dark and red. Colon was almost occluded. The surgically resected sigmoid colon was detected by immunohistochemitry and diagnosed as LMS, and biotherapy was given to the patient after surgery. Conclusion: With appropriate diagnosis and treatment, the prognosis of LMS is still poor. For this patient, the follow-up is still undergoing.

**Keywords:** Leiomyosarcoma, sigmoid colon, surgical treatment, biotherapy

## Introduction

Primary mesenchymal tumors of gastrointestinal (GI) tract are extremely rare, and represent only 0.1%-3% of all gastrointestinal tumors. Leiomyosarcoma (LMS) is the common histopathological type [1] with poor prognosis [2]. LMS usually originates from smooth muscles of colon muscular layer [3]. The common sites of distant metastases of LMS are lung, kidney and liver [4].

Here, we described a case of colon LMS, which easily induced intraluminal or extraluminal obstruction and perforation.

The incidence of LMS in the GI tract is extremely rare. The clinical manifestations include asymptomatic, abdomen pain, hematochezia, weight loss, bowel obstruction, etc. Neighboring tissue infiltration and liver metastases are common, but lymphogenic spread is rare. The diagnosis of LMS depends on the pathology. The mitosis and the histological grade observation are important for diagnosis. Unlike gastrointestinal stromal tumor, c-KIT in LMS is negative, and immunohistochemistry examination is positive for SMA, desmin, EMA and vimentin.

A therapeutic regimen has not been established because of lacking of prospectively and randomly clinical trials. After resection, the common treatment is anthracycline-based chemotherapy [5]. 5-FU-based regimens including FOLFIRI or FOLFOX combined with Cetuximab or Avastin are also reported [6]. Radiotherapy is less effective for gastrointestinal LMS [7]. Compared to radiotherapy and chemotherapy, biotherapy could improve the life quality and immune function of the patients, decrease bone marrow suppression and prolong survival time [8]. It was reported that cytokine-induced killer (CIK) cells were sensitized to specific antigens produced by dendritic cells (DCs), which was safe and effective for patients with malignant tumors. In this case, after surgery, the patient was received with DC-CIK immunotherapy. According to Shirafuji A et al, multidisciplinary therapy was the best treatment for LMS [9].

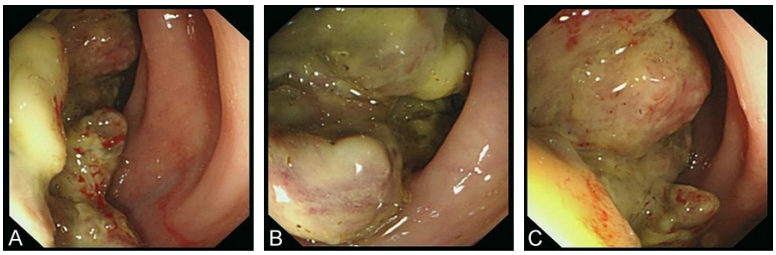

Figure 1. Sigmoidoscopy: a large intraluminal lesion in sigmoid.

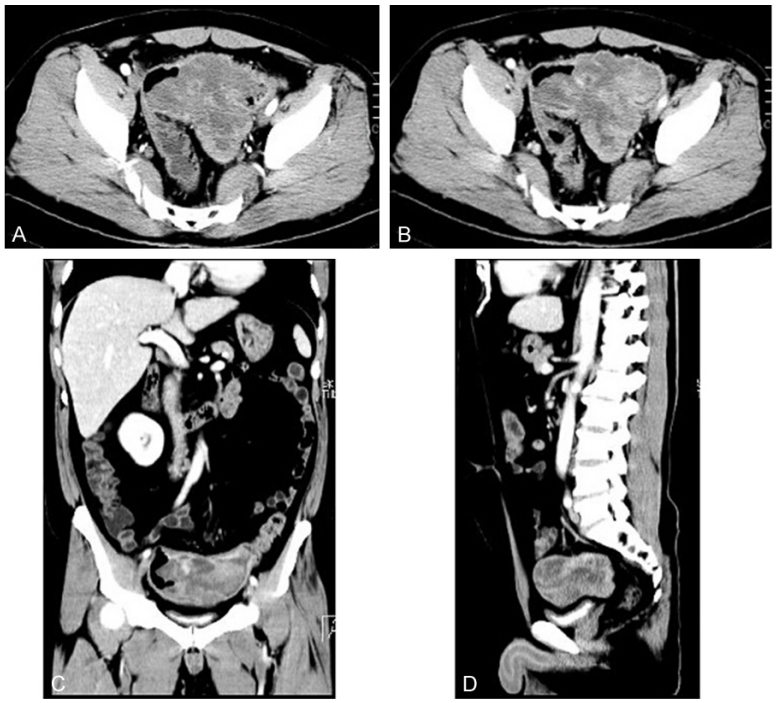

Figure 2. Enhanced abdomen and pelvic computed tomography (CT) showed that sigmoid colon was dilated and with irregular mass (9.25 cm × 9.10 cm × 5.83 cm). The average of arterial phase was 43HU, the average of venous phase was 46HU, and the average of delay phase was 46HU. The internal density of the mass was uneven with clear boundary. This intraluminal mass was closed to the colon wall but not brock the serosa. There was no unusual sign of obstruction nearby. On the other part of the colon, pelvic and bilateral inguinal didn't show abnormal enhancement or lymph nodes.

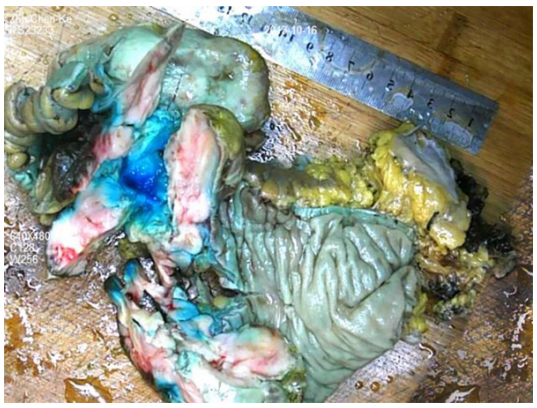

Figure 3. Postoperative specimen: The tumor was with size of 10 × 8 cm, as a part of sigmoid colon.

Some studies suggested that giving and receiving emotional support had positive effects on patients with high competence of emotional communication. However, the social support could also have negative impact on the patients with low competence of emotional communication [10]. Therefore, emotional imbalance should be properly taken into consideration for the psychological treatment and management in the patients with cancers or tumors [11].

## Case presentation

A 50-year-old man was sent to our hospital with abdominal pain and bloody stools more than twenty days. The patient lost weight about 20 kilograms with these pains. Rectal examination revealed no lump, while the finger was dyed as dark and red.

Sigmoidoscopy showed a large intraluminal lesion in the sigmoid colon and the surface was irregular with dark and red. Colon was almost occluded by this neoplasm (**Figures 1**, **2**). The pathological diagnosis according to the sigmoidoscopy biopsy was malignant neoplasm of sigmoid colon accompanied by large area necrosis. The biopsy tissue of the colon lesion was with immunohistochemistry. The results showed as positive smooth muscle actin (SMA), desmin, EMA and CD68, but negative Dog-1, S-100, CD117, myoD1, myogenin, CD34 and Ki67, while Ki67 was nearly 10%.

Then we performed sigmoidectomy and intestinal anastomosis (**Figure 3**). Pathological diagnosis indicated that there was malignant neo-

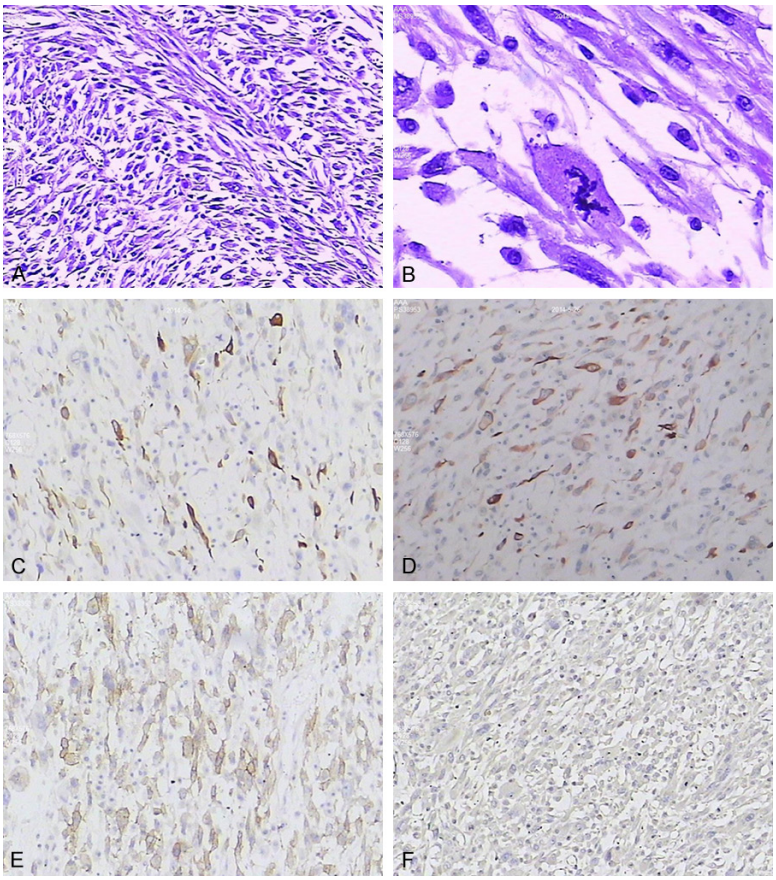


**Figure 4.** HE staining and immunohistochemistry: There was interlaced fusiform cell with varied degrees of atypia and pleomorphism in the tumor. Immunohistochemistry was with positive smooth muscle actin (SMA), desmin, EMA, Vimentin.

plasm in sigmoid colon. None of the abnormal detection surrounding lymph nodes was observed. There were interlaced fusiform cells with varied degrees of atypia and pleomorphism in the neoplasm. The surgical resection tissue of the colon lesion was with immunohistochemistry. The results showed as positive SMA, desmin, EMA, Vimentin and CD30, but negative S-100, CD117, Dog-1, MyoD-1, CD-20, CD-3, CD-68, CD-34, GranzymeB, MBP, MPO, ALK, HMB-45, Myogenin and Villin, while the Ki67 was nearly 50%. Immunohistochemistry results indicated that the neoplasm was colon LMS (**Figure 4**). The patient was given only biotherapy and received further treatment at Cancer Hospital.

## Conclusions

Biotherapy might be a new way to treat the LMS.

## Disclosure of conflict of interest

None.

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