Schwannoma in the Sigmoid Colon: Report of a Case

TERUO SASATOMI*, YOSHIKAI TSUJI, TOSHIKAI TANAKA*, HIROYUKI HIRIUCHI*, SHIN HYODO, KIYOAKI TAKEUCHI, OSAMU NAKASHIMA** AND KAZUO SHIROZU*

Department of Surgery, Fukuoka Prefectural Asakura Hospital, Amagi 838-0069 and Departments of Surgery * and Pathology**, Kurume University School of Medicine, Kurume 830-0011, Japan

Summary: Schwann cell tumor occurring in the intestines is rare. A 68-year-old female came to our hospital because of hematemesis. Barium enema and colonoscopic examination revealed submucosal tumor in the sigmoid colon. Laboratory data showed mild anemia. No other abnormal finding was found in the blood chemistry. Tumor marker levels of carcinoembryonic antigen (CEA), CA19-9, alpha feto protein (AFP) and neuron specific enolase (NSE) were within normal limits. The exploratory laparotomy confirmed a large sigmoid colon tumor. She received sigmoid colectomy. The resected specimen was a submucosal tumor with central depression, measuring 4.7×3.5×3.0 cm in size. The cut surface of the tumor was yellowish hue with necrosis. Histological examination showed spindle-shaped tumor cells with palisading comma-shaped nuclei and the nuclear pleomorphism. Immunohistochemical examination revealed that the tumor was positive for S-100 protein staining, and negative for Actin and for H.H.F. staining. These findings showed that this tumor was of Schwann cell origin. We report here the case in detail of a schwannoma in the sigmoid colon.

Key words schwannoma, neurilemoma, sigmoid colon

INTRODUCTION

Schwann cell tumors occurring in the intestines are similar in nature to those occurring elsewhere in the body [1,2]. They are mesenchymal lesions consisting primarily of a proliferation of fusiform cells resembling Schwann cells [3-6].

An isolated intestinal Schwann cell tumor is exceedingly rare. We reported on a patient with a schwannoma in the sigmoid colon.

CASE REPORT

A 68-year-old female came to our hospital presenting hematemesis. Barium enema and colonoscopic examination revealed a submucosal tumor in the sigmoid colon (Figs 1 and 2). Computed tomography with contact enhancement revealed a presacral tumor. She had no pigmented skin lesion and no pigmented iris hamartomas.

Laboratory data showed the white blood cell count to be 8000/mm², hemoglobin 8.5 g/dl, hematocrit 26.8%, and plt 36.6×10⁴. No other abnormal finding was found in the blood chemistry. The serum carcinoembryonic antigen (CEA) level was 0.8 ng/ml (<2.5 ng/ml). CA19-9 level was 5 U/ml (<37 U/ml). The alpha feto protein (AFP) level was 2 ng/ml (<2.5 ng/ml). The neuron specific enolase (NSE) level was 7.1 ng/ml (<10.0 ng/ml). All serum tumor marker levels were within normal ranges.

The patient was diagnosed as having a submucosal tumor in the sigmoid colon. We diagnosed it as a leiomyoma from the microscopic findings of the biopsy specimen. An exploratory laparotomy confirmed a large sigmoid colon tumor. She simultaneously received sigmoid colectomy with lymph node dissection. The resected specimen was a submucosal tumor, arising from the muscularis propria, with a...
central depression and measuring $4.7 \times 3.5 \times 3.0$ cm in size (Fig. 3A).

The cut surface of the tumor had a yellowish hue with necrosis (Fig. 3B).

**Histology**

A histopathological examination showed spindle shaped tumor cells with palisading comma-shaped nuclei. Nuclear pleomorphism was observed (Fig. 4). In addition, the tumor was in the presence of peripheral lymphoid cuffing [20].

The tumor was arising from the Auerbach's plexus in the lamina propria. There was low mitotic count in our case. And there was no lymph node metastasis.

Immunohistochemical examination revealed that the tumor was positive for S-100 protein staining (Fig. 5), and negative for Actin, and for H.H.F. staining. These findings indicated that this tumor was of Schwann cell origin.
DISCUSSION

Schwann cell tumors in the gastrointestinal tract are estimated to occur in approximately from 10 to 25 percents of the patient with von Recklinghausen’s disease [7], but an isolated Schwann cell tumor in the lower intestine is rare. Stout et al. reported that 2 tumors of 48 patients with the primary gastrointestinal schwannoma were found in the lower intestine [4]. In the Japanese literatures, to our knowledge, only 51 cases have been reported in Japan since 1940 [8-12]. The mean age of the 52 patients, including our case, was 58 years, with a range from 12 to 76 years. The male to female ratio was 1:1. Among the 52 tumors, 28 were rectal schwannomas, 20 were colon schwannomas (3 caecal, 3 ascending, 6 transversal, 4 descending and 4 sigmoid colon schwannomas), 3 were appendical schwannomas and the site was unreported in one case [13,14].

Patients with this disease have presented alternation in bowel habit, rectal bleeding and pain on defecation. Discriminatory preoperative diagnostic criteria are not yet established. Barium enema with colonoscopy usually reveal a submucosal tumor. Only 8 cases were correctly diagnosed before operation [12,14]. Diagnosis must differentiate the schwannoma from the leiomyoma and the leiomyosarcoma. Immunohistochemical staining of the S-100 protein is widely recognized for differentiation [16-18]. The schwannian tumor is positive for S-100 protein immunostaining and negative for actin, and for H.H.F. immunostaining.

Distinction between benign and malignant schwannomas in the intestinal tract is difficult. Fukuchi et al. reported that 11 of 41 cases of colorectal schwannoma were malignant [15]. Generally speaking, the malignant lesion has large size, areas of necrosis and evidence of invasion [19].

The most important criteria of making the diagnosis of malignancy is high mitotic count. Nuclear atypia may also be present in both benign and malignant schwannomas [21]. There was low mitotic count in our case. Accordingly we have diagnosed our case to be of a benign schwannoma.

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REFERENCES