**Case Report**

**Schwannoma of the Colon: Report of a Case and Review of the Literature**

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**Key Words**
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Schwannomas of the colon are extremely rare, and it is necessary to treat them by radial excision with a wide margin because of their tendency to recur locally and become malignant if inadequately treated. In the present study, we report a rare case of a colonic schwannoma that was successfully treated by surgical resection in our department. Immunohistochemistry revealed that the tumor was positive for S-100 and negative for C-KIT, smooth muscle actin, CD21, CD34, and CD35. The patient was therefore diagnosed with a schwannoma, not a gastrointestinal stromal tumor (GIST). We report the findings of endoscopy, radiology, and pathology in a patient with colonic schwannoma. The literature on colonic schwannomas has been reviewed.

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**Case Report**

Our patient was a 45-year-old woman whose general health condition was good before the appearance of symptoms. She visited our gastrointestinal clinic in June 2005 complaining of bloody stool with blood clots and mucus content for 1 week, with several episodes of mild diarrhea. She denied any abdominal pain, body weight loss, or recent change in bowel habit. She also denied any medical or operative history or family history of cancer. Her vital signs were normal and physical examination were unremarkable. Flexible sigmoidoscopy revealed a huge yellow bulging intra-luminal tumor obstructing the lumen at 50 cm above the anal verge (Fig. 1). A biopsy of the tumor was obtained and pathology showed inflammatory exudates, necrotic debris, acute and chronic inflammation, and granulation tissue formation. Though no malignancy was found in the biopsy specimen, endoscopic findings indicated colon cancer, so the patient was referred to a proctologist for operation. Laboratory tests and other examinations demonstrated only mild anemia (hemoglobin, 10.0 g/dL). Dou-
ble-contrast barium examination revealed a huge ovoid intra-luminal mass in the mid-portion of the descending colon, which resulted in partial obstruction of the colon. (Fig. 2). Abdominal computed tomography (CT) using oral and intravenous contrast agents revealed a soft tissue mass at the junction of the descending and the sigmoid colon.

No definite paraaortic and pelvic lymphadenopathy or definite hepatic metastasis was noted (Fig. 3).

In July 2005, the patient underwent an operation in which a segment about 26 cm-long of the left colon was resected. On sectioning, a 5*4*3 cm yellowish white polypoid mass was found. The tumor consistency was elastic, and the tumor originates from a muscular layer with focal ulcerated overlying mucosa. Microscopic examination of the neoplasm revealed a tumor in the muscular wall composed of interlacing bundles of spindle cells (Fig. 4). Mild nuclear pleomorphism and a mitotic activity of 6/50 HPF were noted. Immunohistochemical staining revealed that the tumor cells were positive for S-100 (Fig. 5) and negative for C-KIT, smooth muscle actin, CD21, CD34, and CD35. The patient was therefore diagnosed with a colon schwannoma, not a gastrointestinal stromal tumor (GIST).

The patient recovered well. She was discharged on the eighth postoperative day and regularly followed up at the clinic for 2 years; no recurrence was found.

**Discussion**

Schwannomas usually present as well-circumscribed masses attached to peripheral nerves, cranial nerves, or spinal nerve roots.1 Schwannomas of the colon and rectum are extremely rare. Primary schwannomas of the bowel are rare and occur most frequently
Colonic schwannomas were first reported by Lamy et al.\textsuperscript{6} A large number of schwannoma cases have been reported since 1910. Ito et al reviewed 37 cases of schwannomas of the large intestine in 1996.\textsuperscript{7}

Colonic schwannomas tend to be circumscribed, but are also non-encapsulated nodular or ovoid masses with a polypoid component. They present as polypoid intra-luminal lesions, and the overlying mucosa may have ulcerations. The tumor specimen obtained by forceps biopsy is not always sufficient for histological diagnosis. In our patient, the biopsy showed ulceration with granulation tissue. The patient presented with symptoms, including abdominal pain, bowel obstruction, and rectal bleeding.\textsuperscript{8}

Colonic schwannomas are slow-growing tumors and are usually solitary. These lesions are characterized by a peripheral lymphoid cuff, which may contain germinal centers.\textsuperscript{3} Routine hematoxylin and eosin staining does not enable differentiation between neurogenic and myogenic tumors. Immunohistochemical staining is a new reliable technique for making a correct differential diagnosis. In our patient, the tumor cells were positive for S-100 protein and negative for CD34 and smooth muscle actin. Gastrointestinal schwannomas are reported to be commonly associated with a diffuse S-100 protein reaction and peri-tumoral lymph follicles.\textsuperscript{9}

Most schwannomas are benign and symptomatic, but the possibility of malignant degeneration does exist and is directly related to the tumor dimensions. Radical surgical treatment is the gold standard in all cases. The role of chemotherapy and radiotherapy in treating schwannomas remains uncertain.\textsuperscript{10,11}

In our patient, the tumor size was large (5 cm) and the mitosis count was 6 per 50 high-power fields; therefore, we diagnosed this tumor as having high malignancy potential. Since histological criteria for defining the grade of malignancy of gastrointestinal schwannomas have not yet been determined, and still their metastatic potential is not known, careful observation of the patient’s postoperative course should be necessary.

**References**

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