Leiomyosarcoma of the Rectum: Report of Three Cases

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Leiomyosarcoma is a rare malignant tumor, originating in the smooth-muscle tissue of various organs. In the digestive tract, the tumor is most frequently found in the stomach and small intestine, whereas involvement of the rectum is very rare, extremely malignant, and has a worse prognosis than leiomyosarcoma of any other part of the digestive tract. Approximately 100 cases are reported in the medical literature. We describe herein three additional cases with a review of the literature.

Report of Three Cases

Patient 1: A 48-year-old Jewish woman of Eastern European origin was hospitalized for low abdominal pain, intermittent constipation, and diarrhea. The symptoms had first appeared two years before admission. During the few months immediately preceding admission she had lost more than 22 pounds in weight. Barium-enema examination, performed on admission, revealed a stricture in the rectosigmoidal area. Exploratory laparotomy revealed a large pelvic tumor, which invaded the retroperitoneum and was attached to the large blood vessels. The tumor was not resectable, hepatic metastases were seen, and histologic examination showed leiomyosarcoma (Fig. 1). The patient was referred to the Department of Oncology, and a firm, nonmovable mass, 15 cm in diameter, was found in the lower abdomen. The patient was treated with a combination of cytostatic agents that consisted of cyclophosphamide, methotrexate and vincristine and, in addition, received cobalt-60 radiotherapy, 3,000 rads to the pelvis. This treatment proved ineffective, as new metastases appeared in the inguinal lymph nodes and lungs. Actinomycin D was then prescribed, with little effect, and the patient died 18 months after diagnosis.

Patient 2: A 54-year-old man of Jewish origin had been generally healthy until three months prior to diagnosis, when he had begun to notice tenesmus and constipation. Physical examination and laboratory tests showed no abnormality. On rectoscopy a mass was seen in the rectum. The patient underwent abdominoperineal resection and the terminal 20 cm of the large intestine, including the anus, was removed. A white, elastic, tumorous mass, 8 x 8 x 2.5 cm, was found 6 cm above the anus. Microscopic examination revealed the tumor to be composed of elongated cells with blunt-ended nuclei that grew in interfacing cords with some pleomorphism and an increased number of mitoses. The tumor was defined as a leiomyosarcoma that originated in the muscularis and grew into the serosa (Figs. 2 and 3). Treatment was commenced with cobalt-60 teletherapy, 4,000 rads to the lower abdomen. Twenty months later, a local recurrence was found and the patient again received 4,000 rads to the pelvis. Following irradiation the perineal mass did not decrease in size, and three courses of adriamycin were given, without effect. Subsequently, five courses of vincristine and actinomycin D were administered, again without effect. The perineal tumors enlarged, and additional masses were felt throughout the abdominal wall; metastases to the liver and ribs appeared. The patient died 37 months after diagnosis.

Patient 3: A 71-year-old man of Eastern European origin was admitted because of intermittent rectal bleeding that had begun a few weeks before admission. During this period he had lost 15 pounds in weight. On physical examination the patient was found in good general condition. A papillary tumor, about 2 cm in diameter, was palpable on rectal examination. Under the mistaken diagnosis of a rectal polyp, local resection was performed, and microscopic examination of the resected specimen showed leiomyosarcoma. Subsequently abdominoperineal resection was undertaken, but no additional malignancy was found.

Discussion

Leiomyosarcoma of the alimentary tract can develop in the stomach, small intestine, colon and rectum. The tumor is most common in the stomach and small intestine, and extremely rare in the colon and rectum. Only about 100 cases of leiomyosarcoma of the rectum have been described in the literature; in the largest series, 41 cases were described. In 1974, 26 cases of leiomyosarcoma of the rectum that had appeared in the Japanese literature were reviewed. Other published works have described only sporadic cases.

Leiomyosarcoma accounts for 0.1-0.5 per cent of tumors of the rectum. It originates from the smooth muscle and grows towards either the rectal lumen or the serous membrane. When the tumor grows towards the lumen it can cause ulceration of the mucosa and rectal bleeding. The tumor usually infiltrates blood vessels, but can also spread to regional lymph nodes. It tends to recur locally even after radical resection. It can appear at any age, but the onset is usually between 30 and 85 years of age. It is usually palpable on rectal examination, thus making diagnosis prompt and easy. There are no characteristic symptoms; the patient complains of changes in bowel habits and an increased number of mitoses. The tumor was defined as a leiomyosarcoma that originated in the muscularis and grew into the serosa (Figs. 2 and 3). Treatment was commenced with cobalt-60 teletherapy, 4,000 rads to the lower abdomen. Twenty months later, a local recurrence was found and the patient again received 4,000 rads to the pelvis. Following irradiation the perineal mass did not decrease in size, and three courses of adriamycin were given, without effect. Subsequently, five courses of vincristine and actinomycin D were administered, again without effect. The perineal tumors enlarged, and additional masses were felt throughout the abdominal wall; metastases to the liver and ribs appeared. The patient died 37 months after diagnosis.
FIG. 1. Leiomyosarcoma. Notice in the mature smooth muscle cells the variation in sizes and shapes of nuclei, and scanty intercellular substances (hematoxylin and eosin × 400).

FIG. 2. Photomicrograph showing the tumor in the muscular layer of the large intestine (hematoxylin and eosin × 40).

FIG. 3. High-power view of Figure 2, showing elongated cells, blunt to oval nuclei, mitoses, and interlacing pattern of the bundles with suggestion of palisading (hematoxylin and eosin × 250).