Primary Leiomyosarcoma of the Lesser Sac —Report of a Case—

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ABSTRACT: A case of leiomyosarcoma arising in the lesser sac in a 64-year-old man is presented. A second operation was required because of local recurrence 6 years following the first operation. A review of the literature revealed that only eight cases of leiomyosarcoma arising in the lesser sac, including our case, were reported. Almost all of these patients had symptoms of abdominal pain or distension. The tumor tended to grow to a large size and about 90 percent were over 10cm in the maximal diameter. The prognosis of these series was poor and our own patient seems to be the second 5 year survivor.

KEY WORDS: leiomyosarcoma, lesser sac

INTRODUCTION

Leiomyosarcoma arising in the lesser sac is a very rare malignant neoplasm. To date, only seven cases have been reported in the literature.

We treated a man with primary leiomyosarcoma of the lesser sac and which recurred locally and was extirpated successfully 6 years after the first operation.

CASE REPORT

A 64-year-old Japanese man was admitted to the Saga Prefectural Hospital on January 21, 1977, with severe epigastralgia. He had had transient mild epigastralgia and nausea since the previous year.

On examination localized tenderness was noticed in the right hypochondrium and a smooth hard tumor was felt in the epigastrium. Abdominal sonography showed a solid mass in the left hypochondrium and multiple stones in the gallbladder. Alimentary examination of the gastrointestinal tract revealed that the stomach was displaced laterally by the mass (Fig. 1-a).

During the operation, an encapsulated, fragile and reddish mass, the size of an infant's head, was noted in the lesser sac between the liver and the stomach. The tumor was well circumscribed and no pedicle was noticed. The lump was extirpated intact. The stomach wall and liver surface were not involved. Neither metastatic lesions of the liver nor peritoneal implants were evident. Cholecystectomy was also performed.

After a fair postoperative course, the patient had been in good health until he began to vomit and feel abdominal pain after meals in June, 1982. He was re-admitted to Saga Prefectural Hospital in December, 1982.

On second admission, a smooth hard mass was palpated in the left upper quadrant. Examination of the gastrointestinal tract revealed lateral displacement of the stomach by the mass with irregular barium collection at the

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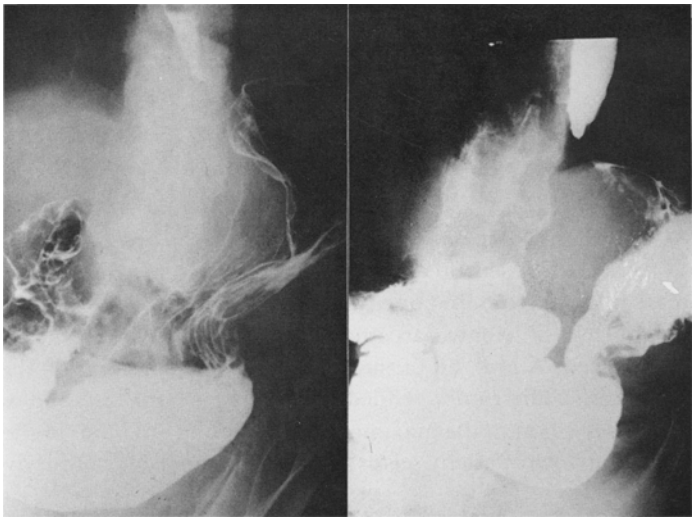
Presented at the Kyushu Regional meeting of the Japan Surgical Society, Oita, July 2–3, 1983



(a) (b)

Fig. 1. Barium meal studies.
(a): Evidence on the first admission shows that the body of the stomach is compressed smoothly by a mass.
(b): Evidence on the second admission shows the same findings as (a). Irregular barium flecks are present.

lesser curvature of the body (Fig. 1-b). Gastroscopy showed that the posterior wall near the lesser curvature of the upper portion of the body was compressed by the extrinsic tumor. A raised nodular infiltrating lesion with a large central ulcer was also revealed. Gastroscopic biopsy showed a leiomyosarcoma. CT scan showed a soft tissue density mass, 10 cm in diameter, with irregular low density. Aortography disclosed a hypervascular mass in the left upper quadrant, which was supplied by the left intercostal, left subcostal, left lumbar, left gastric and hepatic arteries (Fig. 2).

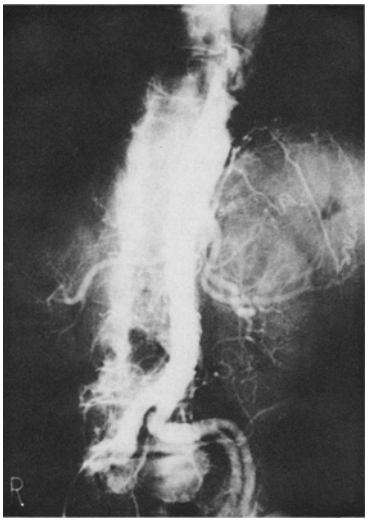


Fig. 2 Aortography taken prior to resection of the recurrent tumor showing irregular tumor vessels within the hypervascular tumor in the left upper quadrant.

The recurrent tumor was extirpated with combined total gastrectomy on January 31, 1983. Recovery was smooth and follow-up 11 months after the second operation revealed no evidence of recurrence or metastatic disease.

Pathology

The first surgical specimen measured 12 × 11 × 7.5 cm. The tumor was firm, lobulated and encapsulated with prominent vessels. The cut surface showed a white, firm structure with prominent areas of necrosis and hemorrhage (Fig. 3-a). The second surgical specimen consisted of totally resected stomach and the tumor mass which measured 12 × 13 × 6 cm in its largest dimensions. The post-

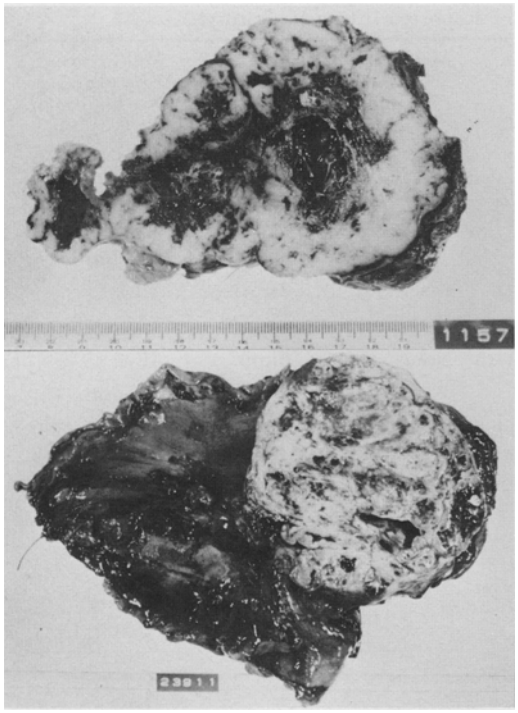


Fig. 3 Gross resected specimens.
(a): first. (b): recurrence. Cut surfaces of both tumors showing necrosis and hemorrhage.

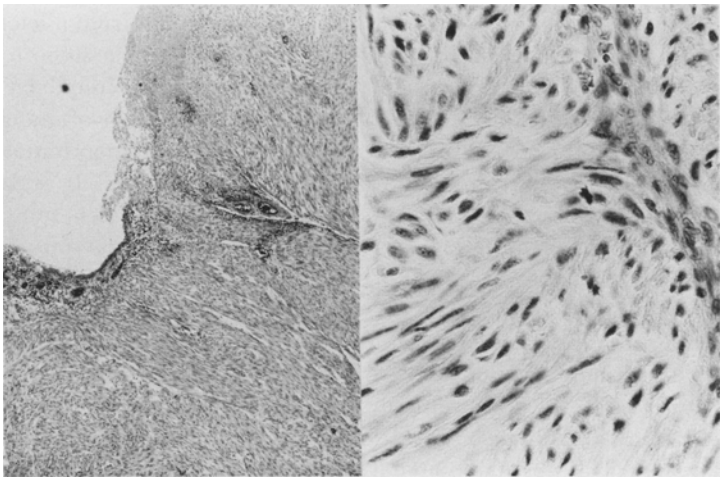
erior wall of the body of the stomach was infiltrated by the mass. The cut surface showed the same findings as the first surgical specimen (Fig. 3-b).

Microscopic findings of the first and second specimens were very similar. Each tumor consisted of spindle shaped cells arranged in interlacing bundles. There were moderate cellularity and pleomorphism with foci of necrosis and hemorrhage. More than one mitotic figure per high power field was seen in the area of greatest mitotic activity (Fig. 4). The diagnosis was leiomyosarcoma of the lesser sac and its local recurrence, after 6 years.

Discussion

Primary leiomyosarcoma of the lesser sac is very rare. We found only seven reported cases in the Japanese and foreign literature (Table 1). Eight cases, including our case, were analyzed. The age group at presentation varied from 32 years to 70 years, the average being 52 years. The male: female ratio was 5:3.

Six out of eight (62 percent) patients complained of an abdominal mass. The remainder complained of abdominal distress or distension. No specific signs, such as hematemesis and



(a) (b)

Fig. 4 Microscopic appearances of recurrent specimen showing spindle shaped cells arranged in interlacing bundles.
(a): ×100. (b): ×400

Table 1. Eight Leiomyosarcomas: Reported in the Literature

Authors	Year	Sex	Age	Symptom	Size (cm)	Metastasis	Hist.type	Follow-up
Yannopoulos & Stout	1963	M	32	Abdominal Distress	6×4	Peritoneum	Bizarre	No Follow-up
Pizzimbono et al.	1973	F	51	Abdominal Mass	26×21×8	Liver	Bizarre (4/HPF)	Died 12 Months
Kurosawa et al.	1973	F	70	Abdominal Mass	22×14×13	Generalized	Blunt (a few)	Died 14 Months
Kojima et al.	1976	M	43	Abdominal Distension	22×19×12	Liver	Bizarre (+)	Alive 2 Years
Seki et al.	1980	M	44	Abdominal Mass	17×13×11.5	None	Blunt	Alive 5 years
Tanimura et al.	1980	F	52	Abdominal Mass	26×15×11	None	Blunt (1/2-3F)	Alive 3 Years
Hara et al.	1980	M	63	Abdominal Mass	10×8×4.5	None	Blunt (often)	Alive 10 Months
Souda et al.	1984	M	64	Abdominal Pain	12×11×7.5	None	Blunt (1/HPF)	Alive 6 Years 11 Months

melena, were reported. The largest diameter of the tumors varied from 6 cm to 26 cm: four of them (50 percent) were over 20 cm and seven of them (88 percent) were over 10 cm. There were four patients with metastasis at the time of the operation: two had liver metastasis, one had peritoneal implants and one had generalized metastasis.

Preoperative diagnosis of mesenteric and omental tumors is difficult. Sometimes these tumors are detected accidentally during surgery. The abdominal mass in our patient was detected during physical examination at the time of the first admission.

Routine gastrointestinal examination and barium enema will reveal only displacement of the stomach, small bowel and colon. The CT scan and echogram are useful procedures for demonstration of the tumor location and its nature. Angiography is also of great value in diagnostic orientation. Granmayeh et al.[1] stated that angiographic features of abdominal leiomyosarcomas differ depending on the site of origin; small bowel lesions are hypervascular, those in the stomach and colon are moderately vascular, retroperitoneal lesions are hypovascular to moderately vascular, and bladder lesions can be either moderately vascular or hypervascular. The lesion in our patient was hypervascular with neovacularity and early venous filling.

In the absence of metastatic spread or invasion, there is some difficulty in differentiating a leiomyosarcoma from a leiomyoma. Recent studies[2,3] on uterine smooth muscle tumors have shown that the frequency of mitoses is the most useful indicator of malignancy, but this does not apply to smooth muscle tumors arising in other sites.[4,5] It is well known that gastrointestinal smooth muscle tumors may metastasize even when mitoses are infrequent or absent.[6,7]

Six of the eight reported patients with leiomyosarcoma of the lesser sac had mitoses and the number varied from a few within all visual fields to four per high power field. In these cases, the number of mitotic figures alone does not seen to be a reliable sign of malignancy. Ranchod and Kempson[8] mentioned that not only the number of mitoses, but tumor necrosis, tumor size, cellularity and cellular atypia may be helpful parameters.

The prognosis of leiomyosarcoma of the lesser sac is poor (Table 1). Our patient seems to be the second to live over 5 years following surgical treatment.

The most effective treatment is surgical resection. Spontaneous regression after incomplete excision of gastric leiomyosarcoma[9] and long-term survival after synchronous resection of metastasis from an intestinal leiomyosarcoma[10] were reported. Aggressive surgery may lead to a good prognosis even when there is metastasis.

(Received for publication on Apr. 12, 1984)

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