

Smooth Muscle Tumors of Digestive Tract

SİNDİRİM SİSTEMİ DÜZ KAS TÜMÖRLERİ

Nihat BENGİSU*, Tahir E. PATIROĞLU**, Abdullah SAĞLAM*, Ömer ŞAKRAK*, Nusret AKYÜREK*, Engin OK*, Yücel ARITAŞ*, Yaşar YEŞİLKAYA*

Erciyes University School of Medicine, General Surgery* and Pathology** Departments

SUMMARY

Thirteen patients aging between 12 and 65 years were diagnosed to have smooth muscle tumors of the gastrointestinal tract, which were evaluated surgically and histopathologically. Six of them were leiomyomas, 3 of which localized to the stomach, 1 to the oesophagus, 1 to the duodenum and 1 to the transverse colon; 5 of them were leiomyosarcomas 3 localized to the distal ileum, 2 to the ascending and sigmoid colon; and last 2 were leiomyoblastomas localized to the stomach.

The most common signs were abdominal mass with pain and massive gastrointestinal bleeding in malignant and also in benign tumors. The exact verification was made by surgical and histopathological examination. Their size changed between 2 to 30 cm.

The leiomyosarcomas were treated by surgery and chemotherapy while others were treated by local resection.

All the leiomyosarcomas showed local invasion and 1-3 mitoses in each high-power field on microscopic examination and all died in the first two years of diagnosis. All benign cases are alive already and didn't show any malignant clinical course yet.

Key Words: Leiomyoma, Leiomyosarcoma, Leiomyoblastoma

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Smooth muscle tumors of the digestive tract are very rare. It is sometimes difficult to distinguish benign tumors from malignants. Since the original description of Golden Stout (6) different histological criteria have been proposed to describe the malignancy and to estimate the malignant behavior of the smooth muscle tu-

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Yazışma Adresi: Nihat BENGİSU

Erciyes Üniversitesi Tıp Fakültesi
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ÖZET

Yaşları 12-65 arasında değişen 13 hastada sindirim sistemine ait düz kas tümörü teşhis edilerek cerrahi ve histopatolojik yönden değerlendirildi. Vakaların 6'sı leiomyom olup bunlardan 3'ü mideye, Yi ösefagusa, Yi duodenuma ve Yi de transvers kolona lokalize idi. Beşi leiomyosarkom olup bunlardan 3'ü distal ileuma, 2'si de asendant ve sigmoid kolona lokalize idi. Son iki hastada ise tümör leiomyoblastom olup mideye lokalize idi. Benign ve malign tümör gruplarının her ikisinde ortak ve yaygın belirti karında kitle ve ağrı ayrıca masif gastrointestinal kanama idi.

Kesin tanı cerrahi girişim ve histopatolojik inceleme ile kondu. Tümörlerin çapı 2 ile 30 cm arasında değişiyordu. ¹Leiomyosarkomların tedavisi cerrahi ve kemoterapi ile diğerlerinin ki ise lokal rezeksiyon ile yapıldı.

Bütün leiomyosarkomlar lokal invazyon ve mikroskopun her büyük büyütme sahasında 1-3 mitoz gösteriyordu. Bu hastaların hepsi ilk iki yıl içinde kaybedildiler. Bütün benign vakalar hayatı olup malign bir klinik geliş göstermediler.

Anahtar Kelimeler: Leiomyom, Leiomyosarkom, Leiomyoblastom

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mors. In this study 13 patients with gastrointestinal smooth muscle tumors are presented and the literature is reviewed.

MATERIALS AND RESULTS

Fifteen patient of our surgical clinics between 1977-1992 with the diagnosis of leiomyoma, leiomyoblastoma and leiomyosarcoma were evaluated. Since the gastrointestinal microleiomyomas present no clinico-pathological disorder (9,11), two patient with silent microleiomyoma, were excluded.

The youngest patient in this group was aged 12 years at the time of operation and the oldest 65 years.

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Table 1. Clinical presentation and histopathologic diagnosis of the 13 smooth muscle tumors.

Patient No Age and Sex	Clinical presentation	Site	Histopathological diagnosis	Primary therapy
1 55/F 212/F	Abdominal mass Abdominal mass, abdominal pain	Distal ileum Distal ileum	Leiomyosarcoma Leiomyosarcoma	Ileal resection Weal resection
3 65/M	Abdominal mass, abdominal pain	Distal ileum	Leiomyosarcoma	Ileal resection
4 60/F	Abdominal mass, abdominal pain and distention	Sigmoid colon	Leiomyosarcoma	Sigmoid resection
5 20/F	Abdominal mass, weakness	Ascending colon	Leiomyosarcoma	colectomy+subtotal gastrectomy
6 50/F	Massive haematemesis and melena	Stomach	Leiomyoblastoma	Subtotal gastrectomy
7 26/F	Epigastric pain, nausea and melena	Stomach	Leiomyoblastoma	Subtotal gastrectomy
8 50/F 9 64/F	Weakness and melena Abdominal mass	Stomach Third part of the duodenum	Leiomyoma Leiomyoma	Subtotal gastrectomy Local resection
10 64/F	Massive Haematemesis and melena	Stomach	Leiomyoma	Local resection
11 42/M 1218/F	Dyspepsia Abdominal mass, abdominal pain	Stomach Transverse colon	Leiomyoma Leiomyoma	Local resection Local resection
13 36/M	Dyspepsia intractable ulcer pain	Oesophagus	Leiomyoma	Tumor resection and vagotomy+pyloroplasty for associated duodenal ulcer

Of these patients 3 were male and 10 were female. Abdominal pain, abdominal mass and the gastrointestinal bleeding were the most frequent symptoms (Table 1).

The diameters of the leiomyosarcomas, were 2.5-30 cm and average diameter was 9.2 cm while the diameters of the leiomyomas were 2-15 cm. The average diameter was 5.7 cm. They could be classified extraluminal in four cases and intramural in one case and transmural two cases. While six of them couldn't be classified in localization.

Six of our patients had tumors localized to the upper gastrointestinal tract. One of these patient was explorated after demonstrating ulcerated mass in barium x-ray examination. Endoscopy was performed on the remaining five, which were reported as bleeding gastric ulcer in one, ulcerated intragastric mass in three and duodenal ulcer in one case. The last patient had been reported as duodenal ulcer in the endoscopy, while a 2x2x4 cm coincidental distal extraluminal oesophageal leiomyoma was detected in the laparotomy.

Two of the patients had been explorated by the gynecologist as for a misdiagnosed ovarian tumor but at the time they had been transferred to the general surgeon as for understanding that the tumors were

have been gastrointestinal origin, indeed. One of them was bearing a large duodenal leiomyoma and the other one a distal ileal leiomyosarcoma.

One patient who had a sigmoid leiomyosarcoma was diagnosed preoperatively by rectosigmoidoscopy and biopsy. Our remaining patients specific diagnosis could have been verified by laparotomy only each had pelvic masses preoperatively.

On histological examination of the leiomyosarcomas there were 1-3 mitosis on per high-power microscopic field, with a remarkable cellularity and atypia. Two of the tumors had large necrotic areas, while one of them showed hyalinization, calcification and myxoid change (Fig. 1-2).

The last case, a 23 years old female, had a 30x15x15 cm ascending colon leiomyosarcoma, showed numerous mitosis and atypia with necrotic areas, expired on the third month of the resection. She experienced early recurrence of the tumor and intractable ascites formation soon after operation. The malignant cases which were treated by surgery and chemotherapy, all died in the first two postoperative years.

Two of our patients who had tumors, composed of large epitheloid cells, were considered as leiomyoblastoma. The epithelioid cells each had large vesicular

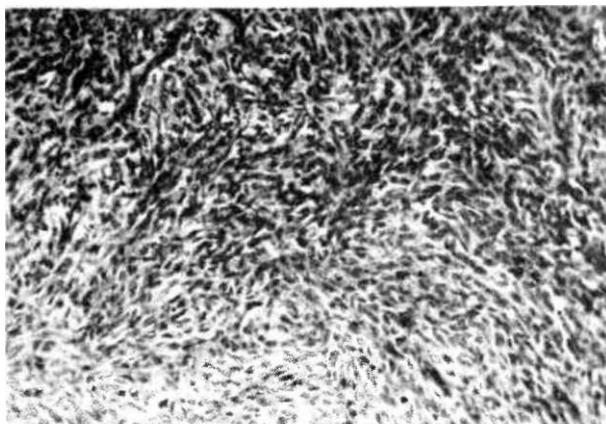


Fig. 1. Leiomyosarcoma of the ileum showing marked cellularity and two mitoses (H-E x 160)

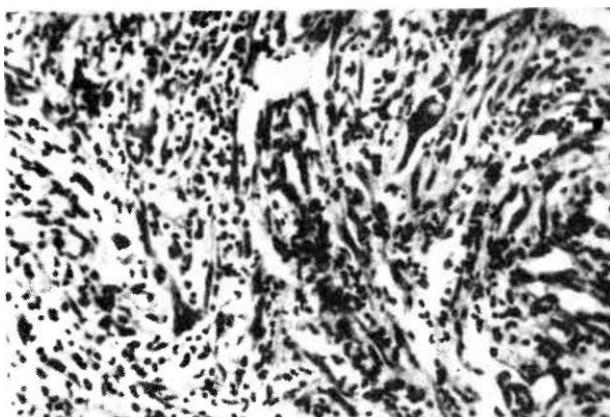


Fig. 2. Leiomyosarcoma of the ileum, bizarre cells (H-Ex450)

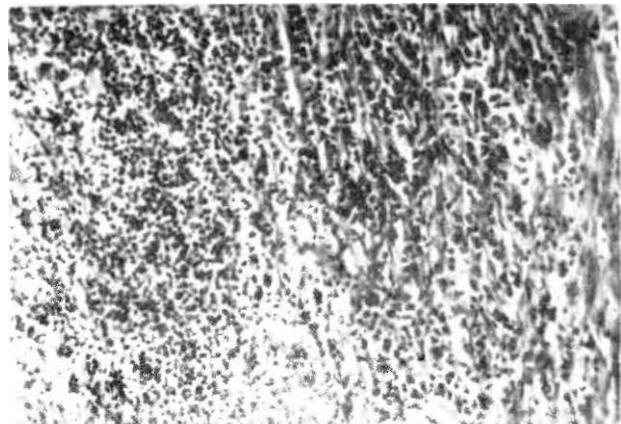


Fig. 3. The gastric leiomyoblastoma, composing epithelioid cells (H-Ex160)

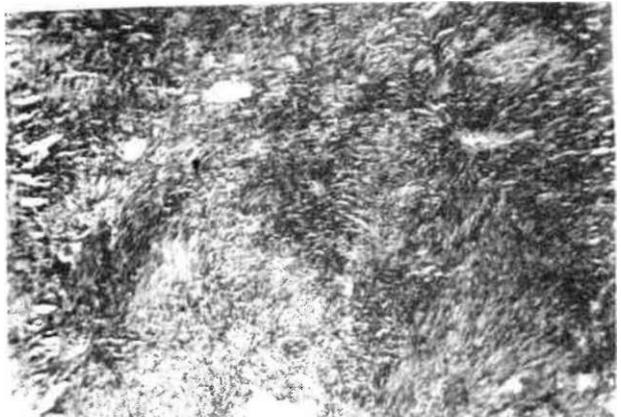


Fig. 4. A case of leiomyoma, showing hyalinization (H-Ex60).

nucleus in a large cytoplasma. There were no mitoses on the microscopic sections (Fig. 3).

Six of our patients had leiomyomas. On the histopathological examinations tumors were composed of sausage shaped smooth muscle cells, forming bunches. Hyalinization was a common feature and there were no mitoses on histological sections (Fig. 4), and no one showed malignant feature in postoperative course. All the leiomyosarcomas were found to have surrounding tissue invasion or metastasis at the time of surgery.

DISCUSSION

The gastrointestinal benign and malignant smooth muscle tumors are rare and there are difficulties in defining the malignancy criteria for the diagnosis of leiomyosarcomas.

In our series the stomach was the most frequently involvement site of these tumors (Table 1).

All of our tumors those localized to the oesophagus, the stomach and the duodenum were benign, while those localized to the small and the large intestine were almost malignant; as it is same for the literature presenting operative series. Benign gastrointestinal smooth muscle tumors could be found more frequently in autopsy series (3,6,9).

However, in the reported series there is a disharmony in the male to female ratios (3,6,9); while the most of our patients were female. Smooth muscle tumors are observed most commonly in the forth and fifth decades (3,4).

Leiomyomas and leiomyoblastomas are firm, endurated and well circumscribed benign tumors. They may be round or lobulated in shape (3,6). Extraluminal expansion is the more common mode of growth which explains the fact that why the obstructive symptoms were uncommon in our series, so as in the literature. An influential number of our patients (32.5%) pre-

sented with gastrointestinal bleeding originated from gastric growths.

The fiberoptic endoscopic studies are helpful in diagnosis of the tumors localized to the oesophagus, stomach and duodenum (3,7). We have discovered an ulcerated mass in three of our patients by this technique, but the simultaneous endoscopic biopsies usually couldn't reveal them. Also, endoscopy may be entirely normal if the tumor is too small and localized extraluminally, as it is in the case of our oesophageal leiomyoma.

Barium meal examination is also helpful in diagnosis of the upper gastrointestinal smooth muscle tumors. The small bowel follow-through examinations after a barium meal or intubation infusion examination, termed enteroclysis, is helpful in the diagnosis of the small bowel tumors. Selective arteriography could be done for diagnosis. Barium enema, fiberoptic colonoscopy and rectosigmoidoscopy will reveal the colonic lesions (2,3).

It is usually difficult to differentiate the malignant gastrointestinal smooth muscle tumors from the benign ones. On the other hand the histological criteria for the diagnosis of the uterine leiomyosarcomas cannot be applied to the smooth muscle tumors of the gastrointestinal tract (9). Although the histologic aspects such as cellularity, cellular atypia and tumor necrosis are beneficial for differentiation of the benign tumors from malignants, they have limited diagnostic aid. All the authors believe that mitosis, is the principal criterion for histologic benign and malignant differentiation. Golden and Stout pointed out that when two or more mitoses are seen in one high-power field, the tumor is definitely malignant (6) as it is the case in our series. According to Ranchod and Kempson, the tumor is malignant when 5 or more are detected in ten high-power field (9). He and Wond have suggested a mild different criterion; if one or 5 mitoses are seen in 25 high-power field, the tumor should be classified as "low grade malignant leiomyosarcoma" and if more than 5 mitoses are seen in 25 high-power field, then the tumor must be regarded as a "high grade malignant leiomyosarcoma" (4). As it is seen, already, there is an argument in defining leiomyosarcoma or in the other words in differentiating the malignant tumors than the benign growths. However we think that it is simple and easy to use Ranchod's criteria. If the mitoses is a few, tumor necrosis might be helpful for predicting the malign behavior (4,9). And also Ranchod and Wang pointed out that when the diameter of the tumor is greater than 8 cm, malignancy should be suspected (4).

Most of the authors believe that even the tumors which have fewer mitoses beyond these criterion may

show malignant behavior (4,6,8-10). Golden and Stout have pointed out: "One can never be entirely certain that a leiomyoma is necessarily benign, except the small intramural tumors which are chance findings at autopsy or operation." Because occasionally a well differentiated histopathologically benign tumor may present infiltration and may metastasize.

Leiomyosarcomas exist with infiltrating surroundings (3). They are usually radioresistant and chemotherapeutic agent are seldom useful. In common they have low-grade malignant potential (3,4,6,9). So that primary tumor should be resected even though it has metastasized (3). In our series, all of the leiomyosarcomas have been resected. None of our patients had distant metastases at the time of operation. In general local recurrences and even repeated recurrences should be removed whenever possible (4). Leiomyosarcomas have better survival rates than the other gastrointestinal malignant tumors that the 5 year survival rates have been reported 20-30% in different series (1,4,5). All of our cases with the gastrointestinal smooth muscle leiomyosarcomas were dead by the time of report was ready to publish.

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