PRIMARY TUMORS OF THE SMALL INTESTINE
(ANALYSIS OF 102 PATIENTS)

Zhaag Weiti. Wang Jifu Wang Chengen

Department of Surgery, the First Hospital,
Sun Yatsen University of Medical Sciences, Guangzhou

Primary tumors of the small intestine are uncommon and a correct preoperative diagnosis is extremely difficult. From 1964 to 1983, 102 cases of this disease were detected surgically at our hospital. In order to investigate the problems involved in diagnosis and treatment, a comprehensive analysis of small intestinal tumors is made in this paper.

CLINICAL DATA

Of the 102 cases, 67 were male, 35 female. The average age of the patients was 38.7 years, ranging from 4 months to 75 years. Ten patients were under 14 years of age; 7 of these tumors were malignant lymphoma. Malignant lymphoma was seen in 84.6% of patients years of age. The symptomatic duration of the disease ranged from several hours to 8 years, 92.2% being from 1 month to two years. Patients with a duration of less than 10 hours were all complicated by tumor perforation, massive hemorrhage or intestinal obstruction.

Pathology

Tumors in 70 patients were malignant, accounting for 3.1% of the malignant gastrointestinal (GI) tumors diagnosed in our hospital during the same period. Of the 70 cases, 28 cases had malignant lymphoma, 27 carcinoma, 14 leiomyosarcoma, and 1 carcinoid. Thirty-two cases were benign, making up 11.3% of the GI benign tumors found in our hospital during the same period, with 10 cases of leiomyoma, 8 adenoma, 3 cases each for hemangioma, lipoma and fibroma, and 2 cases each for lymphangioma and neurofibroma. Most of the tumors were located at the proximal and distal ends of the small intestine.

Tumor sites included: the duodenum (23), the proximal jejunum (33), the distal jejunum (5), the proximal ileum (4) and the distal ileum (28). Nine cases had multiple locations.

In 27 of the benign cases, the diameter of the tumor was under 10 cm and the smallest adenoma was as small as a sesame. In the malignant groups, most leiomyosarcomas and malignant lymphomas were considerably large; 64.3% of them were over 15 cm in diameter, the largest of which was a lymphosarcoma occupying 3/5 of the abdominal cavity. There were 22 cases (21.6%) of multiple tumors, 16 of which were malignant. The jejunum and ileum had been extensively invaded by lymphosarcoma in one patient.

Clinical Manifestations

Seventy-four cases had abdominal pain; 45 had an abdominal mass; 25 had hemorrhage of the digestive tract, of which 22 were hematochezia, 3 had hematemesis with a complication of shock because of hemorrhage in 4 cases; 25 had intestinal obstruction; 8 had tumor perforation (6 of which were malignant tumors), and 7 had
obstructive jaundice as a result of the tumors around the duodenal papilla. The malignant cases also showed emaciation, fever and loss of appetite.

X-ray Barium Meal Study

An upper GI series was performed on 41 patients. Of these, 12 (29.3%) were diagnosed as having small intestinal tumors and 4 small intestinal obstruction, 9 were mistaken for other diseases and 16 were missed.

Diagnosis

Eight tumors of the small intestine were accidentally found during surgery for other diseases. A preoperative diagnosis was made in 14 cases (13.7%). There were 36 patients classified as cause-unknown abdominal mass, 19 as intestinal obstruction, and 8 as peritonitis. A misdiagnosis was made in 17 cases. During surgery, 10 cases with malignant tumors were mistaken for benign diseases, such as Crohn’s disease, cysts, intestinal typhoid, polyps, intestinal adhesions or benign tumors, while 2 patients with benign tumors were mistaken for malignant.

Therapy

Radical excision was performed on 28 patients with malignant tumors (40%), of which 6 underwent duodeno-pancreatectomy, 10 partial small intestinal resection, 8 right colonectomy and 2 subtotal gastrectomy. Palliative excision was performed on 21 patients with malignant tumors; Thirteen had an intestinal bypass or simple suture of perforation and 8 underwent simple exploratory laparotomy. The resectability rate was 70%. For the benign cases, a partial enterectomy of the small intestine was done in 17 patients, local resection in 10 patients, and right colonectomy in 5 patients. Some patients with malignant tumors also received postoperative chemotherapy, with 5-Fu for adenocarcinoma, and endoxan, vincristine, procarbazine and prednisone for malignant lymphoma.

Prognosis

No patient with a benign tumor died after surgery. Nine patients with malignant tumors died post-surgery from peritonitis, (3) multiple organ failure (3), shock (1), fistula of the small intestine (1) and massive hemorrhage (1). Postoperative follow-up was given for 3 to 22.5 years in 38 patients with malignant tumors (62.5%). The 5-year survival rate was 36.9% (with malignant lymphoma 62.5% and leiomyosarcoma and cancer 18.2%) and the 5-year survival rate in the cases of the radical or palliative excision was 43.8% (7/16) and 38.9% (7/18), respectively. Six patients lived longer than 10 years (16.2%); of these had malignant lymphoma (3 radical operations and 2 palliative operations), and 1 had leiomyosarcoma (palliative surgery). Four patients lived only for 2 to 6 months after surgery which included intestinal bypass, exploratory laparotomy and simple suture of perforation.

DISCUSSION

Primary tumors of the small intestine account for 1-5% of gastrointestinal tumors.1 We found the incidence to be 4%, 3.1% of which were malignant. The low incidence of the small intestinal tumors may be associated with the following factors: the contents of the small intestine consist of thin fluids, which are less of a mechanical stimulus to the intestinal wall; the quick passage of the contents results in a shorter time of carcinogen contact with the intestinal mucosa and a smaller number of bacteria that can produce carcinogens; alkaline intestinal fluid and high concentrations of benzopyrene hydroxylase can counteract the effect of the potential carcinogens; and finally, the rich lymphatic tissues produce immunoglobin A to trigger local immunoreactions.2

The diagnosis of small intestine tumors is difficult. The rate of misdiagnosis has been reported to be as high as 65-100%. In our study, the accuracy of preoperative diagnosis was only 13.7%, which might be due to the lack of characteristic clinical signs and the low incidence of disease. It is likely to be diagnosed as another com-