CLINICO-PATHOLOGICAL ASPECTS OF MALIGNANT LYMPHOMA OF THE GASTROINTESTINAL TRACT IN MALAYSIA

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SYNOPSIS

The clinical features and pathology of 17 patients with gastrointestinal lymphoma are reviewed. The small intestine was the site most commonly involved. Emergency presentation was usual: 11 of the 17 patients presented as acute abdomen or gastrointestinal haemorrhage. The frequency of gastrointestinal lymphoma to carcinoma in the Chinese and Indians was comparable to that in the West but a higher frequency was found in the Malays and Orang Asli.

INTRODUCTION

Malignant lymphoma is a relatively uncommon malignant tumour of the gastrointestinal tract. It comprises 1 to 4% of all gastrointestinal malignant neoplasms according to the reviews of McSwain and Beal (1944) and Loehr and his co-workers (1968). There have been suggestions however (Edington and Easmon 1967, Dutz *et al,* 1971) that in African and Middle East countries, the incidence of intestinal lymphoma is higher and in a younger age group.

A review of our experience with this disease at the University Hospital was undertaken to determine the pattern and behaviour of this disease in the multiracial community of Malaysia and is presented in this report.

MATERIAL AND METHOD

During the period under review (July 1967 to June 1973) 17 patients with malignant lymphoma of the gastrointestinal tract underwent surgical treatment at the University Hospital. During this period of study, there were a total of 336 histologically proven cases of carcinoma of the stomach, colorectum and small intestine. Malignant lymphoma therefore comprised 5% of all malignant gastrointestinal tumours.

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RESULTS

Pathology

In 15 patients, the tumour was primary, i.e. confined to the gastrointestinal tract and regional lymph nodes; in the remaining two, there was involvement also of the liver (1) and cervical lymph nodes (1). The small bowel was the most common segment involved:- 11 patients in seven of whom the lymphoma remained confined to the small bowel while in four there was involvement of other sites in the gastrointestinal tract (Tables I and II).

Polypoid and diffuse forms of the tumour occurred with equal frequency (Table III). Annular lesions ("napkin ring") resembling tuberculous strictures were found in two. Histological examination showed that lymphosarcoma and reticulum cell sarcoma occurred with equal frequency (Table IV). None of the lymphoma were of the Hodgkins' or Burkitt's types.

Table V shows that 9 of the 15 patients with primary gastrointestinal lymphoma had advanced local disease with massive bowel and lymph nodes (Dutz stage III) at the time of diagnosis.

Clinical Features

There were ten males and seven females. All were adults with ages ranging from 21 to 76, average 49 years.

The mean duration of symptoms was three months and ranged from a few hours to eight months. Eleven of the seventeen patients presented as surgical emergencies either with acute abdomen or gastrointestinal haemorrhage.

All patients with one exception complained of abdominal pain which was severe in eight patients. Five patients presented with gastrointestinal haemorrhage; malaena occurred in three patients (stomach 1, small intestine 2), while fresh per-rectal

bleeding occurred in two patients with colorectal lesions.

Five patients had palpable abdominal masses (ileal 2, colon 3). Other clinical features were weight loss 9, cachexia 2, vomiting 6, and jaundice 2. The average haemoglobin was 10.4 gm, two patients had gross anaemia 2.9 gm (duodenal lesion) and 3.6 gm (rectal lesion).

Barium studies performed on seven patients revealed irregular filling defects in five patients (gastric 3, small intestine 1, and colorectal 1), a polypoid mass in a patient with colonic lymphoma and intussusception in a patient with ileo-caecal lesion.

TABLE I

LOCATION OF LYMPHOMA IN THE GI TRACT IN 17 PATIENTS

Site	No. of Cases
Primary Lymphoma	
Stomach	3
Small bowel	7
Large bowel	2
Multiple sites in GIT	
Stomach, small and large intestine 1	
Small and large intestine 2	3
Total	15
Generalised Lymphoma	
Small intestine and liver	1
Large intestine and cervical nodes	1
Total	2

TABLE II

DISTRIBUTION OF ALL LYMPHOMA LESIONS IN 17 PATIENTS

Site	No. of Cases
Stomach	4
Small Intestine	11
Large Intestine	6
Liver	1
Abdominal lymph nodes	16
Cervical nodes	1

Treatment

14 of the 17 patients underwent laparotomy. In eight patients presenting as acute abdomen, emergency laparotomy revealed tumour perforation in two (stomach 1, small intestine 1), intestinal obstruction in three (small intestine 2, colon 1) and intussusception in a patient with ileo-caecal lymphoma; a preoperative diagnosis of appendicitis had been made on two patients with ileal and ileo-caecal lymphoma.

Resection of tumour with regional lymph nodes was performed on 13 patients and bypass entero-enterostomy in one patient. Nine patients with residual disease were treated by radiotherapy and/or chemotherapy.

There were three hospital deaths. Two moribund patients died soon after admission before definitive treatment while the third died after resection.

Of the nine patients followed up after discharge from hospital, six have survived more than 6 months, the longest survivor to date being 3 years.

TABLE III

GROSS MORPHOLOGY OF GI TRACT LYMPHOMA

Site	Polypoid	Diffuse	Annular
Stomach	1	3	—
Small bowel	4	4	2
Large intestine	2	1	—
Total	7	8	2

Frequency of Lymphoma in Relation to Carcinoma by Racial Groups

During the 5½ year period under review there was a total of 336 histologically proven cases of carcinoma of the stomach, colorectum and small intestine. The 15 cases of primary gastrointestinal lymphoma thus formed 4.5% of these tumours.

In Table VI, the frequency of lymphoma in the various groups has been analysed in relation to both hospital utilisation and the frequency of gastrointestinal carcinoma. The number of Malays and Orang Asli with primary lymphoma, 7 cases, were the same as in the Chinese though hospital utilisation was predominantly Chinese (55% Chinese, 15% Malays and Orang Asli). During the same period there were 265 cases of gastrointestinal cancer in the Chinese and only 18 cases in the Malays and Orang Asli. Thus the frequency of gastrointestinal lymphoma relative to carcinoma was far higher in the Malays and Orang Asli 39%, than the Chinese, 2.6% and in the Indians 2%.

DISCUSSION

Although it is well known that gastrointestinal lymphoma may present as an abdominal catastrophe, such presentation appears to be particularly common in our patients. Emergency laparotomy for acute abdomen was performed on 8 patients and 5 other patients had gastrointestinal haemorrhage. Our patients often do not seek treat-

TABLE IV

HISTOPATHOLOGY OF 17 CASES OF GI LYMPHOMA

Cell Type	Gastric	Small Bowel	Large Bowel	Multiple Sites in GIT	Generalised Lymphoma	Total
Lymphosarcoma	2	5	—	—	1	8
Reticulum Cell Sarcoma	1	2	2	3	1	9

TABLE V

STAGING* IN 17 CASES OF GASTROINTESTINAL LYMPHOMA

		No. of Cases
Stage I	Bowel involvement only	1
II	Bowel and few local lymph nodes	5
III	Massive bowel and mesenteric lymph node	9
IV	Bowel and systemic spread	2

*Staging based on classification by Dutz *et al* (1971).

TABLE VI

FREQUENCY OF PRIMARY LYMPHOMA IN RELATION TO CARCINOMA BY RACIAL GROUPS

Racial Groups	No. of GI Lymphoma	No. of GI Carcinoma	Percentage of Lymphoma to Carcinoma	% Hospital Utilisation 1969/70
Chinese	7	265	2.6%	55%
Indians, Pakistanis and Ceylonese	1	51	2%	26%
Malays 5)		16)		15%
)	7	)18	39%	
Orang Asli 2)		2)		4%

ment until compelled to by severe abdominal or massive gastrointestinal haemorrhage.

The frequency of gastrointestinal lymphoma relative to carcinoma in our patients, 4.5% appears to be of the same order as in the Caucasians, 1-4% (McSwain and Beal 1944, Loehr *et al,* 1968). Our figures reflect mainly on the Chinese and Indians who form the majority of patients and have frequencies of 2.6% and 2% respectively. As the incidence of gastrointestinal carcinoma in these races does not appear to differ substantially from the West (Shanmugaratnam 1973). it might be concluded that their incidences of GI lymphoma are also similar.

In the Malays and Orang Asli, however, a higher frequency of gastrointestinal lymphoma has been found relative to both carcinoma and hospital utilisation. While the Malays and Orang Asli are less susceptible to carcinoma as shown by this and previous studies (Shanmugaratnam, 1973), it would appear that they are at greater risk to gastrointestinal lymphoma.

Unlike in Western series where the stomach is the most frequent site for gastrointestinal lymphoma (Nagvi *et al,* 1969, Loehr *et al,* 1969), the small intestine is most commonly affected in our patients. A high incidence of small intestinal lymphoma in the Middle East is believed to be aetiologically related to severe gastrointestinal stress in childhood leading to sprue like atrophy of the bowel and immunodeficiency (Dutz *et al,* 1971). While tropical sprue is not uncommon in South East Asia (Elipstein 1968, Fung and Khoo 1969) gastroenteritis and intestinal parasitism are widespread and these conditions might help to explain a predilection for lymphoma of the small intestine in our population.

REFERENCES

1. Dutz W., Asvadi S., Sadvi S. and Kohout E.: Intestinal lymphoma and sprue: A systematic approach. Gut, 12, 804-810, 1971.
2. Edington G. M. and Easmon C. O.: Incidence of Cancer of the Alimentary Tract in Accra, Ghana and Ibadan, Western Nigeria. Tumours of the Alimentary Tract in Africans. National Cancer Institute. Mongr., No. 25, 17, 1967.
3. Fung W. P. and Khoo O. T.: Malabsorption Syndrome in Singapore. Sing. Med. J., 10, 198-210, 1969.
4. Klipstein F. A.: Tropical Sprue. Gastroenterology, 54, 275-293, 1968.
5. Loehr W. J., Mujahed Z., Zahn F. D., Gray G. F. and Thorbjarnarson B.: Primary Lymphoma of the Gastrointestinal Tract: A review of 100 cases. Ann. Surg., 170, 232-238, 1969.
6. McSwain B. and Beal J. M.: Lymphosarcoma of the Gastrointestinal Tract: Report of 20 cases. Ann. Surg., 119, 108-123, 1944.
7. Naqvi M. S., Burrows L. and Kark A. E.: Lymphoma of the Gastrointestinal Tract: Prognostic Guides based on 162 cases. Ann. Surg., 170, 221-231, 1969.
8. Shanmugaratnam K.: Cancer in Singapore—Ethnic and Dialet Group variations in Cancer Incidence. Sing. Med. J., 14, 69-81, 1973.