

Primary Gastrointestinal Lymphomas in Emergency Surgery

Abstract

Background

The aim of the present study was to describe the clinical presentation, diagnostic work-up, emergency surgical treatment of 15 patients with primer gastrointestinal tract lymphomas.

Methods:

Patients who underwent surgical intervention due to gastrointestinal system bleeding or radiological evidence of, perforation or intestinal obstruction and were subsequently diagnosed with intestinal lymphoma at Kocatepet University department of general surgery between August 2007 and September 2016 were examined retrospectively. Medical records, clinical history, symptoms, pathological reports, and treatment modalities were analyzed.

Results:

15 primary gastrointestinal system lymphomas patients (Male:8, Female:7) and mean age of 69.73 (40-90) years. Symptoms reported by the patients were abdominal pain, nausea, vomiting, obstipation. All 15 patients underwent surgical treatment; All patients received postoperative chemotherapy. Most common pathological subtype was diffuse large B-cell lymphoma (86.6%).

Conclusion:

Initial presentation of primary gastrointestinal tract Non-Hodgkin lymphoma may be obstruction, bleeding, perforation. Clinicians and surgeons should keep this in mind while assessing patient with mechanic bowel obstruction.

Key Words: *Lymphoma, B-cell, diffuse, obstruction, bleeding, emergency*

27 Introduction

28 Non-Hodgkin lymphoma (NHL) is a well-known hematologic malignancy. The
29 gastrointestinal (GI) tract is the most commonly involved extra nodal site. NHL is a group of
30 diseases with different morphology, immunophenotype, genetics, and clinical features.
31 The incidence of extranodal lymphomas in NHL has a considerable rate as high as
32 30–50%. Primary gastrointestinal Non-Hodgkin Lymphoma (PGI NHL) is the most
33 common extranodal NHL, accounting for 30–45% in all extranodal NHLs¹⁻².
34 Lymphomas can involve any part of the GI tract from oral cavity to rectum. Surgical
35 resection can play an important role in the diagnosis and treatment of NHL involving
36 the GI tract. Clinical features, pathological features, and treatment of gastrointestinal
37 NHL are different from other extranodal lymphomas³. Obstruction, haemorrhage and
38 perforation are rare and complications of the lymphoma that require life-threatening
39 emergency operation. Diffuse large B-cell lymphoma is most common pathological
40 subtype of PGI NHL. Diagnosis of PGI NHL may be missed due to its unspecific
41 clinical manifestation. Differential diagnosis of PGI NHL from other types of GI
42 tumors may not be possible in urgent surgeries⁴.

43 Materials and Methods

44 Patients who underwent surgical intervention due to gastrointestinal system bleeding or
45 radiological evidence of, perforation or intestinal obstruction and were subsequently
46 diagnosed with intestinal lymphoma at Kocatepet University department of general surgery
47 between August 2007 and September 2016 were examined retrospectively. Medical records,
48 clinical history, symptoms, demographic data, pathological reports, and treatment
49 modalities were analyzed. Radical surgery defined as completely primary mass resection and
50 regional lymph nodes dissection. Resection materials in the archive were fixed in 10% formol.
51 Hematoxylin Eosin (HE) stained preparations obtained by paraffin embedding and
52 immunohistochemical examination preparations were evaluated. Immunohistochemical staining was
53 performed on a Leica-Bond device. immunohistochemical studies; LCA, CD3, CD4, CD8, CD20, CD79a,
54 CD10, Bcl-2, Bcl-6, CD5, Cyclin D1, CD138, and Ki-67. According to immunoprofile and
55 Histomorphology were performed lymphoma subtype.

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57

58 Results

59 At time of initial diagnosis of lymphoma, the patients' ages were between 40 and 90 years
60 of age, with median age for the group of 69.73 years. 15 patients, 7 were female and 8 were
61 male. The patients presented with complaints of abdominal pain, distention, nausea and/or
62 vomiting, loss of appetite, and weight. Contrast-enhanced computed tomography (CT) of
63 the abdomen was performed on all patients for intestinal obstruction due to intraabdominal
64 and/or intestinal mass. Tumor localization of patients' stomach: 8 (Kardia :3, Antrum:3,
65 Corpus:1), jejunum:1, ileum:4, right colon: 2, multiple organ involvement:1. There was no
66 history of lymphoma in any of the patients (Table.1). Radical surgical treatment performed
67 all patients. The lymphoma observed in the small bowel resection material infiltrated the
68 entire wall of the intestine and obstructed it and ulceration (Figure 1). Microscopic findings
69 are shown in figure 2a-2b-2c. Distribution of lymphomas were listed according to HE analysis
70 and immunophenotyping. (Table 2)

71 Discussion

72 PGI NHL is the most common extranodal NHL, accounting for 30–45% in all extranodal
73 NHLs¹⁻². PGI NHL represents nearly 5-10% of all gastrointestinal malignancies^{6,7}.
74 Mean age at onset of 45-70 years for PGI NHL¹. In the present study, the mean age
75 of the patients with PGI NHL was 69.7 years. With regard to gender distribution, our
76 results demonstrated that the incidence of PGI NHL with a male:female ratio of
77 1.14:1, which was in different previous studies^{4,8,9}. The stomach is the predominant
78 site of PGI NHL, followed by the small intestine and colon⁵. In our study results are
79 similar; stomach lymphoma 46.6%, small intestinal bowel 33.3%, colon 13.3%.
80 Furthermore, the main clinical presentations of PGI NHL include nonspecific
81 gastrointestinal symptoms; but emergency patients, abdominal pain, distention,
82 nausea, vomiting and constipation are more common. Liang et al reported that the 3
83 most common symptoms at onset in 425 PGIL cases were abdominal pain,
84 gastrointestinal bleeding and nausea or vomiting⁷. Furthermore, Radic-Kristoet al
85 reported that the majority of cases of PGI NHL presented with epigastric pain (85%)
86 and dyspepsia (30%)⁹. Approximately 60–80% of the primary intestinal NHLs were
87 B-cell derived^{2,4,6}. In this study, B-cell NHL accounted for 93.3%, of which 86.6%
88 was diffuse large B-cell lymphoma, 6.6% was mantle cell lymphoma and 6.6% T-cell
89 NHL. Preoperative endoscopy can help in the diagnosis of stomach intestine, rectum

90 and ileocecal NHLs. When the NHL is in the small intestine, and it often needs to be
91 confirmed by postoperative pathological examination. Patients with primary intestinal
92 NHL received surgery with postoperative chemotherapy and/or radiotherapy^{10,11}.

93 **Conclusion**

94 Initial presentation of primary gastrointestinal tract Non-Hodgkin lymphoma may be
95 obstruction, bleeding, perforation. Clinicians and surgeons should keep this in mind while
96 assessing patient with mechanic bowel obstruction.

97 **References**

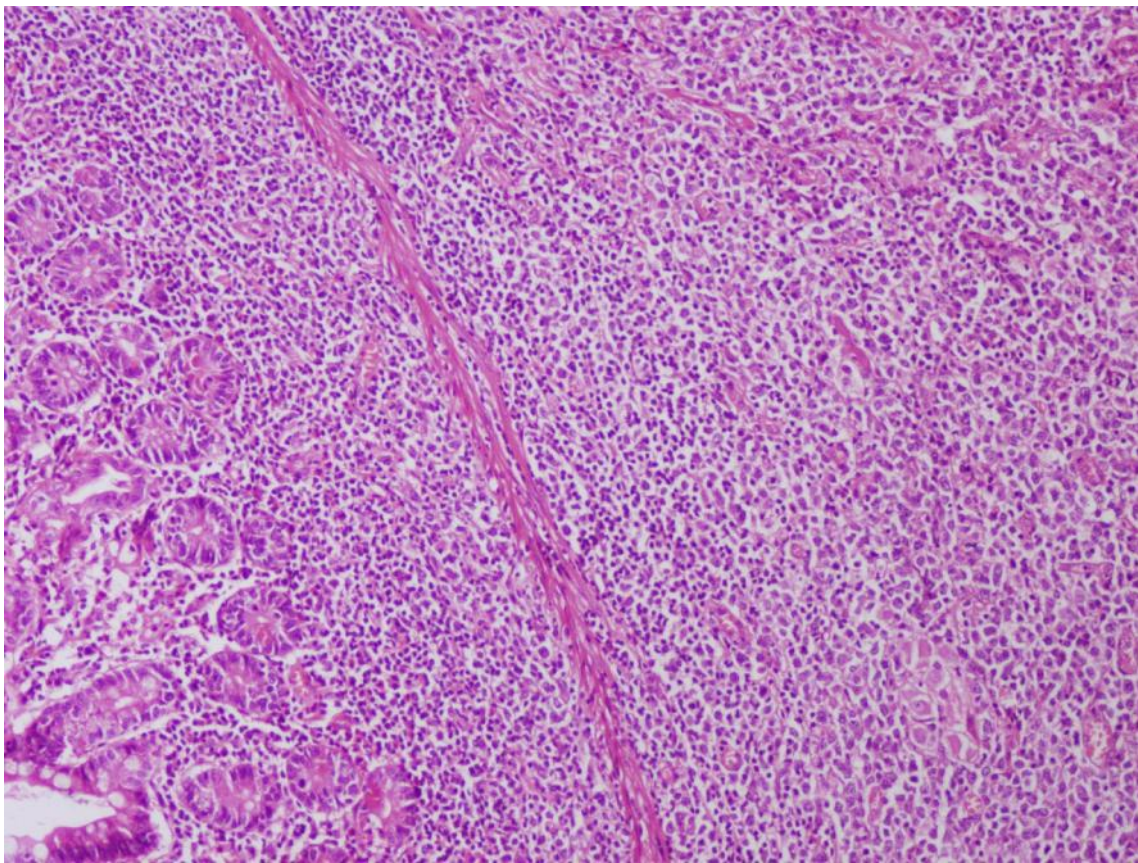
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Figure 1. Lymphoma infiltrating the entire wall of the intestine and obstructive mass.



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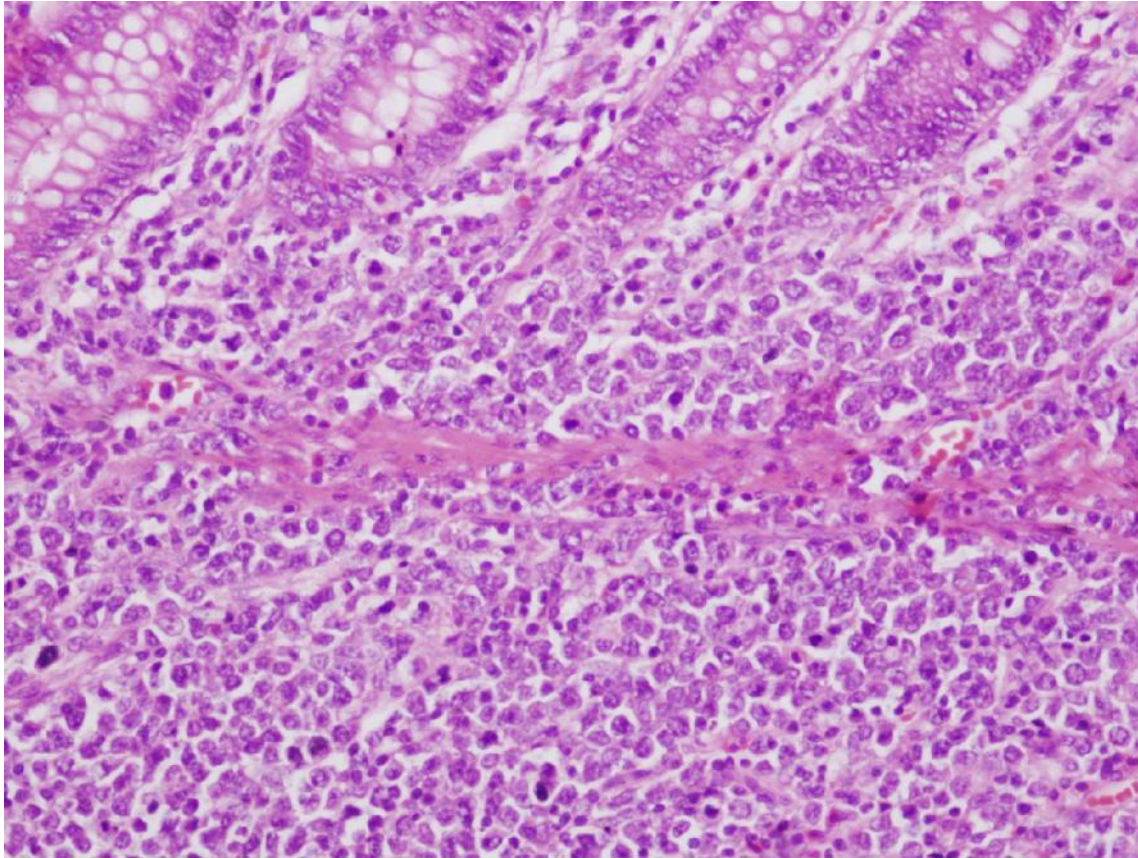


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141 Figure 2a. Atypical lymphocytes infiltrating the colon mucosa and submucosa. (x100 HE)

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145 Figure 2b. Large, nucleus specific, mitotic rich nucleus, narrow eosinophilic cytoplasmic
 146 infiltrating lymphocytes located in the mucosa and submucosa. (x200 HE)

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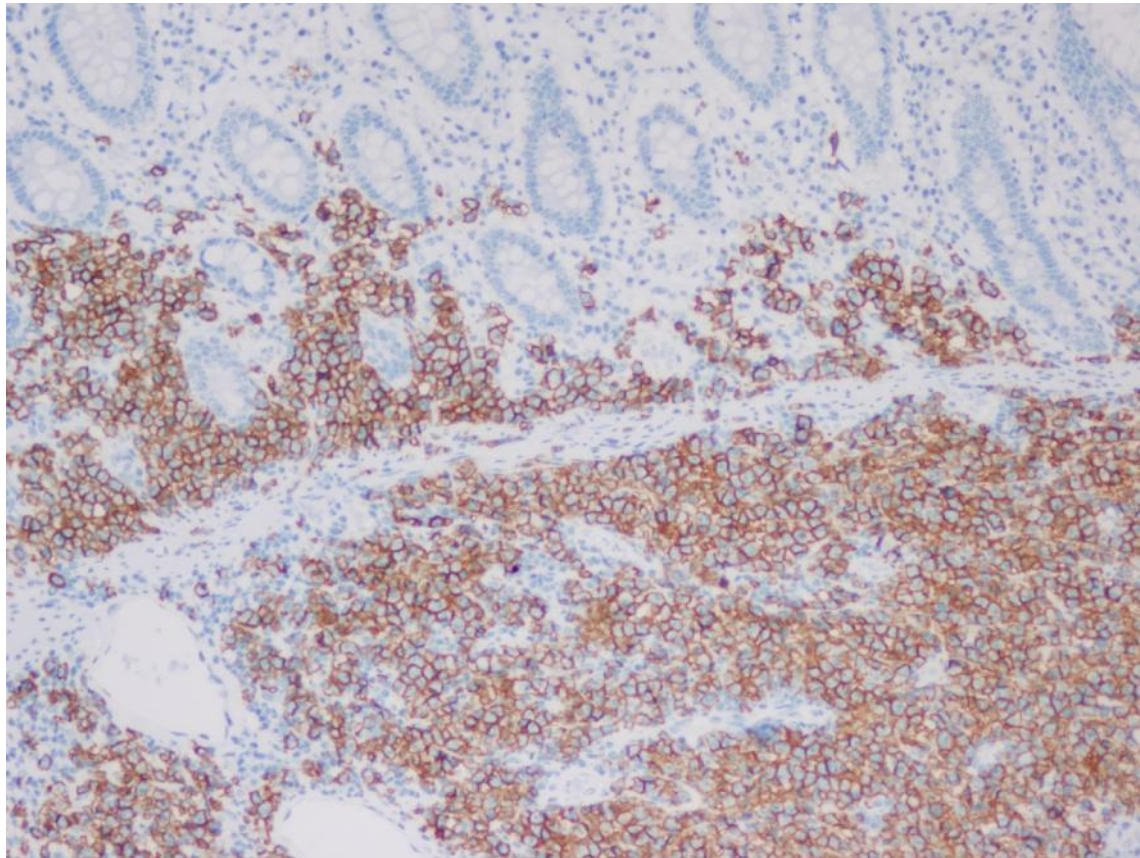


Figure 2c. Strong cytoplasmic reaction with atypical lymphocytic infiltration obtained by CD20 immunohistochemical study. (x100)

Clinical characteristics of patients

Variables Total (n=15)

Age (years; median)	69.73 (40-90)
Gender	
Male	8
Female	7
Symptoms	
Nausea and/or vomiting	12
Loss of appetite	13
Abdominal pain	11
Weight loss	14
Bleeding	2
Computed tomography	
Ileus	15
Intestinal mass	12
Intraabdominal multiple lymph nodes	15
Perforation	2
Invagination	1

Site of disease	
Stomach	
Cardiya	3
Corpus	1
Antrum	3
Jejunum	1
Ileum	4
Colon	2
Multi organ	1

Table.1 (1)

Table 2. Operation type and pathologic results

Tumor Size (cm; median)	8.6
Histological Subtype	
Diffuse large B cell lymphoma	13
Mucosa-associated lymphoid tissue lymphoma	1
T cell lyphoma	1
Clinical Stage	
I	2
II	5
III	6
IV	2
Chemotherapy after surgery	15
Death	1

Table.2 (1)