

**PERFORATED COLONIC LYMPHOMA PRESENTING AS GENERALIZED PERITONITIS IN AN 8-YEAR-OLD GIRL: A CASE REPORT.**

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**Abstract**

Perforation of gastrointestinal tract (GIT) lymphoma is an uncommon cause of peritonitis. Diagnosis of this condition is mostly at surgery. Adequate resection, histological confirmation, and appropriate chemotherapeutic regimen are essential in ensuring survival of these patients. We report case of an 8-year-old girl who presented to our hospital with clinical features of generalized peritonitis who found to have a perforated tumour of the transverse colon, the histology of which revealed gastrointestinal tract –associated B Cell lymphoma.

**Keywords:** Gastrointestinal tract lymphoma, perforation, peritonitis

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**Introduction:**

Primary Gastrointestinal lymphoma is a rare disease, accounting for only 1-4% of gastrointestinal tract (GIT) malignant tumours, although the incidence is rising.<sup>1</sup> Gastrointestinal tract is the commonest site of extra-nodal involvement in lymphomas, constituting 5%-20% of all of all GI lymphomas.<sup>2,3</sup> Perforation peritonitis from a GIT –associated lymphoma is a rare occurrence and the identification of this condition is mostly at laparotomy. Diffuse large B-cell lymphoma is the most common subtype associated with perforations.<sup>4</sup>

**Case report:**

We present a case report of an 8-year old girl who presented to the emergency pediatric unit of our hospital with complaints of fever of 7 days duration, multiple episodes of bilious vomiting and central abdominal pain which became generalized two days before presentation. There was no history of similar episodes of abdominal pain in the past however, the patient was noticed by her parent to have significant weight loss in the preceding few months. No other symptoms were present. Her past medical history was unremarkable.

Examination revealed mild palor and dehydration. No significant peripheral lymphadenopathy. The patient had a distended abdomen with generalized tenderness and guarding. Bowel sounds were absent on auscultation. A diagnosis of generalized peritonitis from viscus perforation was made, likely typhoid intestinal perforation given the symptomatology and the endemic nature of typhoid fever and its complications in our environment. The patient was resuscitated with intravenous fluids, parenteral antibiotics and analgesics. Nasogastric tube and urethral catheter were inserted. The serum electrolytes and creatinine were within normal limits but urea was 9.2 mmol/L. Full blood count showed Hemoglobin of 10.2 g/dL, total white cell

count of  $11.8 \times 10^9$  /L (Neutrophils: 82%, Lymphocytes: 16%, Granulocytes: 2%) and platelet count of  $154 \times 10^9$ /L. Total protein was 58.6g/L with albumin of 34.4 g/L and globulin of 24.2 g/L. Retroviral and hepatitis B and C screening tests were negative. Erect chest X-ray showed a rim of air under right hemi-diaphragm. Following adequate resuscitation, consent for laparotomy was obtained from the care givers. The abdomen was entered through a long midline incision. The intra-operative findings were feculent fluid in the peritoneal cavity (about 1,500 ml), fibrinoid adhesions and a friable grayish mass in the mid-transverse colon about 4 cm x 3 cm in size with a perforation about 1cm wide on the antimesenteric border at the edge of the mass. There were enlarged lymph nodes in the transverse mesocolon. No perforations were found on the small bowel, vermiform appendix, stomach or the gallbladder. No nodules were noted on the surface of the liver, no carcinomatosis peritonii. The spleen appeared grossly normal. A transverse colectomy (oncologic resection) was performed with colocolic end-to-end anastomosis. She recovered adequately and was discharged home on the 7th postoperative day.

Histopathology of the resected transverse colon reported a neoplasm composed of lymphoid cells arranged in sheets. The cells were larger than the size of small normal mature lymphocytes, with vesicular pleomorphic nucleus. Mitosis was reported to be 1-2 per high power field with no areas of necrosis seen. The tumour was positive for CD-20 and negative for Cytokeratin and CD3 on immuno histochemistry. A histological diagnosis of Diffuse Large B cell Lymphoma was therefore made.

The patient was referred to the radio-oncology unit of the Federal Teaching Hospital Gombe, Nigeria, where she received adjuvant chemotherapy consisting of Cyclophosphamide, doxorubicin

(Hydroxydaunorubicin), vincristine (Oncovin) and Prednisone (CHOP regimen) as a total of six cycles. After the last cycle of chemotherapy, she was seen in our hospital monthly for 3 months and thereafter 3 monthly for 1 year. During this period of follow up there were no signs of recurrence in the abdomen and no evidence of chest or superficial nodal disease. Contrast-enhanced thoraco-abdominal CT scan at 6 month post-operatively was normal. She is still being followed up.

### Discussion

Generalized peritonitis is a common surgical condition in our environment which requires adequate resuscitation and prompt surgical intervention. Common etiologies in children in our environment include typhoid intestinal perforation, ruptured appendix/appendiceal abscess, perforation due to intussusception, volvulus or adhesive intestinal obstruction. Others are perforated necrotizing enterocolitis and abdominal trauma.<sup>5, 6</sup>

Peritonitis from a perforated GI lymphoma is a life-threatening complication. Mechanisms of perforation may include localized tumor replacement of the bowel wall, which lacks of normal gut tissue integrity resulting in tumor necrosis and full thickness perforation; it may also occur after prolonged obstruction, which leads to distention, ischemia and necrosis. Occasionally, perforation may result from treatment (e.g., steroids) or from complications of chemotherapy (e.g., severe dehydration, decreased bowel perfusion).<sup>7, 8</sup> The pre-operative diagnosis of a perforated GI tumour is difficult due to its rarity and the non-specific nature of its presentation. Often, the diagnosis is established at surgery and confirmed after histology. In a few patients however, pre-operative diagnosis may be possible when non-specific symptoms of weight loss, abdominal discomfort, nausea, vomiting and loss of appetite lead to a diagnosis of intraabdominal tumour through abdominal

ultrasound scan, CT or MRI followed by laparoscopic or open biopsy.<sup>9</sup>

The clinical presentation of our patient was that of a generalized peritonitis. The possibility of a tumour was not brought forward due to absence of preceding abdominal pain or bowel symptoms. Other aetiologies were therefore considered (typhoid intestinal perforation, ruptured appendix and perforated volvulus). This is often the typical clinical scenario.<sup>7</sup>

Establishment of the diagnosis primary gastrointestinal lymphoma (extradonal) in our patient followed the Dawson's criteria<sup>10</sup> (1961) (see Table 1).

**Table 1: Definition of primary gastrointestinal lymphoma as described by Dawson et al.**

Absence of palpable lymphadenopathy on clinical examination
Absence of mediastinal lymphadenopathy
Normal range of total and differential white cell count
Involvement of only regional lymph nodes, discovered on surgery
Liver and spleen remain without disease

This emergency presentation of a perforated GI lymphoma in our index patient is similar to other reports. Vaidya et al analyzed the clinicopathologic features of patients with biopsy-proven lymphoma of the GI tract using the Data Base of the Mayo Clinic Lymphoma and the University of Iowa/Mayo SPORE Data Base in a retrospective review of 1975 to 2012 data. They noted that 92 of the 1062 patients had intestinal perforation at presentation or during the course of chemotherapy. Lymphoma was primarily of GI origin in 72 patients and secondary from systemic lymphoma in the remaining 20 patients. The small bowel was the commonest site perforations (59%), followed by the stomach (16%) and the colon (22%).<sup>4</sup>

Similar findings were reported by Ara et al in their case series of eight patients

managed for bowel perforations from lymphoma where 6 of the 8 perforations occurred in the small bowel and only 2 involved the large bowel.<sup>11</sup> Ahmed A et al reported similar pattern of perforation in a study on 240 patients with intestinal lymphoma. The ileum was the most common site of perforation compared to other parts of the GI tract. Perforation occurred at presentation, during induction, during maintenance chemotherapy, or at relapse.<sup>12</sup>

Reports of GIT lymphomas presenting as perforation peritonitis also include adult patients. Abdul Rehaman et al<sup>13</sup> in Calicut, India, Love et al<sup>14</sup> in Chicago, USA, Warsinggih et al<sup>8</sup> in Makassar, Indonesia, and Tian Y et al<sup>15</sup> reported perforation peritonitis as first presentation of various forms of Primary GI lymphomas.

Our patient had perforation in her transverse colon. Perforation of the colon is less common possibly because (i) its wall is thicker than that of the small bowel and (ii) it is less frequently involved in GIT lymphomas. Gastric lymphomas, although more prevalent than small bowel and colonic lymphomas, are less likely to perforate due to thickness of the gastric wall.<sup>4</sup>

Definitive risk factor(s) for the lymphoma in our patient could not be established from the basic investigations carried out: she tested for negative retroviral disease (HIV), *Helicobacter pylori*, and hepatitis B virus (HBV). Genetic studies could not be carried out due to lack of these tests in our hospital and the nearby teaching hospital. Other risk factors for lymphoma in the literature include celiac disease, infection with Epstein-Barr virus (EBV), *Campylobacter jejuni* and T-cell lymphotropic virus-1 (HTLV-1), inflammatory bowel disease, immunosuppression, Wegener's granulomatosis, and rheumatoid arthritis.<sup>2, 3, 8</sup> Treatment strategies for GI lymphoma have changed over the last two decades.<sup>12</sup> The most widely used modalities are cytotoxic

chemotherapy or immunochemotherapy, radiotherapy and treatment of any identified underlying aetiology. Surgery as treatment modality is now reserved only for those with complications such as perforation, obstruction, fistula or bleeding. For intestinal Diffuse B Cell lymphoma, surgery is still a component of treatment in localized disease. A recent study recommends surgical resection followed by chemotherapy as an effective treatment strategy for localized intestinal DLBCL. The extent of lymph node dissection include regional lymph node dissection equivalent to colon adenocarcinoma or resection only of lymph nodes with suspected lymphoma involvement. Some centres use R-CHOP (with Rituximab) as chemoimmunotherapy especially in more aggressive diffuse B-Cell lymphomas.<sup>16, 17, 18, 19</sup>

Our patient was offered transverse colectomy, taking out all lymphovascular supply of the middle colic artery. This is to ensure oncologic clearance<sup>20</sup> since the histologic nature of the tumour was known at the time of surgery. A diverting ileostomy should have been created as there was no pre-operative bowel preparation however, proximal stoma was not made as the bowels were only slightly edematous and the patient was generally preserved. In addition, the pre-operative serum albumin was 34g/L (marginally low).

Our patient was followed up monthly for the first 3 months, then 3 monthly for 1 year and there were no clinical evidence of recurrence in the abdomen or chest and no superficial nodal disease. Contrast-enhanced thoraco-abdominal CT scan was performed at 6 months which was within normal limits. She is still being followed up.

The National Comprehensive Cancer Network (NCCN) guidelines for the surveillance for NHL include physical examination (to look for lymph nodes, liver and splenic enlargement), complete blood count, CT scans with contrast of the chest, abdomen, and pelvis every 3–6 months for the first 2 years, then every 12 months for every subsequent years for 2 years after

treatment for patients in complete remission.<sup>17, 21</sup> PET/CT is not included in the NCCN recommendations. The European Society of Medical Oncology guidelines also discourage the use of PET/CT in routine surveillance after complete remission.<sup>22</sup>

'Next-generation' approaches for detection of minimal residual disease in Hodgkin and non-Hodgkin lymphoma area novel serologic assessments which may provide opportunity to identify relapse early and intervene prior to progression of clinical disease. These include lactate dehydrogenase and absolute lymphocyte count.<sup>12</sup>

#### Conclusion and Recommendations:

Primary gastrointestinal lymphoma should be considered in children presenting with peritonitis, especially when clinical features are atypical for common causes such as typhoid perforation. To ensure good outcome, high index of suspicion, early surgical intervention, thorough peritoneal assessment, adequate tumour resection, histological confirmation, appropriate chemotherapy and prudent surveillance are essential.

**Consent:** Written informed consent to publish this case was obtained from the parent of the patient prior to writing of this manuscript.

**Conflict of interests:** None

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#### References

1. Ghimire P, Wu G-Y, Zhu L. Primary gastrointestinal lymphoma. *World Journal of Gastroenterology*. 2011;17(60): 697-707. doi: 10.3748/wjg.v17.i6.697
2. Toth L, Vasef MA, Molecular Pathogenesis of Primary Gastrointestinal Tract Lymphomas, *Seminars in Diagnostic Pathology*. 2021; 38(4): 46-52. doi: 10.1053/j.semmp.2021.04.003.
3. Bayramov R, Abdullayeva R. Primary Gastrointestinal Lymphoma [Internet]. In: Tukar Y. (Editor). *Lymphoma*. IntechOpen; 2022. doi: 10.5772/intechopen.101424
4. Vaidya R, Habermann TM, Donohue JH, Ristow KM, Maurer MJ, Macon WR, et al. Bowel perforation in intestinal lymphoma: incidence and clinical features. *Ann Oncol*. 2013; 24:2439-2443. doi: 10.1093/annonc/mdt188
5. Emeka CK. Peritonitis in Children: Experience in a Tertiary Hospital in Enugu, Nigeria. *Clin Surg Res Commun* 2020; 4(3): 1-5. doi: 10.31491/CSRC.2020.09.056
6. Osifo OD, Ogiemwony SO. Peritonitis in Children: Our Experience in Benin City, Nigeria. *Surgical Infections*. 2011; 12(2). doi: 10.1089/sur.2010.046
7. Sussman JJ. Surgical Emergencies in the Cancer Patient. In: Sabel MS, Sondak VK, Sussman JJ (Eds): *Essentials of Surgical Oncology*, Mosby, 2007, P 423-431, ISBN 9780815143857, doi: 10.1016/B978-0-8151-4385-7.50033-3.
8. Warsinggih W, Suluh D, Prihantono P, Muhammad F. Non-Hodgkin Lymphoma of the jejunum presenting as perforation peritonitis: A case report. *Annals of Medicine and Surgery*. 2020; 55:131-134. doi: 10.1016/j.amsu.2020.04.041
9. Giuliani A, Romano L, Coletti G, Walid A, Fatayer M, Calvisi G, Maffione F, Muolo C, Vicentini V, Schietroma M, Carlei F. Lymphangiomas of the ileum with perforation: a case report and review of the literature. *Ann Med Surg*. 2019;41:6-10. doi: 10.1016/j.amsu.2019.03.010.
10. Dawson MP, Cornes JS, Morson BC. Primary malignant lymphoid tumors of the intestinal tract. Report of 37 cases with a study of factors influencing prognosis. *Br J Surg*. 1961;49(213):80-89. Doi: 10.1002/bjs.18004921319
11. Ara C, Coban S, Kayaalp C et al. Spontaneous Intestinal Perforation Due to Non-Hodgkin's Lymphoma: Evaluation of Eight Cases. *Dig Dis*

- Sci* 2007;52,1752–1756.doi: 10.1007/s10620-006-9279-x
12. Ahmed G, ElShafiey M, Abdelrahman H, Semary S, Elkinaai N, Romeih M, et al. Surgery in perforated pediatric intestinal lymphoma, *European Journal of Surgical Oncology*, 2019; 45(2):279-283. doi: 10.1016/j.ejso.2018.08.022.
  13. Rehaman SA, Ramachandra CS, Jackaya RP. Primary Gastrointestinal Lymphoma Presenting as Perforation Peritonitis. *J Clin Diagn Res*. 2016 Mar;10(3):PD22-4. doi: 10.7860/JCDR/2016/15462.7483.
  14. Love J, Raza H, Kheirkhah P, et al. Primary Gastrointestinal T-cell Lymphoma Presenting as Spontaneous Perforation Peritonitis. *Cureus* 2023; 15(2): e35028. doi:10.7759/cureus.35028
  15. Tian Y, Li C, Tian R, Tian Q and Qiao S (2022) T-Cell Non-Hodgkin Lymphoma of the Ileum Presenting as Perforation and Peritonitis: A Case Report. *Front. Surg.* 9:810360. doi: 10.3389/fsurg.2022.810360
  16. Ibrahim A, Zedan A, Attia AMA. Localised gastrointestinal diffuse large B cell lymphomas; Does surgical approach still exist? *Forum of Clinical Oncology*. HeSMO. 2015; 6(1): 10 -17. doi: 10.1515/fco-2015-0003
  17. National Comprehensive Cancer Network. [https://www.nccn.org/professionals/physician\\_gls/pdf/b-cell\\_core.pdf](https://www.nccn.org/professionals/physician_gls/pdf/b-cell_core.pdf). Accessed February 18th, 2026
  18. Cogliatti SB, Schmid U, Schumacher U et al. Primary B-cell gastric lymphoma: a clinicopathological study of 145 patients. *Gastroenterology* 1991; 101: 1159- 1170.
  19. Kim S, Kang H, Kim J, et al; Comparison of treatment strategies for patients with intestinal diffuse large B-cell lymphoma: surgical resection followed by chemotherapy versus chemotherapy alone. 2011;117: 1958-1965,
  20. Dunn KMB, Rothenberger DA. Colon, Rectum, and Anus. In: Brunickardi FC, Andersen DK, Billiar RT, Dunn DL, Hunter JG, Matthews JB et al (Eds). *Schwartz's Principles of Surgery*. 10<sup>th</sup> Ed. New York: McGraw-Hill Education, 2015.p1187.
  21. Cohen JB, Kurtz DM, Staton AD, Flowers CR. Next-generation surveillance strategies for patients with lymphoma. *Future Oncol.* 2015;11(13):1977-1991. doi: 10.2217/fon.15.92.
  22. Ghielmini M, Vitolo U, Kimby E, Montoto S, Walewski J, Pfreundschuh M, et al. ESMO Guidelines consensus conference on malignant lymphoma 2011 part 1: diffuse large B-cell lymphoma (DLBCL), follicular lymphoma (FL) and chronic lymphocytic leukemia (CLL). *Ann Oncol.* 2013;24(3):561-76. doi: 10.1093/annonc/mds517.