



Case Report

Case Report on Diffuse Large B-Cell Non-Hodgkin Lymphoma with a Spontaneous Bowel Perforation

F. C. Makhandule¹, M. M. Z. U. Bhuiyan^{1*}, K. N. Mongwe¹

¹ Department of General Surgery, Mankweng Academic Hospital, Faculty of Health Science, University of Limpopo, South Africa.

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Abstract

Background: Intestinal Non-Hodgkin lymphoma is an uncommon cause of acute abdominal pain. The main objective of the present case report is to share our experience with Diffuse Large B Cell Non-Hodgkin Lymphoma with spontaneous bowel perforation in a setting of HIV. **Method:** Description of a Case Report Diffuse Large B-Cell Non-Hodgkin Lymphoma with a spontaneous bowel perforation: A 39-year-old female patient presented with a one-day history of acute abdomen. She is known retroviral disease reactive with CD4 count 534, Viral Load 131 on Antiretroviral Treatment-Fixed Dose Regimen duration of more than 5 years and was being treated for Peptic Ulcer Disease. Chest X-ray: showed pneumoperitoneum consistent with a perforation. A Laparotomy was performed and found a perforated Jejunum leaking small bowel contents. Resection and primary anastomosis were performed, and washout was done. Post-Operative condition was uneventful, and she was discharged four days after the operation. The resected portion was sent for histology, which showed perforation of the Jejunum secondary to a Diffuse Large B Cell Non-Hodgkin Lymphoma. **Conclusion:** The diagnosis of Intestinal Lymphoma poses a diagnostic challenge for both developed and developing countries; however, coupling the risk factors with signs and symptoms can assist one in making a diagnosis. It is therefore important to always have a high index of suspicion, particularly for HIV patients with lymphadenopathy.

Keywords: Intestinal non-Hodgkin Lymphoma; Jejunum; Chest X-ray; HIV patients.

1. Introduction

Non-Hodgkin Lymphoma (NHL) is a neoplasm of the lymphoid tissue and accounts for 90% of all lymphomas. NHL originates from precursors and mature cells of both B and T Cells [1, 2]. There are various subtypes (NHL), each with a different epidemiology, aetiology, immunophenotypic, genetic, and clinical features and response to therapy. NHL can be divided into two groups: Indolent lymphomas (IL) and Aggressive Lymphoma (AL), based on the disease's prognosis. Indolent lymphoma includes Follicular Lymphomas, Chronic Lymphocytic Leukemia, and Splenic Marginal Zone Lymphoma [3]. Aggressive Lymphoma in no specific order, include Diffuse Large B cell lymphoma (DLBCL), Burkitt Lymphoma, Precursor B Cell and T Cell Lymphoblastic Lymphoma. Intestinal non-Hodgkin lymphoma is an uncommon cause of acute abdomen in acute care surgical cases seen at Mankweng Hospital. The theatre records at Mankweng Hospital indicate that most cases attended to and operated on are of complicated Acute Appendicitis. DLBCL is the commonest subtype of lymphoma in the gastrointestinal tract (GIT) and can occur anywhere along the GIT, with varying percentages in each region. The GIT is at an increased risk of perforation and complications [1]. Our case presented with a perforation and was, according to our knowledge, the first in our institution.

* Corresponding author: mirza.bhuiyan@ul.ac.za; bhuiyanmirza@gmail.com

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The main objective of this case report is to share our experience with non-Hodgkin lymphoma with spontaneous bowel perforation and recommendations on the course of action when one is faced with a patient with suspicious lymph nodes.

Method: Description of a Case Report Diffuse Large B-Cell Non-Hodgkin Lymphoma with a spontaneous bowel perforation. A written informed consent was obtained from the patient to publish this case report.

2. Case Presentation

A 39-year-old female patient presented with a one-day history of acute abdomen. She has retroviral disease (RVD) with a CD4 count of 534 cells/mm³, Viral Load 131 copies/mL, and has been taking Antiretroviral Treatment-Fixed Dose Regimen duration of more than 5 years. The patient was referred from a peripheral hospital with a working diagnosis of a Perforated Peptic Ulcer. She was a non-smoker, had no history of nonsteroidal anti-inflammatory drugs (NSAIDs), and was actively on eradication therapy (Ampicillin, Metronidazole, and Omeprazole) for H pylori. She had never undergone an endoscopy (Gastroscopy or Colonoscopy) prior to her presentation to this hospital. She presented to her local hospital with a one-day history of sudden, severe abdominal pain. The pain was associated with nausea, as she had one episode of vomiting and did not have any previous abdominal surgery.

- *On examination:* acutely ill looking. Vitals BP:121/78 P:146 R:18 Temp:36,9. She was not pale or jaundiced, she had enlarged lymph nodes & dehydrated.
- *Abdominal Examination:* Revealed Peritonitis.
- *On investigation:* White cell count (WCC) 16.3 x10/L, Hemoglobin (HB) 13.7 g/dl, Urea 5.9 mmol/L creatinine 123 mmol/L with normal electrolytes and Albumin 40 g/L.
- *Erect Chest X Ray:* Showed gas under the diaphragm (Pneumoperitoneum) (Figure 1).

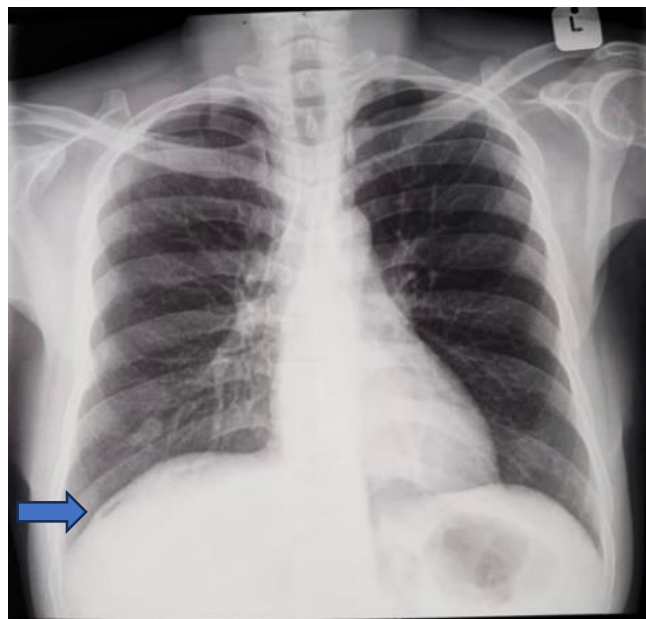


Figure 1. Erect Chest X ray. Gas under diaphragm

The patient consented for an operation. After resuscitation, Diagnostic Laparoscopy (DL) using the open Hasson Technique started, but Laparoscopic exploration was aborted at the sight of intestinal contents and converted to Laparotomy. The Laparotomy revealed a perforated Jejunum, leaking small bowel contents. A resection and primary anastomosis (Staple Sutured) performed, and a washout was done. Her postoperative condition was uneventful, and she was subsequently discharged four days after the operation. The resected portion was sent for histology, and the result showed that the perforation of the Jejunum is secondary to a Diffuse Large B Cell Non-Hodgkin Lymphoma. On further follow-up, the patient recovered well. There was no surgical site infection. Staging CT was done (Figures 2 to 5) and reported: Lymphadenopathy below and above the diaphragm, which includes enlarged multiple lymph nodes in the neck, Bilateral axillary Lymph nodes, multiple abdominal lymph nodes, bilateral inguinal lymph nodes, and thickening of the small bowel wall, which is concluded as Stage 4 of Ann Arbor Classification [4].



Figure 2. Bilateral axillary Lymph nodes.



Figure 3. Para aortic lymph nodes

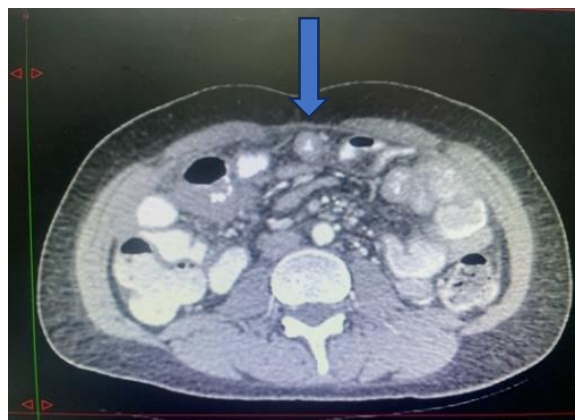


Figure 4. Thickened Bowel Wall

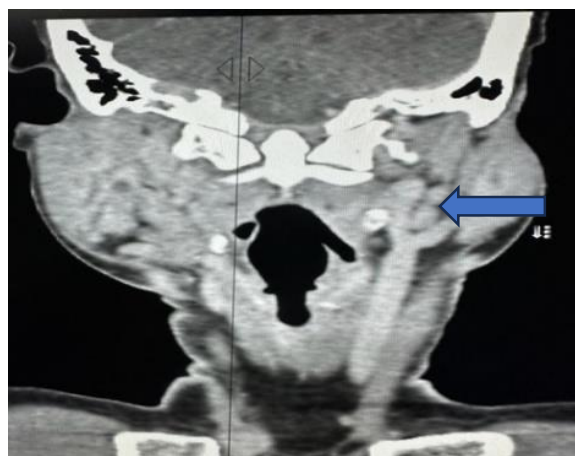


Figure 5. Carotid space Lymph nodes

The patient was then referred to the Medical Oncology Unit at Polokwane Provincial Hospital. Unfortunately, upon follow up the patient demised three months after the diagnosis and had only received one cycle of chemotherapy.

3. Discussion

Primary gastrointestinal lymphoma is very rare, constituting only about 1–4%; however, the gastrointestinal tract is the most common site of extranodal NHL [4]. The most common site involved across many studies is the stomach, followed by the small intestines, predominantly the Ileum (60–65%), followed by the Jejunum (20–25%), Duodenum (6–8%), and other sites (8–9%) [4]. This is not to be confused with the common site of involvement in the colon, where the cecum is the commonest site of involvement [5].

NHL remains difficult to diagnose due to its nonspecific presentation, but certain risk factors have been implicated in the pathogenesis of gastrointestinal lymphoma, including the human immunodeficiency virus, Coeliac disease, Epstein-Barr Virus, Hepatitis B, Inflammatory bowel disease, and Helicobacter Pylori.

H. pylori is a recognized risk factor for MALT, and in some cases, eradication therapy alone is sufficient, especially in the early stages of the disease [6], with some authors citing that Indolent NHL can be managed by observation alone.

Lymphoma has various clinical features and can mimic a common disease like tuberculosis (TB), especially in a setting of HIV, so it is important, especially in South Africa, which has the highest number of HIV-infected people worldwide, estimated to be 5,7 million people in 2008 [7].

The signs and symptoms of intestinal lymphoma include abdominal pain, ileus, diarrhoea, weight loss, and gastrointestinal bleeding [4].

In our case, the patient was treated for Peptic Ulcer Disease and was on eradication therapy for H. pylori. At the time of presentation, however, she did not have signs of gastrointestinal bleeding. Despite being treated for H pylori, our patient never had a confirmatory urea breath test due to being resource restricted.

The age of prevalence is similar across different geographic locations [8]. As seen in a Thailand retrospective study from January 2012 to December 2016, the median age was 63 years, with male predominance; similar findings were made by Vaidya et al. on the Mayo Clinic Data Base (January 1975–May 2012), where the median age was 64 years [9]. Conversely, our patient was significantly younger, at age of 39, and was female.

The diagnosis of Diffuse Large B Cell Non-Hodgkin Lymphoma is based on tissue pathological assessment, as it was in our case. DLBCL is the commonest histological subtype; as reported in a study of 6382 lymphoma patients from southwest China. DLBCL was also the commonest subtype in an academic complex in Johannesburg (South Africa), [10] and the commonest lymphoma associated with perforations at initial presentation [9]. As stated by Nanthakwang et al., MALT is the second commonest [8]. However, this tends to differ from geographical locations, as noted in a Chinese study [11].

Staging of the disease is based on Clinical, Computed Tomography (CT), Bone marrow, and Endoscopic ultrasound, which is superior to CT scans in assessing the T and N. Dawson's criteria [4], which is used for primary gastrointestinal lymphoma, while Ann Arbor staging with Musshoff modification [4] is used to stage subgroups, and the international prognostic index (IPI) developed for DLBCL.

In some studies, the factors associated with mortality are hemoglobin <7 g/dl, B symptoms (triad of unexplained temperature >38 degrees Celsius, drenching night sweats, and >10% weight loss in the previous 6 months), and lactate dehydrogenase above the upper normal limits, as seen in the Thailand study [8]. The higher the LDH, the more advanced the stage, the more aggressive the lymphoma, and normal LDH does not exclude lymphoma [12]. Other studies by Kako et al. reported lower outcomes when complicated by perforation [13]. In the study from Mayo Clinic by Vaidya, at the time of follow-up, 55 of the 92 patients had died. 28 of 92 died directly due to perforation or a subsequent complication [9].

The treatment of intestinal NHL varies and depends on histological subtypes, stage, site of involvement, and clinical presentation. Our patient was offered surgery, followed by chemotherapy [14]. Chemotherapy is the primary treatment for all types of NHL [14]. DLBCL with complications, such as perforation or obstruction, necessitates surgical resection. After resection, surgery alone or in combination with chemotherapy was previously under debate [15]. The patient in our case presented with a perforation and was offered resection followed by chemotherapy. A recent study by Lu et al. found that chemotherapy in combination with surgical resection is associated with better survival outcomes in non-metastatic disease [16], and Maguire et al. found that there are better survival outcomes in patients who receive chemotherapy, but the overall survival depends on age, subtypes of lymphoma, and comorbid conditions [17]. There are no clear indications for surgery without complications; however, surgery offers a definitive diagnosis, alleviates symptoms, and can prevent tumor perforation while receiving chemotherapy [17].

It is important to note that perforation can occur after starting chemotherapy, especially after the first cycle [1]. Chemotherapy includes Cyclophosphamide, doxorubicin, vincristine, and prednisone, known as CHOP-R Rituximab. Radiotherapy is not beneficial for DLBCL involving the small intestine [15, 18].

4. Conclusion

The diagnosis of intestinal lymphoma poses a diagnostic challenge for both developed and developing countries; however, coupling the risk factors with signs and symptoms can assist in making a diagnosis. The management of intestinal lymphoma without complications is still under debate; however, it is also important to note that patients initiated on chemotherapy without surgery are still at risk of complications, i.e., perforation, and such patients need to be followed up closely, especially after receiving chemotherapy. It is therefore crucial to always maintain a high index of suspicion, particularly for HIV patients with lymphadenopathy that has been persistent for more than three weeks and measures more than 1.5 cm. In South Africa, DCLBL is underdiagnosed because there is a high prevalence of HIV infection, a lack of diagnostic algorithms, clinical features overlapping with those of TB, particularly the B symptoms, and poor access and timely referral to specialized centers. We therefore recommend a biopsy of suspicious lymph nodes, especially in HIV-infected patients.

5. Declarations

5.1. Author Contributions

Conceptualization, F.C.M., M.M.Z.U.B., and K.N.M.; methodology, F.C.M., M.M.Z.U.B., and K.N.M.; validation, M.M.Z.U.B. and K.N.M.; formal analysis, F.C.M., M.M.Z.U.B., and K.N.M.; investigation, F.C.M.; resources, F.C.M., M.M.Z.U.B., and K.N.M.; data curation, F.C.M., M.M.Z.U.B., and K.N.M.; writing—original draft preparation, F.C.M.; writing—review and editing, F.C.M., M.M.Z.U.B., and K.N.M.; visualization, F.C.M., M.M.Z.U.B., and K.N.M.; supervision, M.M.Z.U.B. and K.N.M.; project administration, M.M.Z.U.B. All authors have read and agreed to the published version of the manuscript.

5.2. Data Availability Statement

Data sharing is not applicable to this article.

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5.4. Acknowledgements

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5.5. Ethical Approval

Permission was obtained from the clinical Executive Director of Mankweng Hospital dated 17.07.2023, and informed consent was given by the patient.

5.6. Institutional Review Board Statement

Approval was obtained from the clinical Executive Director of Mankweng Hospital dated 17.07.2023.

5.7. Informed Consent Statement

Informed consent was obtained from all subjects involved in the study.

5.8. Declaration of Competing Interest

The authors declare that there is no conflict of interests regarding the publication of this manuscript. In addition, the ethical issues, including plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication and/or submission, and redundancies have been completely observed by the authors.

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