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INTESTINAL PERFORATION IN A CASE OF NON-HODGKINS LYMPHOMA

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ABSTRACT

Non-Hodgkin's lymphoma patients may experience the rare but serious complication of intestinal perforation. This case report explores a patient who developed a distal ileal perforation following chemotherapy for diffuse large B-cell lymphoma. A 68-year-old male with NHL, initially diagnosed in October 2023, received six cycles of R-CHOP chemotherapy. Post-treatment imaging showed no significant disease activity. However, a repeat PET CT in January 2024 revealed metabolically active wall thickening in the distal ileal bowel loops, suggesting inflammatory or lymphomatous involvement. In March 2024, the patient presented with acute abdominal pain, vomiting, and an inability to pass stools and flatus. Clinical examination indicated peritonitis. Imaging confirmed a perforation of the distal ileum with frank pneumoperitoneum. Emergency exploratory laparotomy was performed, revealing a 3x2 cm perforation at the antimesenteric border of the distal ileum, along with a mesenteric tear and fecal contamination. A double-barrel ileostomy was performed to address the perforation. This case highlights the severe complication of gastrointestinal perforation in NHL patients, emphasizing the importance of early detection and prompt surgical intervention. Vigilant monitoring for gastrointestinal symptoms in NHL patients undergoing chemotherapy is crucial to ensure timely diagnosis and treatment.

Keywords: *Non-Hodgkin's Lymphoma, Intestinal Perforation, Chemotherapy, Emergency Laparotomy, Diffuse Large B-cell lymphoma, Peritonitis, Ileostomy.*

INTRODUCTION

Non-Hodgkin Lymphomas (NHL) arise from the malignant transformation of mature lymphocytes.[1] Intestinal perforation is an uncommon but serious complication of non-Hodgkin's Lymphoma (NHL), with very few cases reported in association with primary intestinal malignant lymphoma.[2] NHL can involve the gastrointestinal tract, leading to significant clinical challenges and potentially life-threatening outcomes.[3] Gastrointestinal perforations can occur spontaneously or as a result of chemotherapy, adding complexity to the management of NHL patients.[4]

The occurrence of gastrointestinal perforations in NHL patients is often delayed in diagnosis due to the immunosuppressive effects of steroids used in treatment, which mask symptoms until an acute abdomen develops. Previous studies have highlighted the small intestine as the most common site for these perforations, particularly in patients with the Diffuse Large B-cell lymphoma subtype.[5] The mechanisms behind chemotherapy-induced perforations include rapid tumor necrosis, tumor lysis, and tissue damage from excessive granulation.

This report describes a case of a 68-year-old male with non-Hodgkin's lymphoma who developed distal ileum perforation. Clinical presentation, diagnostic workup, management, and operative details are discussed.

CASE PRESENTATION

A 68-year-old male, with a known case of non-Hodgkin's Lymphoma, was diagnosed in October 2023 after a biopsy of the left supraclavicular lymph node. The biopsy revealed fragmented bits with diffuse intermediate lymphoid cells, interspersed large nucleolated cells, scattered lymphocytes, plasma cells, and mitotic figures, suggesting diffuse non-Hodgkin's Lymphoma. The atypical lymphoid cells were immunopositive for CD45 (diffuse), BCL2 (70% cytoplasmic), CD10 (diffuse), and immunonegative for MUM1 and CyclinD1, leading to a final diagnosis of diffuse large B-cell lymphoma, Germinal center type.

A PET CT scan indicated hypermetabolic enlarged lymphadenopathy above and below the diaphragm and hypermetabolic hypodense lesions in the spleen, suggestive of involvement. The patient underwent six cycles of R-CHOP regimen chemotherapy. Post-chemotherapy PET CT revealed no significant metabolic activity in abdominal nodes and small splenic hypodense lesions with no evidence of active disease elsewhere. However, a repeat PET CT in January 2024 showed focal metabolically active wall thickening in distal ileal bowel loops, suggesting either inflammatory or lymphomatous involvement.

One month beforethe presentation, the patient experienced altered bowel habits and intermittent lower abdominal pain. A colonoscopy-guided biopsy indicated chronic ileitis. In March 2024, the patient presented with excruciating abdominal pain, four episodes of vomiting containing food particles over the previous two days, and an inability to pass stools and flatus for one day. On presentation, the patient was febrile with a body temperature of 99.9°F, tachycardic (PR-120/min), tachypneic, and kept his knees flexed over his abdomen due to pain. Examination revealed a rigid abdomen with generalized tenderness and absent bowel sounds.

Investigations

An X-ray of the erect abdomen revealed air under the diaphragm. A CECT of the abdomen and pelvis showed frank pneumoperitoneum secondary to a large defect in the anterior wall of the distal ileum in the infraumbilical region, with spillage of intraluminal contents into the peritoneal cavity. Additionally, a few ileal loops proximal to the perforation showed wall thickening and homogeneous enhancement, likely reactive. There was extensive reactive mesenteric fat stranding, early changes of peritonitis, moderate ascites, and multiple subcentimetric mesenteric lymph nodes.

Treatment

The patient was planned for an emergency exploratory laparotomy. During surgery, ascitic fluid was suctioned, and the bowel was decompressed. The margins of the perforation were freshened and sent for histopathology. A wash was given, and a double-barrel ileostomy was performed using the perforated loop. A drain was placed, and the abdomen was closed in layers.

Intraoperative Findings

Intraoperative findings included a 3x2 cm perforation at the antimesenteric border of the distal ileum, a corresponding mesenteric tear, slough present at the borders of the perforation with irregular margins, and 400 ml of ascitic fluid with evidence of fecal staining.

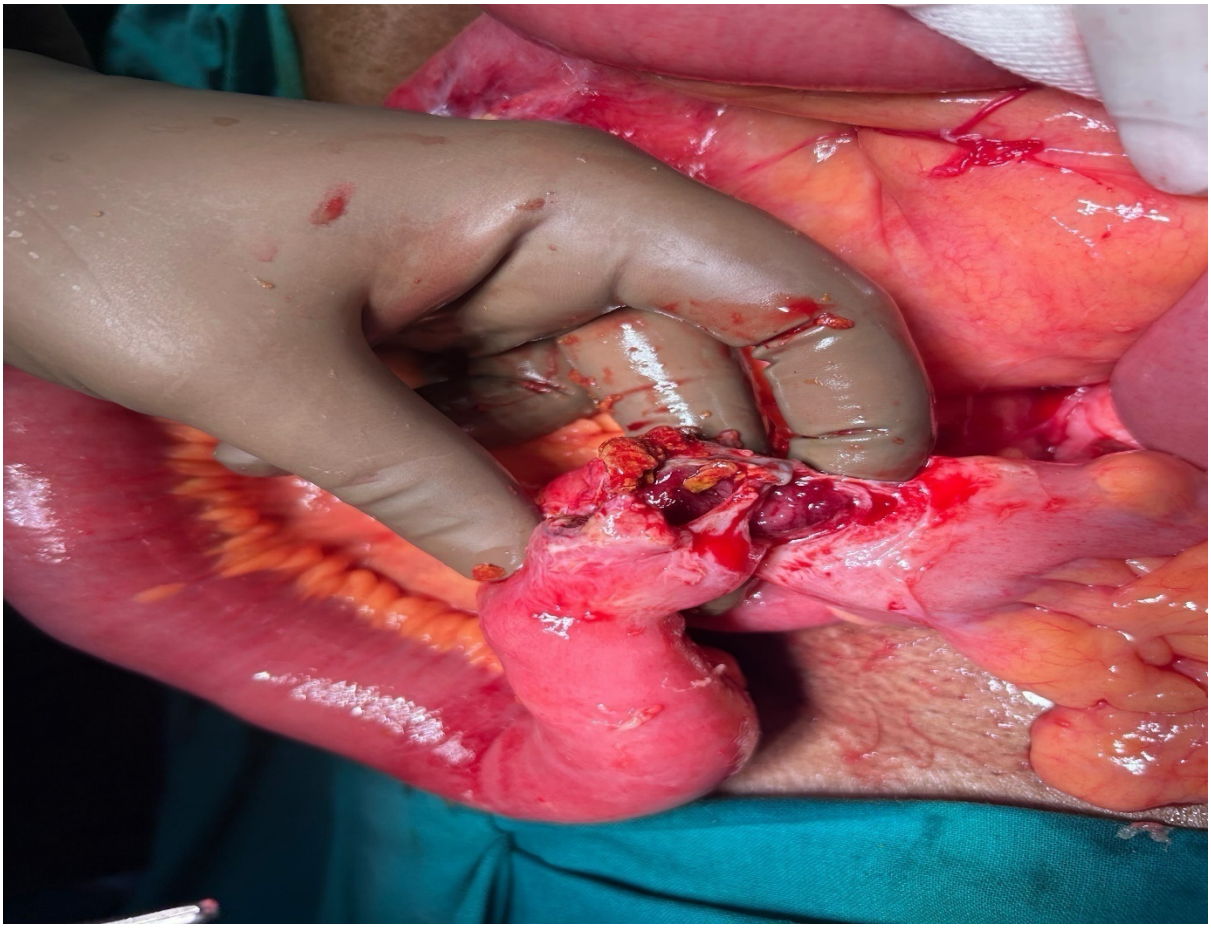

Figure 1. Intestinal perforation site.

DISCUSSION

Gastrointestinal involvement significantly impacts the clinical progression of NHL. A life-threatening complication of NHL is free gastrointestinal perforation, which can occur anywhere along the digestive tract, from the stomach to the colon. These perforations may develop spontaneously or as an adverse effect of chemotherapy. The incidence of intestinal perforation in patients with intestinal lymphoma varies widely, with reported rates between 1% and 25%.[6-8]

Chemotherapy toxicity presents additional challenges for NHL patients, as it can exacerbate complications. Steroids used in treatment often suppress symptoms, leading to delayed diagnosis.[4] Consequently, perforations in the small intestine and colon may remain undetected until the patient presents with an acute abdomen.

Among the complications associated with NHL, intestinal perforations are particularly well-documented. According to **Ono et al.,[9]** chemotherapy-induced perforations result from rapid tumor necrosis, tumor lysis, and tissue damage due to excessive granulation. **Vaidya et al.[10]** reported the small intestine as the primary site of perforation, with Diffuse Large B-cell Lymphoma being the most common subtype.

This case underscores the critical nature of gastrointestinal perforations in patients with non-Hodgkin's lymphoma and emphasizes the need for rapid diagnosis and immediate surgical

intervention to optimize patient outcomes.

CONCLUSION

This case underscores the severe and potentially life-threatening nature of intestinal perforation Despite successful initial chemotherapy treatment, the patient experienced a spontaneous perforation of the distal ileum, highlighting the risks associated with gastrointestinal involvement in NHL. Early recognition and prompt surgical intervention are crucial for managing such acute complications effectively. This case also emphasizes the need for vigilant monitoring of NHL patients for gastrointestinal symptoms, especially those undergoing chemotherapy, to ensure timely diagnosis and treatment. Additional research is required to elucidate the underlying causes and risk factors of gastrointestinal perforations in NHL patients to improve outcomes.

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