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CASE REPORT

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Unusual presentation of aggressive high-grade B-cell lymphoma of colonic origin: A case report and review of the literature

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Abstract

Colonic lymphoma is a rare disease. The presented case is unique, being manifested with abrupt onset, including circulatory shock and lactic acidosis as the initial presentation.

KEYWORDS

aggressive high-grade B-cell lymphoma, colonic lymphoma, lactic acidosis, shock

1 | INTRODUCTION

The gastrointestinal tract is the most common site for extranodal lymphoma. It accounts for approximately 30% of all cases.[1] Colorectal lymphoma accounts for 1%–3% of the gastrointestinal lymphomas and 0.3% of large intestinal malignancies.[2] Incidence of colorectal lymphoma is highest in age 50–70 years, with male predominance. The most common histologic types according to the WHO classification are as follows: diffuse large B-cell lymphomas, mantle cell lymphomas, and Burkitt's lymphomas.[3]

Etiology and risk factors, specifically for primary colorectal lymphoma, remain largely unknown. Congenital and acquired immunodeficiency syndromes have been found to predispose colonic lymphoma.[4,5]

Signs and symptoms are mostly nonspecific: abdominal pain, weight loss, an abdominal palpable mass, and bloody stool.[6]

The Lugano classification [Table 1] is the current staging system used for patients with Non-Hodgkin lymphoma. It is based on the Ann Arbor staging system. This staging system focuses on the number of tumor sites (nodal and extranodal) and their location.[7]

We report an unusual presentation of this rare disease.

2 | CASE DESCRIPTION

An 81-year-old man presented to the emergency department with weakness and bloody diarrhea. His medical

TABLE 1 Revised staging system for primary nodal lymphomas (Lugano classification)

Stage	Involvement	Extranodal (E) status
Limited		
I	One node or a group of adjacent nodes	Single extranodal lesions without nodal involvement
II	Two or more nodal groups on the same side of the diaphragm	Stage I or II by nodal extent with limited contiguous extranodal involvement
II bulky	II as above with "bulky" disease	Not applicable
Advanced		
III	Nodes on both sides of the diaphragm; nodes above the diaphragm with spleen involvement	Not applicable
IV	Additional noncontiguous extralymphatic involvement	Not applicable

Note: Extent of disease is determined by positron emission tomograph/computed tomography (PET/CT) for avid lymphomas and CT for nonavid histologies. Tonsils, Waldeyer's ring, and spleen are considered nodal tissue.

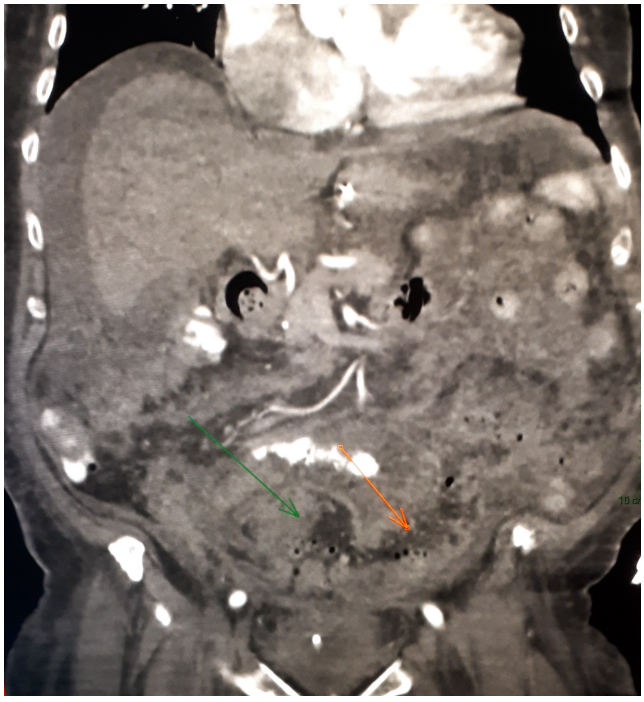

FIGURE 1 Abdominal computed tomography showing perihepatic ascites and mesenteric infiltration (irregular fat tissue—red arrow vs. healthy fat tissue—green arrow)

history was significant only for atrial fibrillation for which he was treated with dabigatran.

Vital signs on presentation showed no fever, heart rate of 92 beats per minute, and blood pressure of 60/30 mmHg.

Physical examination revealed a non-tender abdomen, with normal bowel sounds; he had black-colored stool on rectal examination. Nasogastric tube was inserted and drained coffee ground-like secretion.

Laboratory results showed hemoglobin level of 14.5 mg/d, just mildly decreased from his baseline level of 15 mg/d. His white cell count and platelets were normal. Creatinine level was 4.9 mg per deciliter, and lactate was 8 mmol/L.

Fluid resuscitation was initiated, along with noradrenalin and Idarucizumab administration. He underwent an urgent endoscopy that showed a small non-bleeding gastric ulcer.

The patient was admitted to the medical intensive care unit. Due to a lack of clinical improvement after initial interventions and after ruling out gastrointestinal bleeding, a computed tomography (CT) scan was done in order to look for another abdominal pathology. The CT scan demonstrated ascites and mesenteric infiltration [Figure 1]. Bedside paracentesis drained cloudy fluid with serum-ascites albumin gradient lower than 1, low glucose levels, and a very high lactate dehydrogenase level of 17,000 U/L. Ascitic cell count was 45,000 leukocytes with predominance of polymorphonuclears. The fluid was sent to cytologic examination.

Two days after his admission, the patient continued to deteriorate and was taken to the operating room for exploratory laparotomy. He underwent sigmoidectomy and Hartmann's procedure due to severe edema and adhesions [Figure 2]. During the following days, he became febrile, hemodynamically unstable, and oliguric. A revision laparotomy was done, which showed widespread necrotic bowel lesions that necessitated total colectomy. The resected bowel was sent to histologic examination (the main pathological findings were transmural lymphoid infiltrates and positive markers in different staining methods that were compatible with high-grade B-cell lymphoma of colonic origin) [Figure 3]. Flow cytometry of the ascitic fluid showed aggressive large B-cell lymphoma of colonic origin. The patient was treated with the CHOP protocol therapy (cyclophosphamide, doxorubicin, vincristine, and prednisone). Sadly, after 45 days in the ICU, the patient died from enterococcal sepsis.

3 | DISCUSSION AND LITERATURE REVIEW

The patient presented to the MICU with a presumptive diagnosis of hemorrhagic shock due to gastrointestinal bleeding.

Due to stable hemoglobin level, stabilization of blood pressure after fluid resuscitation with a paradoxically rising lactate level and a large amount of ascitic fluid, an abdominal CT was performed to look for bowel pathology.

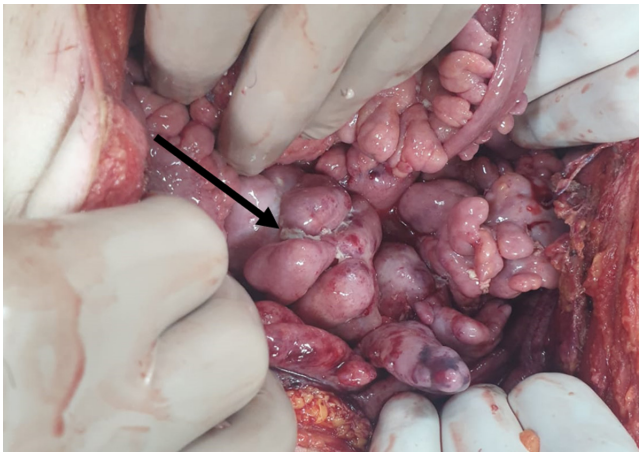

FIGURE 2 Intraoperative Intestinal view. Intraoperative view showing severely necrotic colon and peri-colonic fat involved with white irregular tissue (arrow)

Radiographic findings associated with colorectal lymphoma are often nonspecific, sharing similarities with other types of colorectal disease, such as colorectal carcinoma and inflammatory bowel disease. CT scan may demonstrate the following findings in colorectal lymphoma: polypoid masses, circumferential infiltration (with or without ulceration); a cavitary mass excavating into the mesentery; endo- or exo-enteric tumors; mucosal nodularity; fold thickening. Intussusception may occur with cecal involvement. Occasionally, focal strictures, aneurysmal dilatation, or ulcerative forms with fistula formation may be seen. Features that help differentiate lymphoma from adenocarcinoma include extension into the terminal ileum, well-defined margins with preservation of fat planes, no invasion into adjacent structures, and perforation with no desmoplastic reaction.[8]

The cecum and ascending colon are the most common sites for colorectal lymphoma (57% and 18% of cases, respectively) probably due to the larger lymphoid tissue, which is present in these regions. Other sites involved are the transverse, recto-sigmoid (10%) and the descending colon (5%).[9]

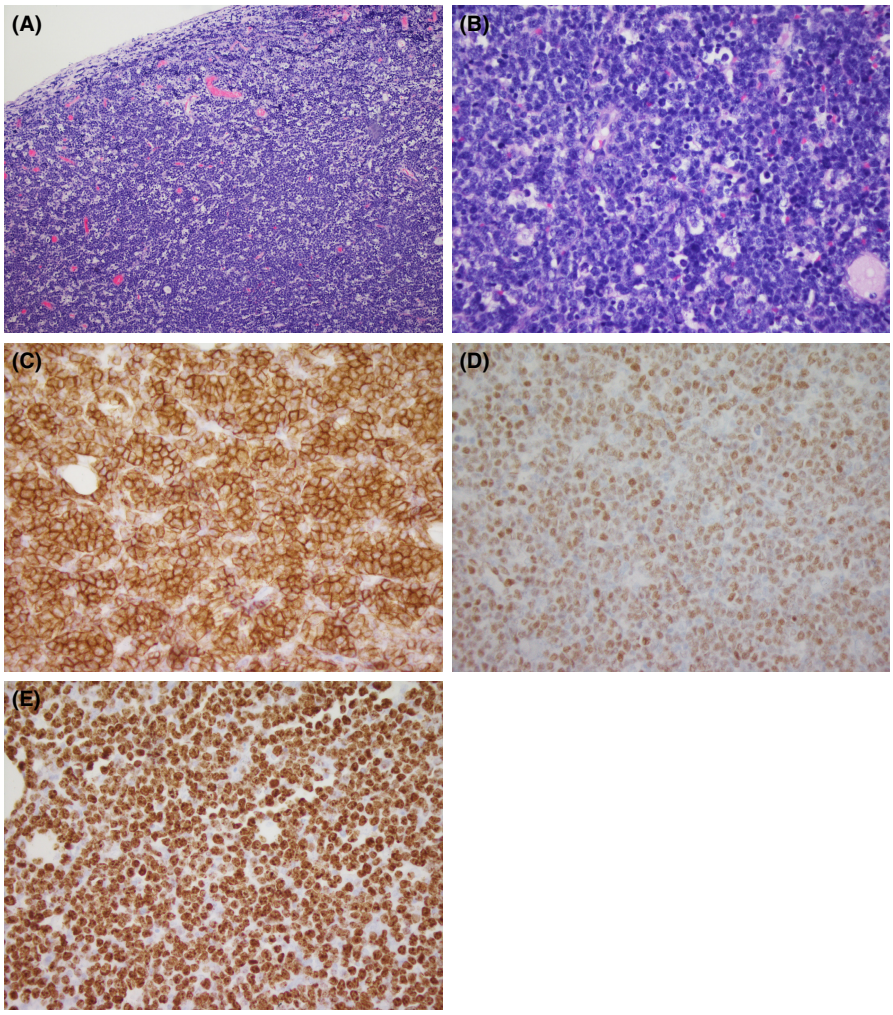

FIGURE 3 Colonic specimen morphology and immunohistochemistry. Pathological examination of the colectomy specimen showing: hematoxylin-eosin staining ×100, transmural infiltration, and expansion of the colonic wall by dense lymphoid infiltrates, with extensive involvement of the pericolic fatty tissue (1). Hematoxylin-eosin staining, x400 the infiltrates are composed of large cells with high nucleo-cytoplasmic ratio, vesicular nuclei, and inconspicuous nucleoli demonstrating a widespread "starry-sky"-like pattern (2). High positivity for CD20 (3), C-myc was positive in 95%–98% of the tumor cells (4) and Ki67 proliferation index of 100% (5). Immunostainings also showed positivity for MUM1 and a weak positivity for CD10. The tumor stained negative for Bcl6, Bcl2, TdT, and Cyclin D1

The management of colorectal lymphoma is based on the extension of the disease and clinical status of the patients at the time of diagnosis.[10] Treatment varies from chemotherapy alone to multimodal therapies combining surgery, chemotherapy, and radiation therapy. Chemoimmunotherapy and particularly cyclophosphamide, doxorubicin hydrochloride, vincristine sulfate (oncovin), and prednisone combined with rituximab remain the mainstay of treatment.[11]

Surgical approach may be used only for local control in patients with aggressive lymphoma and for treatment of complications such as bleeding, perforation, or intussusception. Guidelines lack specific information on the standard of care in primary gastrointestinal lymphoma of the aggressive type.[12]

Patients with colonic lymphoma can present with bleeding, obstruction, or perforation (altogether 32%), necessitating upfront surgical resection.[13] In these cases, surgery is often preferred in order to avoid complications and particularly the risk of perforation. The rate of spontaneous perforation in patients with colorectal lymphoma is 5%–11.5%.[14] In large lesions, surgical intervention may decrease rates of post-chemotherapy perforation and bleeding. It may also increase long-term remission rates over chemotherapy alone.[15,16]

Prognosis of colorectal lymphoma depends on numerous factors. The stage at diagnosis and the histological grade are the most important elements affecting overall survival rates.[17]

Our patient showed an advanced disease that was diagnosed at a very late stage. Warning signs of lymphoma are so subtle that it may take some time for patients to realize it and look for medical assistance. The age of the patient could have influenced the promptness of diagnosis; in fact, older patients may underestimate symptoms for a long time.[18] Colorectal lymphoma is seldom one of the top differential diagnoses for patients admitted with gastrointestinal symptoms. Abdominal CT is usually not specific, and tissue is usually needed for diagnosis.

An unusually elevated LDH and white cell count although not specific should raise the suspicion.

This case serves as an important reminder for physicians to be minded of the insidious course of this rare entity, the possibility of complicated presentation, and the importance of correct and timely diagnosis.

AUTHOR CONTRIBUTION

Amit Kosto MD—main writer. Aya Gozlan-Talmor MD—hematological consultant. Etai Levy MD—hematological consultant. Karen Nalbandyan MD—pathology consultant. Lior Fuchs MD—treated the patient, intensive care consultant. Ori Galante MD—treated the patient, intensive care consultant and main writing consultant.

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None.

CONFLICTS OF INTERESTS

There is no ethical or financial conflict of interest for any of the authors.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

CONSENT

Written informed consent was obtained from the patient to publish this report in accordance with the journal's patient consent policy.

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