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Case Report

High grade Burkitt lymphoma in an immunocompetent young patient: Concomitant gastric and ileal localizations ☆,☆☆

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ABSTRACT

Burkitt lymphoma is a highly aggressive and rapidly growing B cell non-Hodgkin lymphoma with heterogeneous pattern of manifestations. We present a rare case of a 39-year-old immunocompetent male with double localization of Burkitt lymphoma: gastroduodenal and ileal tract. The gastric location is extremely rare, and the association with another site is unusual with only few reports in the literature. Imaging modalities play a crucial role in correct diagnosis as it can manifest as a focal mass or as segmental wall thickening.

Radiologists should recognize common and uncommon presentations and sites of Burkitt lymphoma given the urgency of potential treatment, in order to improve the patient's prognosis.

Introduction

Burkitt lymphoma is an aggressive B-cell lymphoma that typically affects children or immunocompromised adults [1]. It accounts for up to 40% of pediatric lymphomas in the United States and Western Europe, making it the most common subtype of non-Hodgkin lymphoma (NHL) in the pediatric population. In contrast, Burkitt lymphoma makes up just 1%-2% of all NHLs in adults [1].

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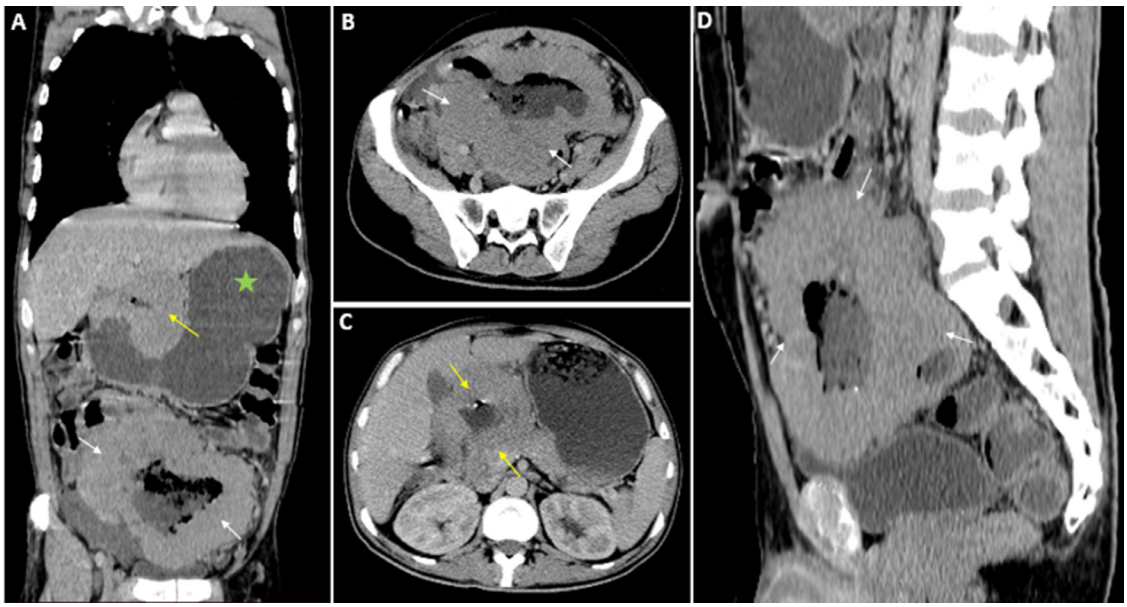

Fig. 1 – Postcontrast CT of the abdomen and pelvis in coronal, axial and sagittal views, showing a double localization of Burkitt lymphoma of the pyloric and duodenal area (yellow arrows) and the ileal tract (white arrows) presenting as an irregular circumferential and nonstenosing wall thickening, with moderate enhancement after contrast administration and a typical "aneurysmal" aspect.

Furthermore, localization in the abdomen outside of the ileocecal region is extremely uncommon and has only been reported in a few cases [2].

The standard treatment consists of cytoreduction of the tumor followed by intensive chemotherapy [2]. Due to the high glycolytic rate of Burkitt lymphoma, FDG PET, and FDG PET/CT are sensitive assays for both initial diagnosis and follow-up of this malignant pathology [2].

Case report

A 40-year-old man with a history of active smoking and sporadic alcoholism was admitted for chronic stomach pain. His condition began 6 months prior to admission with the onset of intermittent cramp-like abdomen pain that was mostly localized in the right iliac fossa and accompanied by nausea, postprandial vomiting, eructation, pyrosis, and occasional liquid diarrhea. His symptoms worsened during the course of the progression and the patient suffered from fatigue, anorexia and a 15 kg weight loss in 6 months. Clinical examination revealed an abdominal wall tenderness. Blood examination revealed hypochromic microcytic anemia, with hemoglobin value of 7.7 g/dL and high level of C-reactive protein. Serologic investigations including HIV infection were negative.

Contrast-enhanced computed tomography (CT) of the abdomen was performed (Fig. 1). Axial and coronal images showed an irregular circumferential wall thickening of the pylori and proximal duodenum, causing gastric stasis, associated with a second hypoattenuating circumferential non stenosing thickening of the ileal wall with aneurysmal dilatation and moderate enhancement after contrast administration.

An upper gastrointestinal endoscopy was conducted, which revealed a nonstenosing hemi circumferential burgeoning tumor of the bulb that was causing stomach stasis.

Results from anatomopathology and immunohistochemistry profile disclosed a bulbar localization of a high-grade B lymphoma compatible with Burkitt's lymphoma.

The patient underwent chemotherapy with excellent outcome, the post-treatment follow-up CT (Fig. 2) showed a complete regression of the wall thickening of the gastroduodenal and the ileal tract.

Discussion

Burkitt's lymphoma is an uncommon and severe type of B-cell non-Hodgkin lymphoma (NHL). It accounts for 1%-2% of all adult lymphomas. The gastrointestinal system, particularly the ileocecal area, is the most commonly affected extra-nodal area while the gastric site or the association of 2 sites is highly unusual with only a few occurrences in the literature [3].

Clinically, symptoms include abdominal pain, diarrhea, anemia, or gastrointestinal bleeding [3]. Indeed, Gurzu et al. [4] in their case report, a gastric lymphoma was found after performing a gastroscopy to a patient that consulted for melenas. Imaging modalities play a crucial role in correct diagnosis and therefore contribute to treatment planning. Ultrasound is especially useful in the pediatric population to evaluate a palpable mass or lymph node architecture and assessing benign versus malignant features. However, it may

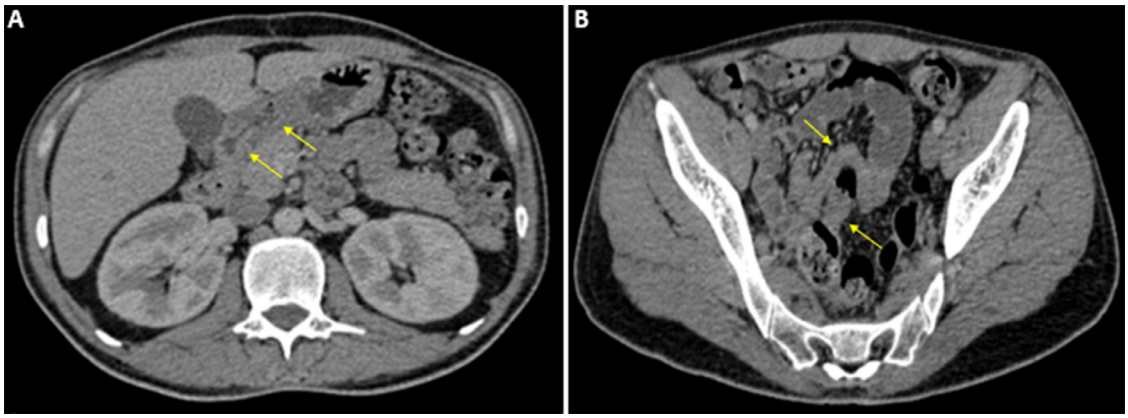

Fig. 2 – Postcontrast abdominal and pelvic CT showing a complete regression of the wall thickening of the gastro-duodenal and ileal tract, within 2 months after chemotherapy.

be limited by operator dependency and in its evaluation of deeper abdominal structures [5]. On the other hand, CT plays a crucial role in correct assessment and staging of BL, allowing for a rapid examination of the entire body. Bowel BL can manifest as a focal mass or as segmental wall thickening. Wall thickening has been described as aneurysmal, along with concomitant lumen dilation [5]. Although not usually used in an emergency situation, magnetic resonance imaging (MRI) is particularly useful in identifying tumor extension and central nervous system (CNS) involvement [5]. Moreover, PET/CT may also provide better staging than anatomic imaging such as CT. In the juvenile population, for example, PET/CT has proven superior ability to detect both nodal and extra nodal locations when compared to CT [5].

Improvements in molecular imaging using 18F-FDG PET (which is typically paired with unenhanced or contrast-enhanced CT as FDG PET/CT) have made it easier to employ imaging for lymphoma patients' response evaluation in addition to diagnostic and staging [6]. The core of treatment for BL is chemotherapy despite the fact that untreated cases have a very poor prognosis. Similar to this, surgery is typically avoided unless it is necessary due to acute complications such as intestinal obstruction [5,7].

Conclusion

Primary gastroduodenal Burkitt lymphoma is a subtype of non-Hodgkin's lymphoma that represents an aggressive and rare malignancy. The presence of two sites of involvement in Burkitt lymphoma in an immunocompetent patient is quite uncommon. Given the urgency of the treatment, when the radiologist detects an irregular wall thickening in the digestive tract, an early endoscopy with biopsy should be conducted.

Patient consent

Written, informed consent of the patient was obtained for publication of this case report.

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