

Single Case

Primary Gastrointestinal Follicular Lymphoma Exclusively Confined to the Mucosa

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Keywords

Endoscopic ultrasound · Small intestine · Endoscopy

Abstract

Follicular lymphoma (FL) is a common form of non-Hodgkin's lymphoma that rarely occurs in the gastrointestinal (GI) tract. The majority of GI FL cases are indolent in nature and are incidentally detected. They arise in the duodenum and more specifically near the ampulla of Vater. Multiple lesions are usually present upon endoscopic examination with mucosal and submucosal involvement. We hereby report the rare diagnosis of primary GI FL that presented as a solitary lesion exclusively involving the mucosal layer of the GI tract and was not located in the classic periampullary region of the duodenum, using a combination of advanced endoscopic techniques.

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Introduction

The gastrointestinal (GI) tract is the main location of extranodal lymphomas, where most occurrences are found to be non-Hodgkin lymphomas [1–3]. Primary GI lymphomas are especially uncommon, comprising 1–4% of GI malignancies [4, 5]. Secondary GI involvement is much more common and occurs in 10–60% of patients with non-Hodgkin disease [3, 6, 7]. Primary GI lymphomas most commonly occur in the stomach followed by the small intestine, colon, rectum, and esophagus [8, 9]. The epidemiology of primary GI lymphomas varies widely. In the USA, most primary GI lymphomas are found in the stomach where they are most

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frequently either an extranodal marginal zone B cell lymphoma of mucosa-associated lymphoid tissue or a diffuse large B cell lymphoma [10]. In the Middle East, primary small intestinal lymphoma comprises 75% of primary GI lymphomas [11]. In Africa, the incidence of Burkitt lymphoma is 50 times higher than that in the USA [12].

Follicular lymphoma (FL) is a common form of non-Hodgkin's lymphoma with 2.6 new cases per 100,000 persons annually [13]. FL of the GI tract is especially rare, comprising 1–3% of all primary GI lymphomas [14]. The majority of cases are indolent in nature and incidentally detected [15, 16]. The duodenum is the most commonly affected site within the GI tract of mostly periampullary origin [16, 17]. Endoscopic findings include multiple, or less commonly solitary, white submucosal nodules [16–18]. We hereby report a rare case of primary GI FL that presented as a solitary lesion exclusively involving the mucosal layer of the GI tract and not located in the classic periampullary region of the duodenum, diagnosed using a combination of advanced endoscopic techniques.

Case Presentation

A 58-year-old woman with a past medical history of acid reflux presented with indigestion and abdominal bloating for 3 months. After an unremarkable initial work up of a complete blood count and comprehensive metabolic profile, an esophagogastroduodenoscopy (EGD) was performed and revealed a 1.5-cm frond-like lesion in the second portion of the duodenum along the lateral wall (shown in Fig. 1). Biopsy was obtained, and pathology showed a lymphoid infiltrate with prominent germinal centers raising the possibility of a lymphoproliferative disorder. She underwent a second EGD with endoscopic ultrasound which revealed a 1.5-cm sessile polypoid lesion in the same location (shown in Fig. 2). The lesion was noted to be limited to the mucosa with normal appearance of all the other duodenal wall layers. No abnormal appearing lymph nodes were seen surrounding the examined portion of the duodenum. The lesion was removed by endoscopic mucosal resection, and histologic examination showed frequent intramucosal follicular aggregates of lymphocytes

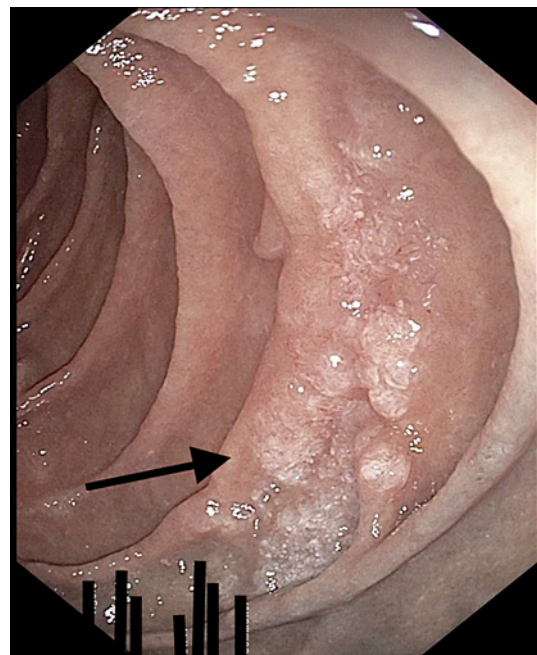


Fig. 1. Duodenoscopy revealing a frond-like lesion in the second portion of the duodenum along the lateral wall (black arrow).

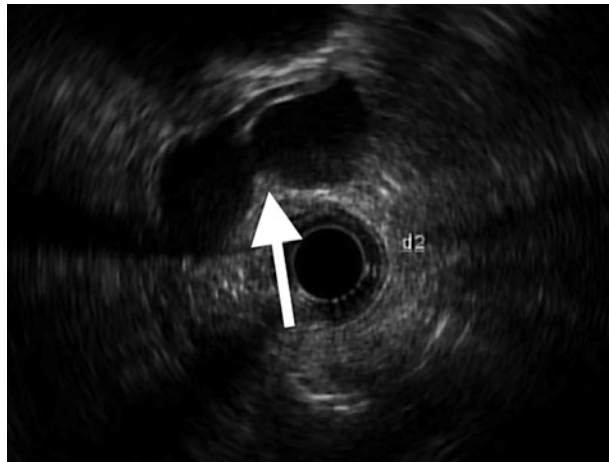


Fig. 2. Endoscopic ultrasound revealing a 1.5-cm sessile polypoid lesion in the same location (white arrow).

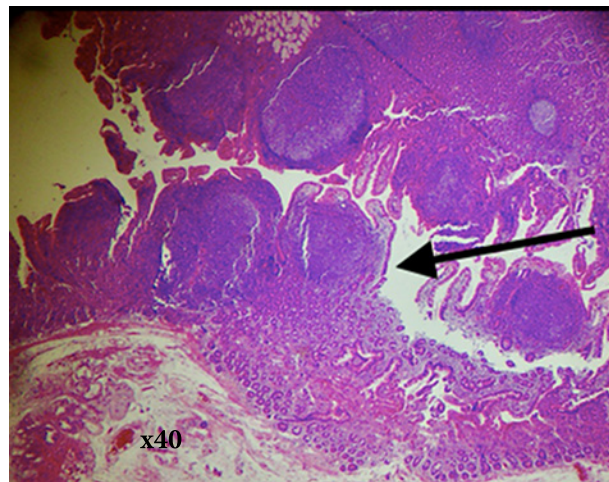


Fig. 3. Follicular aggregates exclusively confined to the mucosa (black arrow).

(shown in Fig. 3) that stained for pan B-cell antigens CD20 and CD79a. Numerous associated T cells were positive for CD3 and CD5. Cyclin D1 was negative and CD10 was positive consistent with follicular center cells, and follicles were positive for BCL-2 consistent with neoplastic follicles. The neoplastic follicles were entirely confined to the mucosa (shown in Fig. 3). This pattern was consistent with FL (shown in Fig. 4). Body imaging including a computed tomography scan (shown in Fig. 5) of the abdomen and magnetic resonance imaging of the spine were obtained and revealed no evidence of metastatic disease. Diagnosis was consistent with indolent grade 1–2 FL stage IE. The patient’s symptoms resolved post-resection. She underwent a repeat EGD 6 and 18 months later that showed no recurrence of lymphoma.

Discussion

GI FL predominantly affects middle-aged females with a female to male ratio of approximately 2:1 [18]. Duodenal FL is rare with estimated diagnosis occurring in 1 out of every 3,000–7,000 EGDs [14, 17–19]. The majority of GI FL cases occur in the duodenum, are incidentally detected, and carry a favorable prognosis. FL of the duodenum is a particularly indolent disease that rarely spreads even without treatment [15, 20]. Patients are usually

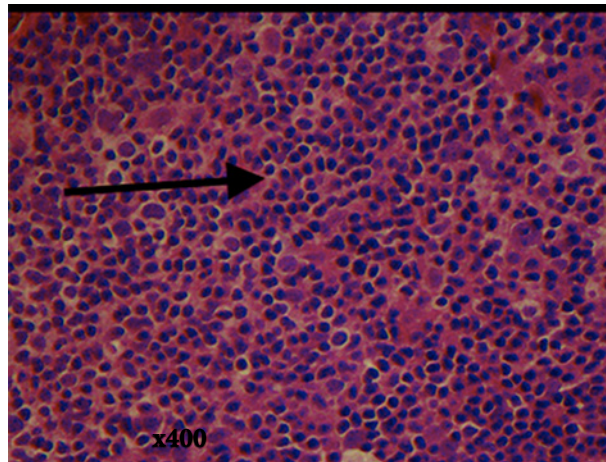


Fig. 4. High-power field of neoplastic cells (black arrow).

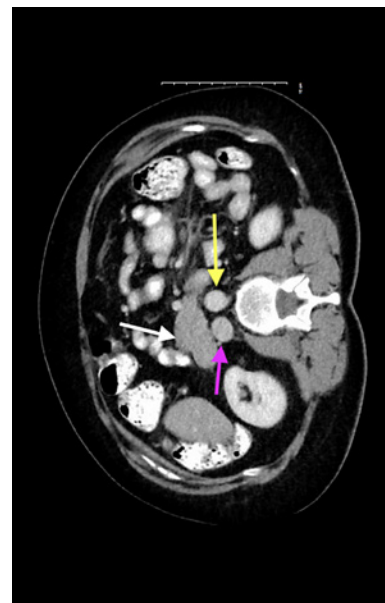


Fig. 5. Computed tomography of the abdomen and pelvis revealing no metastatic disease (white arrow – duodenum, pink arrow – inferior vena cava, yellow arrow – descending aorta).

asymptomatic. When present, the most common symptom is abdominal pain [11]. Less common symptoms include GI bleeding and diarrhea [11]. Patients usually undergo CT imaging and/or positron emission tomography as part of their disease evaluation where FL has a variable fluorodeoxyglucose avidity. Endoscopic evaluation plays a major role in diagnosis. Endoscopic findings of GI FL include mucosal nodules, polyps, or plaques that are typically white in color [14–17, 19]. A large proportion of patients have multiple lesions detected on endoscopy throughout their GI tract [19]. Our patient uniquely had a solitary lesion with exclusive mucosal involvement that was not located in the classic periampullary region of the duodenum, an exceedingly rare phenomenon. Histopathologic features include lymphoid cells that aggregate in the intestinal mucosa and/or submucosa [15, 17]. Lymphoid cells can extend into the villi but rarely infiltrate deeper tissue with no marginal zone differentiation observed. Isolated mucosal involvement such as in our case is less common [21]. Endoscopic ultrasound can assess the size and depth of the lesion as well as detect locoregional spread [22].

Management options in GI FL include watchful observation, radiation therapy, immunotherapy, or chemotherapy [18]. Patients with stage I disease commonly achieve remission or maintain stable disease regardless of the treatment option chosen [18, 23–25]. Interestingly, primary FL found at sites other than the GI tract have variable prognoses likely due to differing mutations and immunologic environments [16]. In conclusion, primary GI FL is an especially rare entity that often presents with no or mild nonspecific symptoms. Thorough evaluation including abdominal imaging and various endoscopic techniques with a high degree of suspicion is essential for diagnosis of this indolent and potentially elusive disease. Furthermore, primary duodenal FL ought to be distinguished from systemic FL due to differing prognoses and management strategies.

Statement of Ethics

Ethics approval was not required for this study in accordance with local/national guidelines. Written informed consent was obtained from the patient for publication of the details of their medical case and any accompanying images.

Conflict of Interest Statement

All authors have no conflicts of interest to declare.

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Author Contributions

Amr Dokmak performed the literature search, interpreted the data, and drafted the manuscript. Amr Radwan performed the literature search and drafted the manuscript. Sandeep Krishnan revised the manuscript for critically important intellectual content and gave final approval of submitted version.

Data Availability Statement

All data generated or analyzed during this study are included in this article. Further inquiries can be directed to the corresponding author.

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