Primary Gastric Lymphoma with Florid Granulomatous Reaction

Dina El Demellawy¹, Carmen Otero², Jasim Radhi¹

¹) Department of Pathology and Laboratory Medicine; ²) Department of Radiology, McMaster University, Hamilton, Ontario, Canada

Abstract

Epithelioid cell granulomas are more commonly seen in Hodgkin’s disease and T cell lymphomas. Rarely florid granulomatous reaction with necrosis may be a prominent feature in lymphoma. To the best of our knowledge, a total of 11 cases of Burkitt’s lymphoma with florid necrotizing granulomas have been reported in the English literature. None of these cases have previously had the stomach involved. Here we report a gastric Burkitt’s lymphoma with florid granulomatous reaction diagnosed following a partial gastrectomy. The initial gastric biopsy showed granulomatous gastritis but the radiological and endoscopic appearance was that of a gastric stromal tumour. We conclude that in the presence of a mass lesion, the finding of epithelioid granulomas should warrant re-biopsy to establish an accurate diagnosis and exclude a concurrent malignant process. Hence, major surgery and postoperative complications can be avoided and appropriate treatment regimen can be initiated.

Key words


Introduction

Granulomatous gastritis is rarely the primary process but more often is secondary to other disorders. In most cases, the morphologic appearance of granulomas does not provide useful clues as to their cause. Possible causes of gastric mucosal granulomas include infection, foreign body, immune mediated etiologies, carcinomas and lymphomas. Burkitt’s lymphoma is the most prevalent type of lymphoma in children. In North America it is encountered more frequently in males than females [1]. Rarely necrotizing granulomatous inflammation that occurs in association with lymphoma may be the predominant component causing diagnostic error. The treatment of Burkitt’s lymphoma is represented by one of the intensive chemotherapy protocols for non-Hodgkin’s lymphoma [2]. Reduction of the tumour mass by surgical resection has been shown to be of value in a few cases. Bone marrow and central nervous system involvement by lymphoma and a high LDH serum levels are recognized as poor prognostic factors [2]. This report emphasizes the fact that the presence of granulomatous inflammation in a mass lesion from the stomach should trigger further investigation, in particular a repeat of the biopsy in order to exclude any underlying lymphomatous malignant process, before the consideration of major surgery.

Case report

The patient was a 12 year old girl presenting with progressive, insidious abdominal pain, night sweat and easy fatigability of two months duration. Endoscopy revealed two polypoidal lesions seen along the greater curvature of the stomach with umbilicated appearance. The larger lesion had an ulcerated surface. The surrounding mucosal folds appeared thickened. CT scan with contrast of the abdomen revealed bilobulated hypoattenuating mass lesion measuring 3 cm in transverse diameter with central ulceration. The lesion showed a density similar to that of a soft tissue lesion and poor enhancement with contrast (Fig. 1). The rest of the gastric wall appeared normal. No other abnormalities in the chest, abdomen or pelvis were noted. A biopsy was performed from the larger nodule and revealed granulomatous inflammation only. Because of the high clinical suspicion of a gastric stromal tumour, a distal partial gastrectomy was performed. Grossly the stomach showed two nodular masses, the larger measured 4 cm in maximum dimension and the smaller 2 cm, both with ulcerated surfaces (Fig. 2). Slicing revealed ulcerated firm grey polypoid tumour lesions. Microscopically, both lesions were lymphoid tumours.
These were composed of medium sized round cells with coarse chromatin and multiple basophilic nucleoli. Frequent, brisk mitoses, apoptosis and interspersed tangible body macrophages were present (Fig. 3). In addition florid foci of epithelioid granulomata with and without necrosis were identified, in places forming the main pathological feature (Inset) (Fig. 4). By immunohistochemistry the cells were positive for CD20, CD79a, BCL6 and Ki67 and negative for CD3, CD43, CD10, TdT, BCL2, CD1a, CD117, S100 and EBV. C-myc using interphase FISH analysis was positive. Special stains using Zeil Nelson, Grocott and Gemisa were negative. Further investigations for lymphoma staging were performed. Ultrasound revealed splenomegaly and enlarged iliac lymph nodes. Accordingly the patient was staged as stage III and received adjuvant chemotherapy including cyclophosphamide, vincristine, doxorubicin and intrathecal methotrexate. Chemotherapy was very well tolerated with no evidence of tumour lysis syndrome. Follow up for 2 years revealed no evidence of recurrence and endoscopy with gastric biopsies were negative for malignancy.

**Discussion**

The gastrointestinal tract is the most common extranodal site of lymphomas, accounting for up to 20% of all non-Hodgkin’s lymphomas. The stomach is involved most often followed by the small intestine and the colon. Ileocecal junction is the site of predilection in children [3]. Burkitt’s lymphoma though rare, is more frequently encountered in pediatric and young adults. It is a highly aggressive and rapidly growing tumor but potentially curable if treated early. The tumor is generally bulky and exophytic, and may present with large mucosal gastric folds [4]. Three clinical variants of Burkitt’s lymphoma are described; endemic, sporadic and immune deficiency associated. Epstein-Barr virus is found in a variable proportion of cases and recently a causative link with H. pylori has been suggested [5]. In rare tumors, including malignant lymphomas, epithelioid granulomas may be encountered [6].

The literature includes 11 cases of Burkitt’s lymphoma with epithelioid granulomas [7]. To the best of our knowledge none of these cases were reported as located in the stomach. Necrotizing granulomatous reaction is rarely described in lymphoma and no infectious etiology was identified in these granulomas. Granulomas can be due to a host response to an undetected infectious agent or due to aberrant cytokine production by tumor cells (Table 1) [8]. The latter is supported by the presence of numerous reactive lymphocytes intermingled with the lymphoma cells. These lymphocytes stimulate the activation of monocytes with formation of granuloma. Granuloma can also be formed in reaction to necrosis and apoptosis within tumour. In general, granuloma presence represents the host reaction to provocation by the tumour, which may be equivalent or denoting a competent
alert host immune system. The current case showed gastric biopsy with necrotizing granulomatous inflammation, which was negative for fungal or acid-fast bacilli. The differential diagnosis of granulomatous inflammation includes infection, foreign body reaction, sarcoidosis, Crohn’s disease, idiopathic isolated granulomatous gastritis, immune mediated etiology and malignancies. The specific diagnosis depends on the clinical history, histologic appearance, and evaluation of other gastrointestinal and visceral lesions and the use of special stains. Due to the radiological and endoscopical findings, a stromal gastric tumor was suspected and this was followed by surgical excision. Partial gastrectomy revealed Burkitt’s lymphoma with florid granulomatous reaction. The review of the biopsy did not show features of lymphoma.

We conclude that this case demonstrated the need for a second biopsy to establish the diagnosis since more recent shorter and intense therapy appears to be associated with superior event free survival for children and adolescents with Burkitt’s lymphoma [9]. Clinicians and pathologists need to be aware of such combination due to the fact that florid granulomatous reaction may be the predominant pathological finding in cases of lymphoma.

References