


## CASE REPORT

### Aggressive lymphoma presenting as dysphagia: A rare cause of dysphagia

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#### Key Clinical Message

Diffuse large B-cell lymphoma (DLBCL) can involve the esophagus from local spread, distant metastasis and very rarely can also be the primary site. Once DLBCL is diagnosed, caution should be exercised in further evaluation for local treatments of sites like adnexal masses as was seen in this case; sometimes it is DLBCL at atypical sites.

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#### Keywords

Adnexal metastasis, diffuse large B-cell lymphoma, dysphagia, RCHOP.

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### Case Presentation

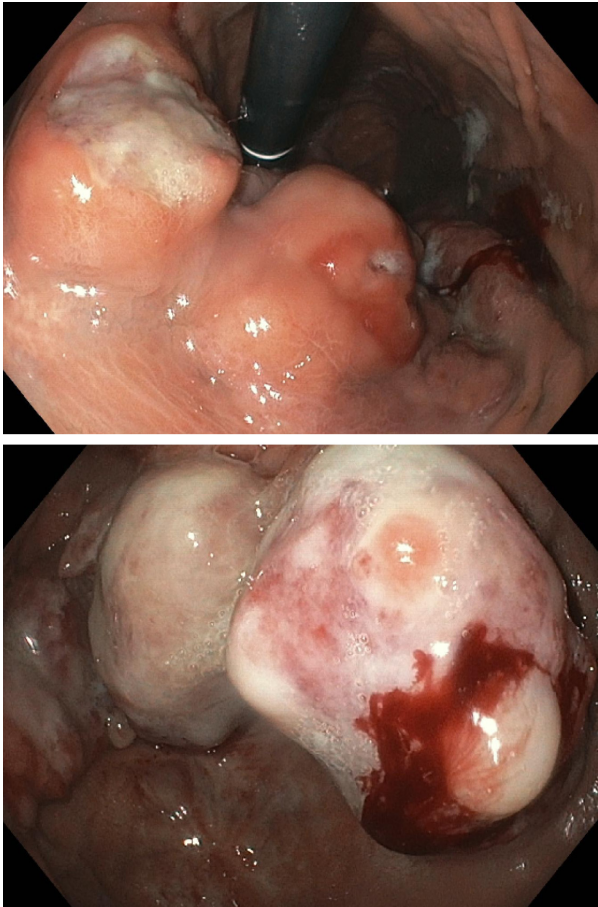
A 60-year-old lady with no past medical history was evaluated for a 3-month history of solid-food dysphagia. She described the dysphagia as progressive with particular difficulty when consuming meats and breads. She felt food was getting lodged mid-neck. In addition, she had accompanied unintentional 20-pound weight loss over a 3-month period. She was otherwise healthy, and she denied any symptoms of fevers, chills, or night sweats.

Her family history was remarkable for breast cancer. Her sister was diagnosed with breast cancer at age 40. The daughter of this sister (her niece) was diagnosed with breast cancer at age 38. Her brother's daughter (another niece) was also diagnosed with breast cancer at age 36. Finally, the patient's daughter was diagnosed with breast cancer at age 36. Genetic testing was performed on her daughter which confirmed a BRCA mutation (BRCA1 Q563X) which is a truncated mutation.

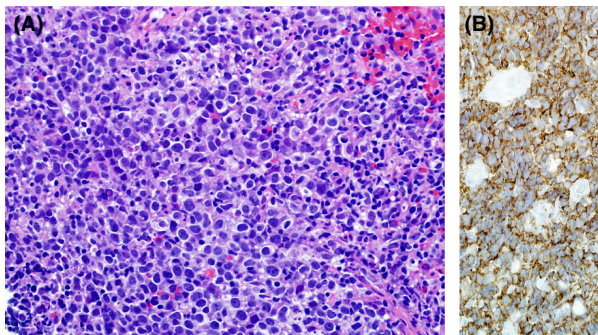
Physical examination was unrevealing. Laboratory tests showed no evidence of anemia and mild hypoalbuminemia, albumin 3.3 g/dL. *Helicobacter pylori* stool antigen was positive; HIV 1/2 serum antibody test was negative.

An upper endoscopy performed revealed a large circumferential, ulcerated, multilobar esophageal mass at the gastro-esophageal junction and a several large multilobar ulcerative lesions were seen in the gastric fundus on retroflexion (Fig. 1). There was also a large 2.5 cm clean-based gastric ulcer on the lesser curvature of the stomach near adjacent masses.

Biopsy results showed an aggressive, high-grade B-cell lymphoma, Ki67 index was high at 100%. The expression for CD10, BCL6, and MUM1 in neoplastic cells was consistent with germinal center B-cell like (GCB) subtype of diffuse large B-cell lymphoma (DLBCL) without any evidence of EBV infection in the tumor (Fig. 2). Further FISH studies were positive for BCL-2 gene rearrangement in 31% neoplastic cells and negative for BCL-6 and MYC



**Figure 1.** Endoscopic findings of gastric lesions.



**Figure 2.** Hematoxylin and eosin stained histologic section of esophageal/gastric biopsy demonstrates sheets of large lymphoid cells (Panel A). Immunohistochemical stain using CD20 antibody shows bright expression of CD20 by large lymphoid cells (Panel B) supportive of the diagnosis of diffuse large B-cell lymphoma.

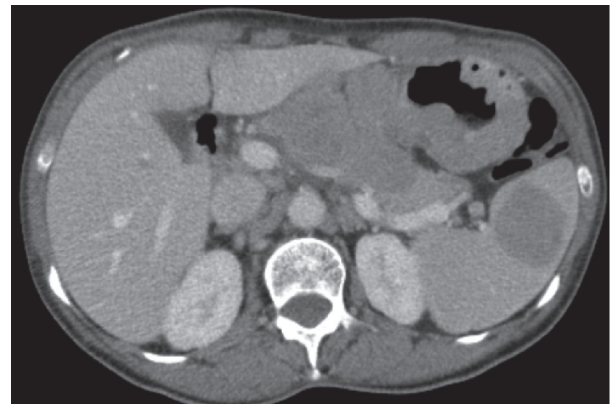
thus negative for “double hit” lymphoma (DHL). DHLs are defined as a chromosome breakpoint affecting, affecting the MYC locus in combination with another recurrent breakpoint, usually *bcl-2*, although *bcl-6*/MYC-positive

DHLs or BCL-2/BCL-6/MYC triple hit lymphomas (THLs) may also be observed [1]. Most of the studies focused on DHLs and THLs have concluded that treatment with conventional chemotherapy consisting of rituximab plus cyclophosphamide, doxorubicin, vincristine, and prednisone (R-CHOP) is not the best therapeutic option in these cases [2].

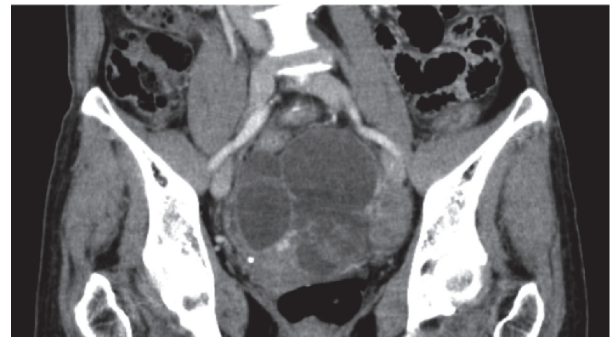
### Clinical course

After review of the results of her biopsy, she was referred to an oncology specialist for evaluation and treatment of DLBCL. As a part of staging, computed tomography (CT) of the abdomen and pelvis with intravenous contrast obtained demonstrated not only thickening of the gastro-esophageal junction and proximal stomach with large volume abdominal adenopathy and a 5.6 cm splenic mass but also two cystic and solid pelvic masses, one measuring 8.5 × 7.0 cm and the other 3.7 × 3.2 cm (Fig. 3). A subsequent positron emission tomography (PET) scan revealed a markedly hypermetabolic gastro-esophageal

(A)



(B)



**Figure 3.** CT abdomen/pelvis. (A) Sagittal view showing extensive abdominal lymphadenopathy. (B) Coronal view showing solid pelvic masses.

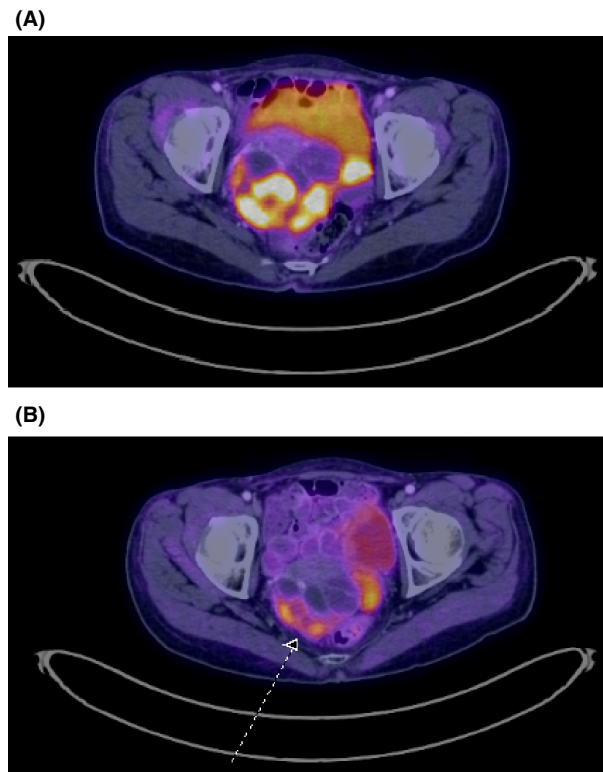
junction and gastric wall thickening with thoracic and bulky abdominal hypermetabolic lymphadenopathy and splenic mass. There was also rim hypermetabolic bilateral cystic adnexal-region lesions. Patient at this time was staged to be stage IV DLBCL based on ann arbor staging.

Given the concerning findings of bilateral rim enhancing lesions initially the thought was, this patient could have a primary ovarian malignancy in addition to DLBCL. However, she was not a good candidate to undergo intubation needed for laparotomy because of bulky thoracic adenopathy and associated high surgical mortality risks. So a decision was made to proceed with chemotherapy for DLBCL and see whether adenopathy improves and postpone the pelvic surgery for the time being. We proceeded with curative intent intense chemotherapy with R-CHOP every 21 days (rituximab 375 mg/m<sup>2</sup>, cyclophosphamide 750 mg/m<sup>2</sup>, adriamycin 50 mg/m<sup>2</sup>, vincristine 1.4 mg/m<sup>2</sup>, and prednisone 100 mg × 4 days) based on NCCN recommendations for stage IV DLBCL [3]. After two cycles of RCHOP patient underwent a repeat PET scan that showed global improvement including improvement in the adnexal masses, after discussion on tumor board it was decided to continue only chemotherapy as adnexal masses were deemed to be primary lymphoma surrounding ovarian cysts (Fig. 4). Patient is currently undergoing chemotherapy for DLBCL and responding well to treatment both radiographically and clinically.

## Discussion

This patient had initial symptoms of weight loss and solid-food dysphagia that were evaluated with upper endoscopy, computerized tomography (CT), and PET scans that identified an aggressive B-cell lymphoma with esophageal, gastric, and adnexal involvement.

Although this patient was diagnosed in an atypical fashion on endoscopy, the PET scan showed diffuse abdominal, thoracic adenopathy in addition to splenic involvement. The primary source of these patients DLBCL was most likely lymphoid in nature. Extranodal involvement of the GI tract is more common in non-Hodgkin's as compared to Hodgkin's lymphoma and occurs in approximately 10–30% patients [4]. Stomach is the most frequently identified primary site (65–75%), and primary esophageal involvement is extremely rare and almost always secondary from the stomach or mediastinal lymph nodes as probably was the case in this patient [5, 6]. Dawson et al. proposed the following criteria for diagnosis of primary DLBCL of GI tract: (i) absence of peripheral lymphadenopathy at the time of presentation; (ii) absence of mediastinal lymphadenopathy; (iii) normal total white blood cell count; (iv)



**Figure 4.** PET scan. (A) FDG avid pelvic masses prior to chemotherapy. (B) Repeat scan after two cycles of RCHOP chemotherapy.

predominance of bowel lesion at the time of laparotomy with only lymph nodes obviously affected in the immediate vicinity; and (v) no lymphomatous involvement of liver and spleen [7].

In addition to the uncommon presentation of dysphagia in this patient, we also observed bilateral pelvic partly cystic masses with rim enhancing solid component. With her family history of BRCA positivity, there was also a concern for a primary ovarian malignancy in addition to DLBCL. A patient in this situation would normally have undergone an open tissue biopsy but her bulky lymphadenopathy precluded intubation. This decision was fortunate in this case as after two cycles of chemotherapy for DLBCL her pelvic masses greatly improved. In fact, the 6-week follow-up PET scan showed a significant reduction in size of her cystic adnexal masses (Fig. 4B). This sort of response would have been highly unlikely for a primary ovarian malignancy. Similar to primary GI lymphoma, primary ovarian lymphoma is extremely rare [8]. The splenic involvement on the PET scan along with diffuse mediastinal adenopathy suggests that the likely primary site was lymphoid in nature with a very uncommon pattern of spread that included esophagus, stomach, and bilateral adnexa. The primary treatment for lymphoma is

chemotherapy, and luckily, this patient because of her diffuse adenopathy was treated with chemotherapy and spared a morbid procedure like laparotomy.

## Conflict of Interest

None declared.

## Authorship

DC: prepared manuscript and provided images. PB: prepared manuscript. MAV: provided images and pathology description. VK: helped with literature review and edited the final manuscript. CL: helped with literature review and contributed to the manuscript. DQ: guided the authors in writing the manuscript and proof read the final manuscript.

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