No Way Out

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The most common extra-nodal site for lymphoma is the stomach. Primary chemotherapy has recently replaced surgery as the preferred initial method of treatment for gastric lymphomas. Gastric outlet obstruction is a rare but serious side effect of chemotherapy for the treatment of gastric lymphomas. Here, we highlight the diagnosis of this uncommon side effect and the use of endoscopic balloon dilatation to treat it.

CASE REPORT

A 47-year-old male without significant past history presented, with several weeks of persistent vomiting and a 20 pound weight loss. Physical exam was unremarkable. Computed tomography (CT) of the abdomen showed marked gastric antral wall thickening with associated lymphadenopathy. Endoscopy demonstrated diffusely friable, ulcerated antral mucosa (Figure 1). Biopsy confirmed diffuse large B cell lymphoma. Chemotherapy led to initial improvement in symptoms. After two rounds, however, he presented again with persistent vomiting. Repeat CT scan revealed high-grade gastric outlet obstruction. Notably, the previous antral wall thickening and lymphadenopathy had resolved, indicating he was responding to the chemotherapy. On repeat upper endoscopy, the pyloric opening could not be identified, but a large ulcer was found in the antrum (Figure 2). After a few minutes of observation, we noticed bile flowing from one area of the ulcer and passed a guidewire through the stricture into the duodenum, confirmed via fluoroscopy (Figure 3). A through-the-scope balloon was inserted and inflated to 8mm and a double pig tailed biliary stent was placed to ensure identification of the stricture opening for further balloon dilatations (Figure 4). Repeat endoscopy two days later showed the stent in place. We performed an 18mm balloon dilatation (Figure 5) and passed the endoscope into the duodenum (Figure 6). Instead of repeated endoscopic dilatations, the patient opted for a gastrojejunostomy with more immediate relief of his symptoms and was able to resume his chemotherapy.

DISCUSSION

Prior to the introduction of endoscopic pyloric balloon dilatation in 1982 by Benjamin et al, surgery was the first-line treatment for benign gastric outlet obstruction. However, more recently, balloon dilatation has emerged as the preferred initial treatment in most patients and in those at high risk for surgery. Multiple early studies showed good short-term success rates (67–80%)²,³. Long-term results, however, varied widely (16%–70%)⁴,⁵.

Factors associated with poor outcome include: need for >2 courses of balloon dilatation to relieve obstruction, H. pylori infection, and continued use of non-steroidal anti-inflammatories (NSAIDs)⁶,⁷. Because those earlier studies did not identify and address the underlying cause of benign gastric outlet obstruction, it is not surprising they found poor response rates for endoscopic therapy. With the eradication of H. pylori and the discontinuation of NSAIDs, success rates can be 100% up to 43 months of follow up⁸.

The stomach is the most common site for extra-nodal Non-Hodgkin’s Lymphoma, and chemotherapy

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has replaced surgery as the initial treatment of choice for gastric lymphoma. Gastric perforation and bleeding are two well-documented complications of chemotherapy and occur around 5%9. However, there are surprisingly few reports of gastric outlet obstruction following chemotherapy for gastric lymphoma. Spectre et al, in 2006, looked at post chemotherapy complications requiring surgery in 78 patients with primary gastric lymphoma undergoing chemotherapy. They reported an 11% incidence of bleeding, as well as an 11% rate of gastric outlet obstruction, and no perforations. Gastric outlet obstruction occurred relatively late during the course of chemotherapy (median of 4 courses). Of those patients with gastric outlet obstruction, 38% were treated successfully with conservative management, 38% eventually required surgery. In 75% of the surgical specimens there was no evidence of active lymphoma, suggesting that gastric outlet obstruction is

Figure 1. Gastric antral lesion on initial endoscopy.

Figure 2. Large antral ulcer after two courses of chemotherapy.

Figure 3. Insertion and placement of guidewire and catheter through pyloric stricture into duodenum, confirmed on fluoroscopy.

Figure 4. Placement of biliary stent through stricture.
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seen mostly in patients responding to chemotherapy\textsuperscript{10}. It is hypothesized that the tumor necroses with subsequent inflammation, healing and fibrosis, can lead to severe pyloric strictureing and gastric outlet obstruction.

In conclusion, gastric outlet obstruction is a rare, but serious, complication of chemotherapy for gastric lymphoma and balloon dilatation appears to be a safe and effective treatment. Future goals should focus on early identification and endoscopic treatment of this complication

References
