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Gastric mucosa-associated lymphoid tissue lymphoma in pregnancy: diagnostic and therapeutic challenges: A case report

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Abstract

Introduction: Gastric mucosa-associated lymphoid tissue (MALT) lymphoma is exceedingly rare in pregnancy and poses unique diagnostic and therapeutic challenges. Its presentation may be nonspecific, often mimicking common gastrointestinal disorders, leading to delayed diagnosis and management.

Case: This is a rare case of gastric MALT lymphoma presenting as upper gastrointestinal bleeding (UGIB) in a 44-year-old woman in her second trimester of pregnancy. The patient was initially treated for bleeding peptic ulcer disease; however, endoscopic evaluation revealed an ulcerating gastric mass along the greater curvature, initially suspected to be gastric adenocarcinoma. Histopathologic examination of the endoscopic biopsy was inconclusive for malignancy. Persistent anemia due to ongoing bleeding necessitated exploratory laparotomy and radical total gastrectomy with D2 dissection, Roux-en-Y esophagojejunostomy, tube jejunostomy, and JP drain placement. Definitive histopathology confirmed gastric MALT lymphoma. The patient was subsequently advised to undergo chemotherapy 4–6 weeks postoperatively.

Conclusion: This case highlights the diagnostic dilemma and therapeutic complexity of managing gastric MALT lymphoma during pregnancy, where clinical decisions must balance fetal safety and maternal curative intent. Early recognition, multidisciplinary coordination among obstetric, surgical, oncologic, and pathology teams, and individualized management are essential for optimizing outcomes. Awareness of this rare presentation can aid clinicians in maintaining a high index of suspicion for gastric lymphoma in pregnant patients presenting with atypical or refractory upper gastrointestinal bleeding.

Keywords: *Gastric MALT lymphoma, Non-Hodgkin lymphoma, Pregnancy, Upper gastrointestinal bleeding*

Introduction

Gastric mucosa-associated lymphoid tissue (MALT) lymphoma is an indolent subtype of non-Hodgkin lymphoma (NHL) derived from marginal zone B cells of mucosa-associated lymphoid tissue in the stomach.[1] Lymphoma during pregnancy is rare, with an estimated incidence of 1 in 6,000 deliveries or fewer.[2] Among these, Hodgkin lymphoma is most common, while NHL represents a minority of cases.[3] Indolent lymphomas such as gastric MALT lymphoma are exceedingly uncommon in pregnancy, with limited published data.[4]

The clinical presentation of gastric MALT lymphoma is often nonspecific, mimicking gastritis or peptic ulcer disease. Physiologic changes during pregnancy can mask or mimic constitutional symptoms, delaying diagnosis.[2] Diagnostic work-up may also be constrained due to fetal safety concerns, limiting imaging and biopsy options. As a result, management requires balancing maternal therapeutic needs and fetal well-being through a multidisciplinary approach.[5]

This is a rare case of gastric MALT lymphoma manifesting as upper gastrointestinal bleeding (UGIB) in a 44-year-old woman in her second trimester. This case report aims to highlight the diagnostic and therapeutic challenges of managing gastric MALT lymphoma during pregnancy.

Case Presentation

A 44-year-old Gravida 7 Para 6 woman at 14 weeks and 4 days of gestation presented with multiple episodes of hematemesis and melena. She reported progressive dyspnea and fatigue but denied weight loss, fever, abdominal pain nor anorexia. Her medical history included total thyroidectomy for benign goiter (2013). She denied smoking, alcohol, or NSAID use. All previous pregnancies were uneventful.

Prior Work-up

Ten months prior, the patient presented with recurrent melena requiring blood transfusion for anemia; upper endoscopy demonstrated multiple bleeding gastric ulcers with negative Helicobacter pylori testing. Symptoms initially resolved with proton pump inhibitor therapy. Two months before the current admission, she experienced recurrent melena accompanied by hematemesis and was managed as bleeding peptic ulcer disease, with only transient symptom resolution.

Current Admission

The patient was admitted for recurrent melena and hematemesis. She was pale with mild tachycardia (116 bpm) and tachypnea (24 cpm), and hemoglobin was 10 g/dL, consistent with compensated blood loss; fetal heart tones were 140–150 bpm.

Given her pregnancy and hemodynamic stability, MRI was performed first to guide management, particularly when malignancy or deep wall pathology was suspected. Imaging revealed circumferential gastric wall thickening along the greater curvature (2.8 × 9.4 cm) with restricted diffusion. Subsequent endoscopy for tissue diagnosis demonstrated an ulcerating, firm gastric mass with mucosal erosions and poor distensibility; however, histopathology showed only chronic gastritis without malignancy or Helicobacter pylori.

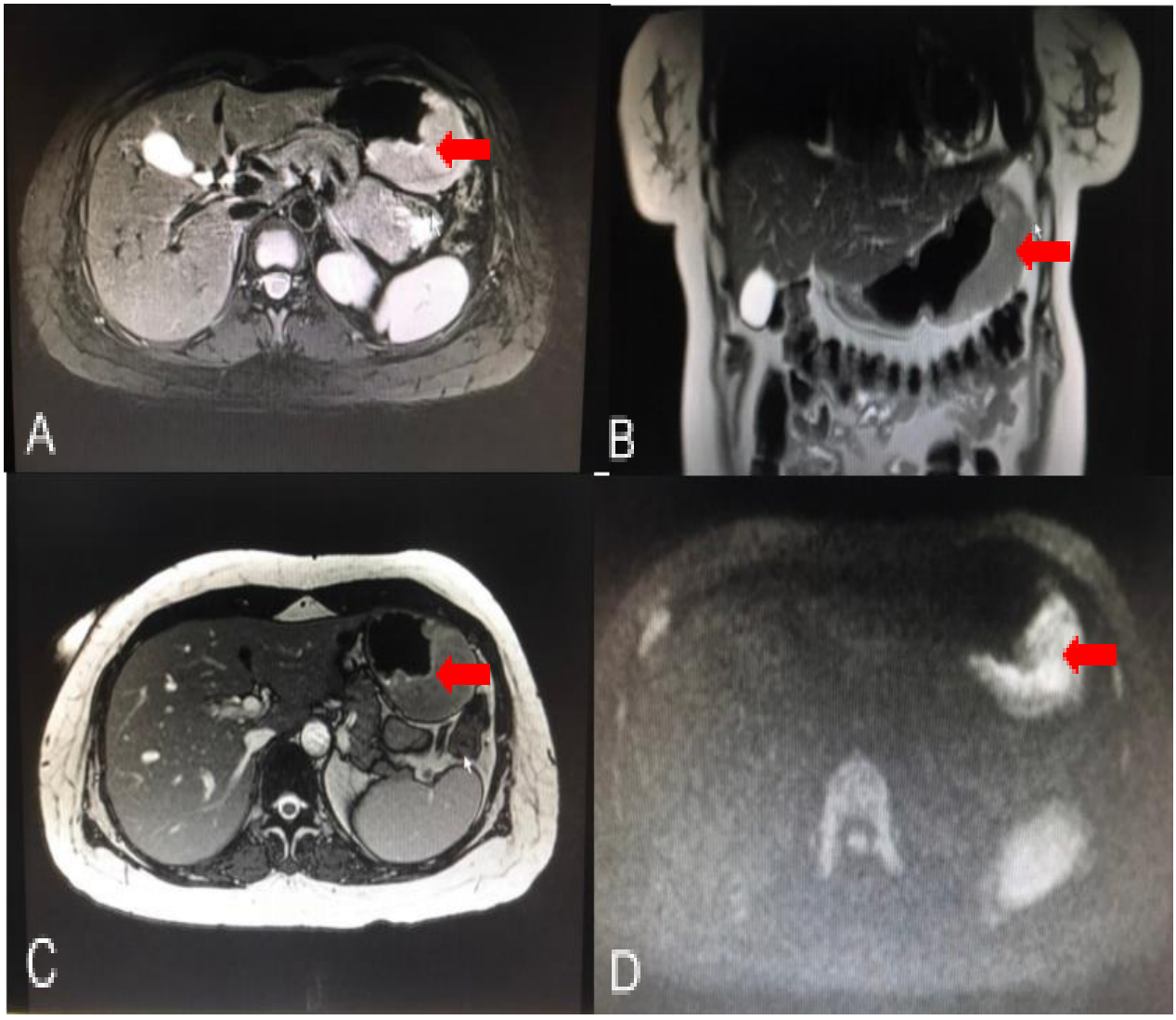

Figure 1. MRI of the upper abdomen showing a wall thickening (red arrows) along the greater curvature of the proximal body of the stomach measuring 2.8 cm in width and 9.4 cm in length with restricted diffusion on DWI studies (D).

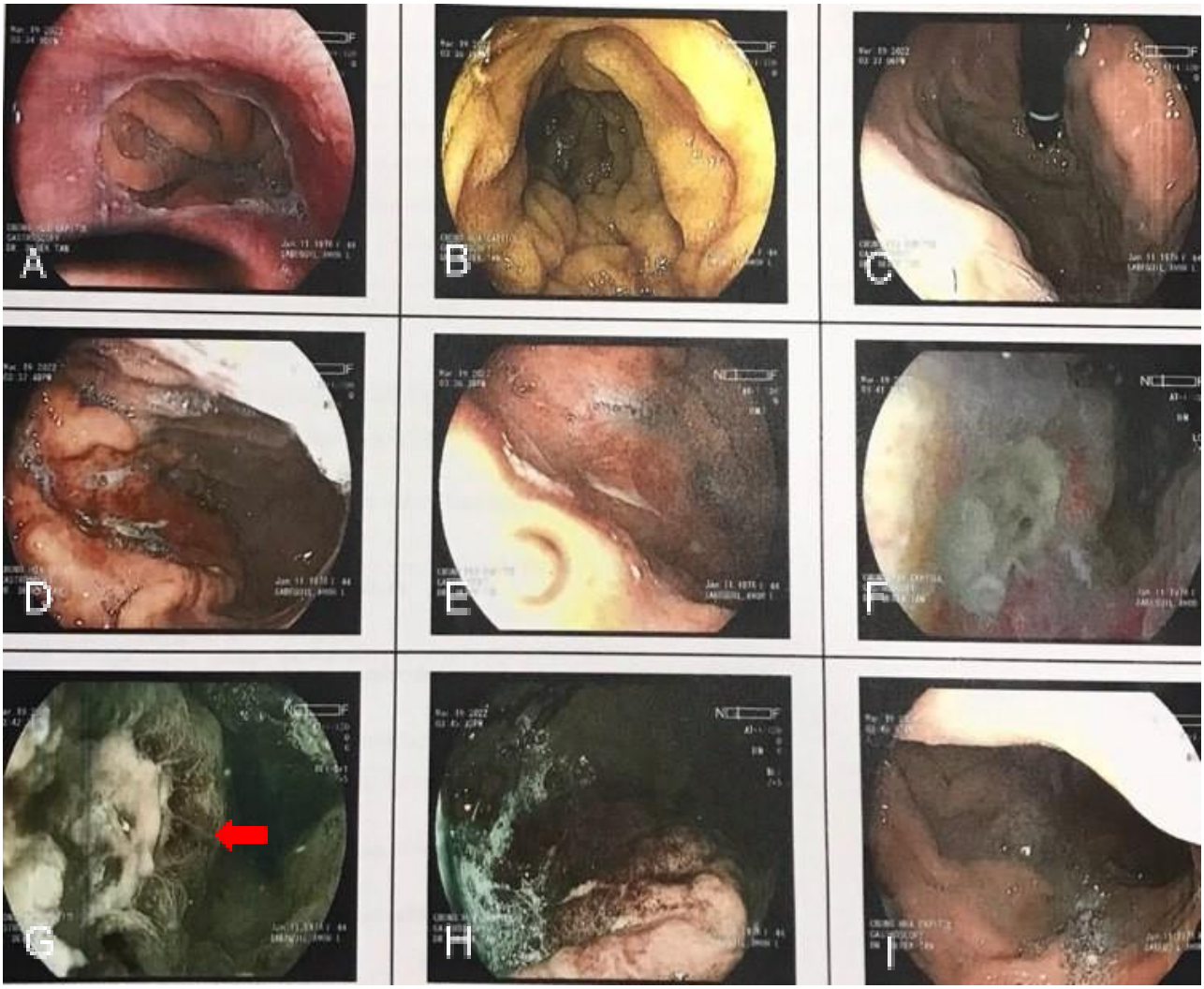

Figure 2. Esophagogastroduodenoscopy showing an ulcerating gastric mass with pigment spot seen at the proximal to distal gastric body (G, red arrow), gastric folds noted to have erosions and was noted to be hard (B,C,D) during biopsy. The gastric body did not fully distend upon insufflation (H). Proximal gastric body (A). Close up of thickened gastric folds (E). Ulcerated area with slough of the ulcerating gastric mass (F). Narrowed lumen of the gastric body with persistent fold thickening (I).

Despite supportive care, the patient developed recurrent melena and transfusion-dependent anemia (three units PRBC). Malignancy, most likely gastric adenocarcinoma, was suspected. A multidisciplinary team, including internal medicine, surgery, obstetrics, and anesthesia, recommended surgical resection for both diagnostic and therapeutic purposes.

Surgical Intervention

Intraoperative findings revealed a 10 × 8 cm ulcerating mass along the greater curvature without nodal or liver metastasis after she underwent exploratory laparotomy, radical total gastrectomy with D2 dissection, Roux-en-Y esophagojejunostomy, tube jejunostomy, and JP drain insertion on hospital day 19. Estimated blood loss was 100 mL; both maternal and fetal conditions remained stable.

Postoperative Course

Postoperative recovery was uneventful. Carcinoembryonic antigen (CEA) was normal (0.6 ng/mL). The patient tolerated jejunostomy feeding. Histopathologic examination showed extranodal marginal zone B-cell lymphoma (MALT lymphoma). Immunohistochemistry revealed CD20^{+}, BCL-2^{+}, and low Ki-67, confirming diagnosis.[7]

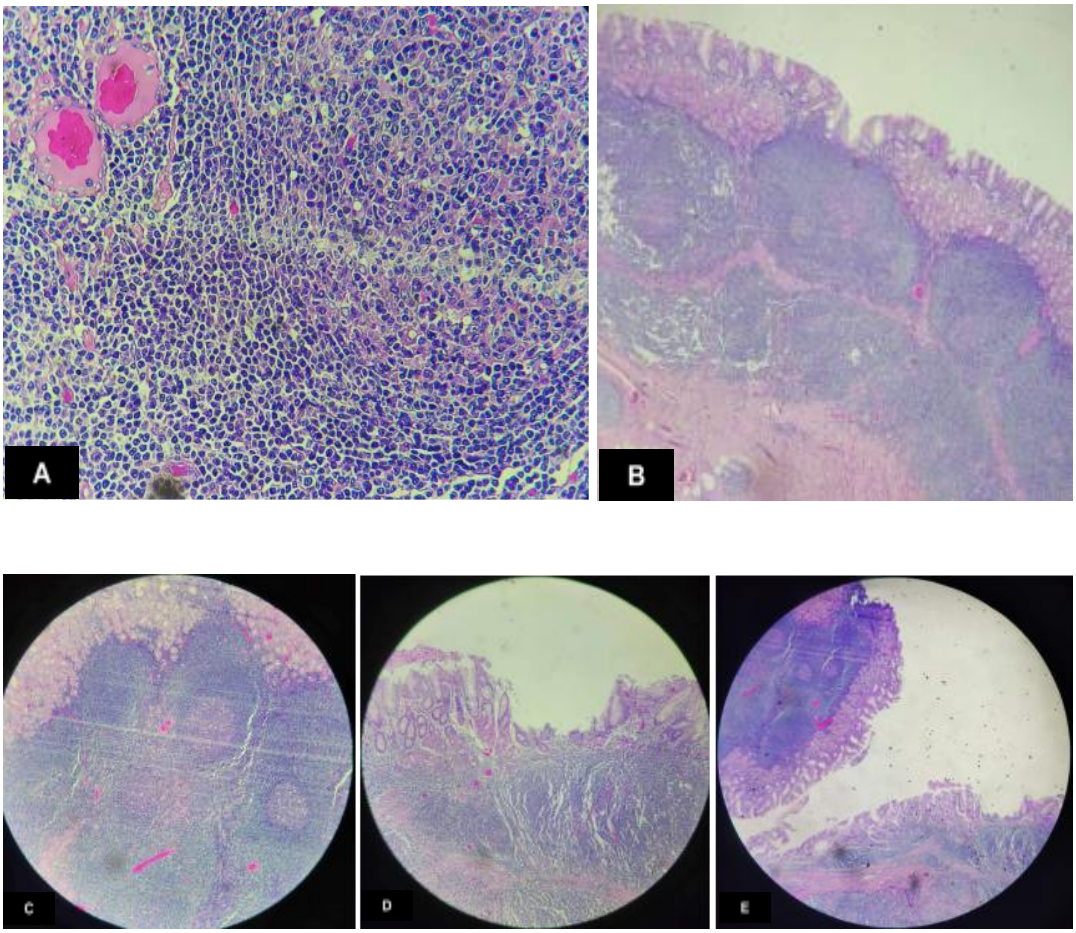

Figure 3. Official histopathology results revealed extranodal marginal zone non-Hodgkin lymphoma (MALToma) (A); reactive perigastric lymph nodes (B-C); with negative for tumor: proximal (esophagus) (D) and distal (jejunum) margins of resection (E)

The oncology team recommended adjuvant chemotherapy with R-CHOP (rituximab, cyclophosphamide, doxorubicin, vincristine, and prednisone) to be initiated 4–6 weeks postoperatively during the second trimester. The patient remained clinically stable and was eventually discharged with a viable 19-week pregnancy. Plans were made for continued gestation with subsequent vaginal delivery under close multidisciplinary follow-up. However, the patient was subsequently lost to follow-up before initiating chemotherapy.

Discussion

Epidemiology and Diagnostic Challenges

Lymphoma complicating pregnancy is rare, and indolent subtypes such as MALT lymphoma are particularly uncommon.[4, 8] Most pregnancy-associated lymphomas are aggressive B-cell variants, especially diffuse large B-cell lymphoma.[5] Indolent lymphomas occur mainly in older adults and seldom in women of reproductive age.

Diagnosis is difficult because pregnancy-related gastrointestinal and constitutional symptoms may mimic or obscure lymphoma presentation.[2] In this patient, recurrent UGIB and refractory anemia warranted deeper evaluation despite prior benign findings.

Diagnostic Work-up

Endoscopy with biopsy remains the diagnostic gold standard.[9] However, false negatives occur due to submucosal infiltration, requiring multiple deep biopsies.[9] *H. pylori* infection plays a crucial etiologic role, with eradication inducing remission in up to 75% of cases.[10] The patient's *H. pylori*-negative status ruled out antibiotic therapy as a curative measure. The absence of *H. pylori* and continued bleeding justified surgical exploration.

Radiologic evaluation in pregnancy must minimize fetal radiation. MRI, which avoids ionizing radiation, is safe and effective for assessing gastric pathology.[6] In this case, MRI findings were pivotal in raising suspicion for malignancy after nondiagnostic endoscopy.

Staging and Management

Gastric MALT lymphoma staging follows the Lugano system.[11] In nonpregnant patients, therapy depends on *H. pylori* status and disease extent. Localized *H. pylori*-negative disease can be treated with radiotherapy or immunotherapy (rituximab). Disseminated or refractory disease warrants chemoimmunotherapy (e.g., R-CHOP).[11]

During pregnancy, treatment remains individualized and informed largely by case reports and small series.[2-5] Timing of therapy depends on gestational age, disease stage, and maternal stability. A coordinated multidisciplinary team is critical.[5]

Therapeutic Considerations in Pregnancy

Chemotherapy during the first trimester carries high teratogenic risk due to organogenesis.[2,3] However, evidence suggests that standard regimens such as R-CHOP can be administered safely in the second and third trimesters with acceptable outcomes.[2,12] Surgical management is generally reserved for complications such as bleeding, perforation, or diagnostic uncertainty.[10] In this patient, ongoing bleeding and transfusion dependence necessitated surgery, which was both diagnostic and therapeutic.

Postoperative care must include nutritional support and wound monitoring, as oncologic patients are prone to impaired wound healing.[12] Coordination with obstetric and neonatal teams ensures fetal monitoring throughout treatment.

Prognosis and Delivery Considerations

Prognosis of gastric MALT lymphoma is generally favorable, with 10-year survival exceeding 90% in nonpregnant patients.[1,10] When managed appropriately, pregnancy does not appear to worsen outcomes.[2,5] Timing of delivery should balance fetal maturity and chemotherapy scheduling. Delivery should ideally occur ≥3 weeks after the last chemotherapy cycle to minimize neonatal myelosuppression.[3] Vaginal delivery is preferred, as cesarean section carries greater wound-healing risk.[12]

In this case, continuation of pregnancy to term was feasible, with plans for chemotherapy during the mid-trimester and subsequent vaginal delivery. Continued long-term surveillance will be required to monitor for recurrence.

Conclusion

Gastric MALT lymphoma in pregnancy is extremely rare and diagnostically challenging due to its nonspecific presentation and restrictions on diagnostic modalities. This case highlights the importance of maintaining a high index of suspicion for malignancy in pregnant patients with persistent or recurrent upper gastrointestinal bleeding.

Optimal management requires balancing maternal and fetal health through a multidisciplinary approach integrating gastroenterology, oncology, surgery, and obstetrics. MRI and endoscopy remain vital diagnostic tools, while surgical intervention may be required for persistent bleeding or inconclusive biopsy. When diagnosis is timely and therapy is carefully planned, favorable maternal and fetal outcomes can be achieved. As evidence remains limited, reporting such cases adds valuable guidance for future clinical decision-making in this rare scenario.

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