

Linitis Plastica in a Patient with Immune Thrombocytopenia: A Challenging Case

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Case Report

Keywords: linitis plastica, gastric, metastatic, peritoneal carcinomatosis

Posted Date: September 24th, 2026

DOI: <https://doi.org/10.21203/rs.3.rs-10985026/v1>

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Additional Declarations: No competing interests reported.

Abstract

Linitis plastica is a rare and aggressive form of diffuse gastric adenocarcinoma characterized by extensive submucosal infiltration of the gastric wall, often resulting in diagnostic difficulties with conventional endoscopy.

We report the case of a woman in her 50s with immune thrombocytopenia who presented with persistent postprandial vomiting, epigastric pain, and a 25-kg weight loss. Computed tomography revealed diffuse gastric wall thickening with antral stenosis, with inconclusive conventional endoscopic biopsies. Endoscopic ultrasound demonstrated marked gastric wall thickening with loss of normal layer stratification, and deep biopsies confirmed poorly differentiated diffuse-type adenocarcinoma with signet-ring cells and loss of E-cadherin expression. Exploratory laparoscopy subsequently confirmed peritoneal carcinomatosis, establishing advanced disease. Nutritional failure, recurrent catheter-related infections, and thrombocytopenia complicated management. After platelet optimization, palliative chemotherapy was initiated. Follow-up CT after two treatment sessions demonstrated a reduction in gastric wall thickening, suggesting a radiological response.

This case highlights the diagnostic limitations of conventional endoscopy in *linitis plastica* and the importance of endoscopic ultrasound-guided tissue acquisition, while illustrating the challenges of delivering systemic treatment in the setting of significant haematological and nutritional comorbidity.

Introduction

Linitis plastica is a rare and aggressive morphological subtype of gastric adenocarcinoma, characterized by diffuse infiltration of the gastric wall, predominantly involving the submucosa and frequently associated with poorly cohesive or signet-ring cells (1,2). This infiltrative growth pattern results in marked gastric wall thickening, reduced gastric distensibility, and progressive luminal stenosis (2,3).

Diagnosis can be challenging because the mucosa may remain relatively preserved, resulting in non-diagnostic conventional endoscopic biopsies (2,4). Endoscopic ultrasound allows assessment of the deeper gastric wall layers and facilitates targeted tissue acquisition, making it particularly valuable when *linitis plastica* is suspected (5).

We present a case of advanced gastric *linitis plastica* in a patient with immune thrombocytopenia, highlighting the diagnostic challenges and the complexity of nutritional and oncological management in this setting.

Case Presentation

A woman in her 50s presented with progressive epigastric pain, persistent postrandial vomiting, and a 25 kilogram weight loss over seven months. Her medical history included immune thrombocytopenia treated with corticosteroids, with a platelet count of 36,000/ μ L at admission. Four months before

admission, upper gastrointestinal endoscopy had shown non-specific body gastropathy, with a normal antrum and non-diagnostic mucosal biopsies.

Due to persistent and worsening symptoms, abdominal CT was performed and demonstrated diffuse gastric wall thickening with marked antral and pyloric stenosis, raising suspicion of an infiltrative gastric malignancy (Figure 1). Repeat upper endoscopy revealed a non-distensible stomach with markedly thickened folds and severe antral stenosis preventing passage of the endoscope. Repeat mucosal biopsies again showed only chronic gastritis (Figure 2).

Given the discrepancy between the radiological and endoscopic findings and the persistent suspicion of infiltrative malignancy, endoscopic ultrasound was performed. This demonstrated marked gastric wall thickening, measuring up to 14 mm, with loss of normal wall-layer stratification. Deep biopsies confirmed poorly differentiated adenocarcinoma with signet-ring cell morphology. Immunohistochemistry showed positivity for CK8/18 and CK7, focal MUC5AC expression, and loss of E-cadherin, supporting diffuse-type gastric carcinoma and establishing the diagnosis of *linitis plastica*.

Staging exploratory laparoscopy revealed peritoneal implants, with histological examination confirming poorly differentiated carcinoma with signet-ring features and intracellular mucin, consistent with gastric origin, establishing peritoneal carcinomatosis. A feeding jejunostomy was placed to provide enteral nutrition.

The clinical course was complicated by severe nutritional impairment and recurrent catheter- and jejunostomy-related infections, including bacteraemia, as well as thrombocytopenia. Given the advanced disease and multidisciplinary assessment, palliative chemotherapy was considered appropriate. Following platelet optimization to 134,000/ μ L, palliative chemotherapy with modified FOLFOX-7 was initiated. The patient completed five treatment cycles within four months, without major complications. Follow-up CT demonstrated a reduction in gastric wall thickening compared with the previous examination, suggesting a radiological response to treatment (Figure 3).

Discussion

Linitis plastica is characterized by diffuse infiltration of the gastric wall, predominantly involving the submucosa, which may result in preserved or minimally

altered mucosa despite extensive underlying disease. Consequently, conventional endoscopic biopsies may be non-diagnostic. The marked discrepancy between the radiological and endoscopic findings prompted further investigation with endoscopic ultrasound, which demonstrated loss of normal wall-layer stratification and allowed deep tissue acquisition. This ultimately established the diagnosis. These findings highlight the importance of maintaining a high index of suspicion for *linitis plastica* when imaging suggests infiltrative gastric disease despite non-diagnostic mucosal biopsies (6).

Peritoneal carcinomatosis is common initial pattern of disease progression in *linitis plastica* and was already present in this patient at diagnosis, precluding a curative surgical approach. Severe gastric obstruction also resulted in profound nutritional impairment, making nutritional support an essential component of management. In this context, enteral feeding through jejunostomy allowed nutritional optimization and contributed to the patient's ability to subsequently receive systemic treatment.

The concomitant immune thrombocytopenia added an additional therapeutic challenge, requiring platelet optimization before invasive procedures and systemic chemotherapy. Despite advanced disease and several infectious complications, palliative chemotherapy was successfully initiated. Importantly, follow-up CT demonstrated a reduction in gastric wall thickening after treatment, suggesting radiological response.

This case therefore illustrates not only the diagnostic limitations of conventional endoscopy in *linitis plastica* but also the importance of individualized, multidisciplinary management when advanced gastric cancer coexists with significant haematological and nutritional comorbidity.

Learning-Points

- *Linitis plastica* may remain undiagnosed despite conventional endoscopic biopsies because of its predominantly submucosal growth pattern;
- Endoscopic ultrasound with deep tissue sampling should be considered when imaging suggests infiltrative gastric disease despite non-diagnostic mucosal biopsies;
- Nutritional optimization and multidisciplinary management are crucial when advanced *linitis plastica* is associated with haematological comorbidity and gastric outlet obstruction.

Declarations

Funding: The authors received no financial support for the research, authorship, and/or publication of this article.

Consent for Publication: Written informed consent for publication of their clinical details and/or clinical images was obtained from the relative of the patient.

Ethical Approval: Ethical approval was not required for this case report in accordance with institutional requirements.

Conflict of Interest: The authors declare that they have no conflict of interest.

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Figures

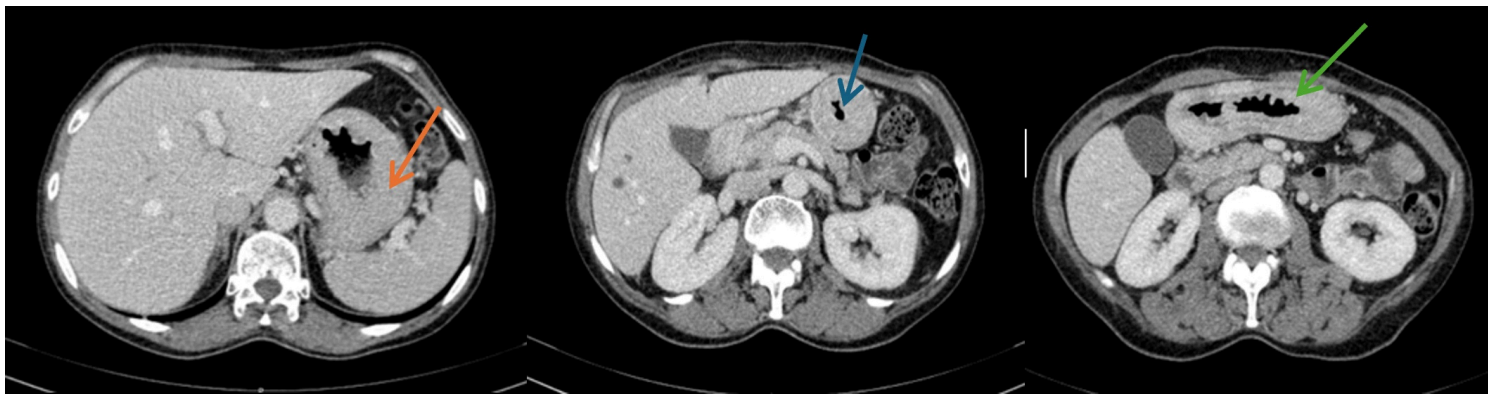


Figure 1

Abdominal and pelvic computed tomography images, showing a non-distensible stomach with thickened walls (left orange arrow) in all its segments and an antrum (centre blue arrow) and pyloric stenosis (right green arrow) in axial views.

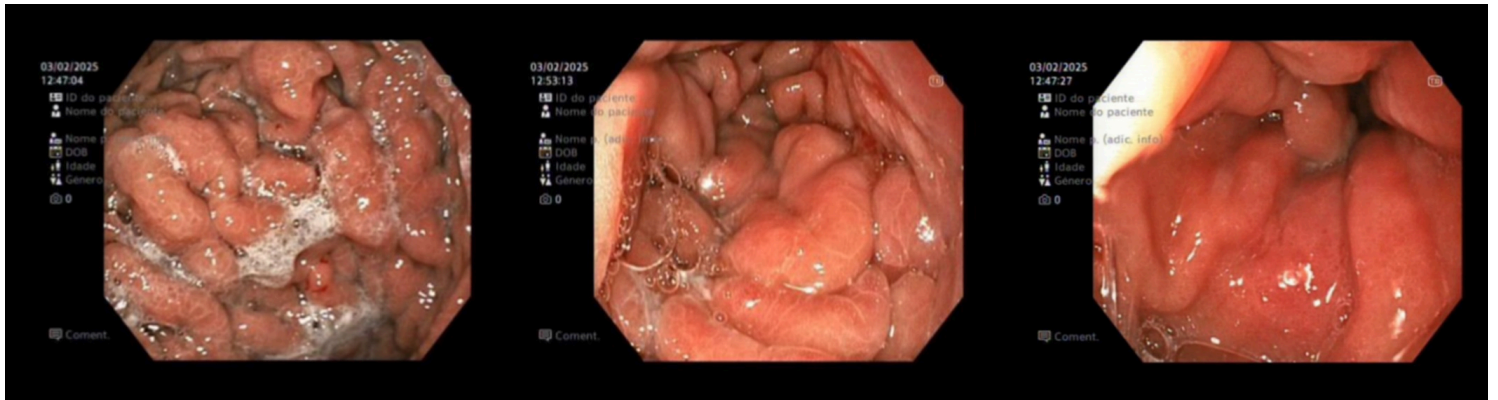


Figure 2

Esophagogastroduodenoscopy evaluation, showing the fundus (left), the body (centre) and antrum (right) of the stomach, its non-distensible wall with thickened gastric folds and an antrum stenosis.

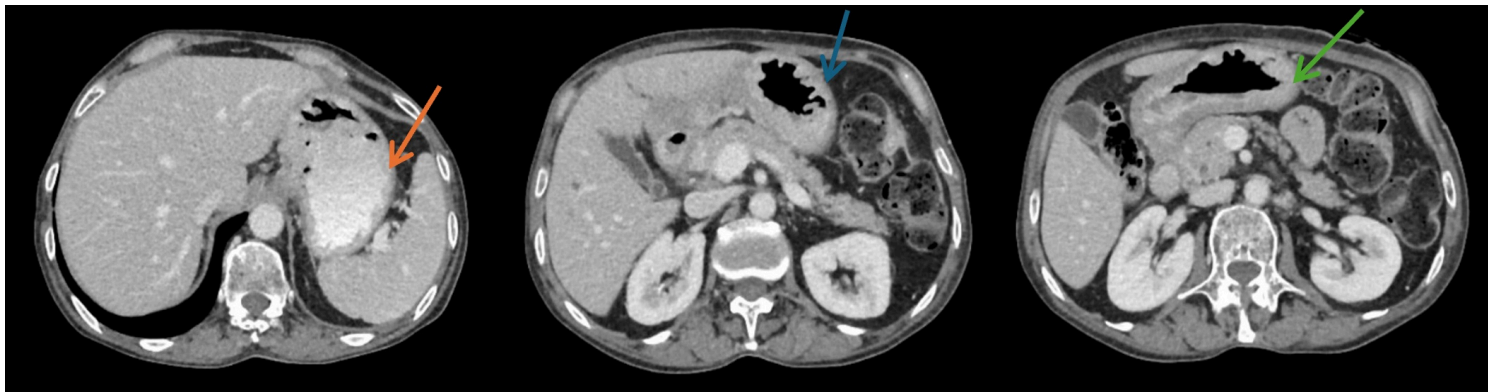


Figure 3

Follow-up CT after palliative chemotherapy demonstrating reduction in gastric wall thickening, consistent with radiological response in all its segments and an antrum (centre blue arrow) and pyloric stenosis (right green arrow) in axial views.