

Severely Impaired Gastric Emptying in the Setting of an Extensive Malignancy History: A Case of Paraneoplastic Gastroparesis

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INTRODUCTION

Gastroparesis is a disorder of the stomach involving a delay in the emptying of gastric contents that typically presents with nausea, vomiting, early satiety, and weight loss. Though commonly associated with diabetes or as a complication of surgical procedures, etiologies stemming from paraneoplastic processes are important to consider despite often being overlooked. The case presented here describes a patient with a significant malignancy history and evidence of severely impaired gastric emptying concerning for paraneoplastic gastroparesis and highlights the evaluation, diagnosis, and management of the condition.

CASE PRESENTATION

The patient is a 73-year-old man with a past medical history notable for chronic lymphocytic leukemia recently on ibrutinib, prostate cancer s/p surgical resection, non-small cell lung cancer s/p pulmonary lobectomy, hypothyroidism, and hepatitis C cirrhosis who presented to the office for evaluation of poor oral intake, inability to carry out activities of daily living, and altered mental status. History was limited given the patient's poor mental status, however he did endorse 15lb weight loss and decreased appetite. He denied any nausea, vomiting, abdominal pain, or change in bowel habits. Physical exam was notable for an overall frail appearing male with dry mucous membranes, and an abdominal exam without distention, or tenderness to palpation. Cardio-pulmonary examinations were unremarkable. Relevant laboratory data included a TSH of 0.48 uIU/L (0.30-5.00 uIU/mL), and a hemoglobin A1c 4.9 (NL<5.7%) obtained 5 months prior. The patient recently received a gastric emptying study which showed severely impaired gastric emptying with 50% gastric retention at greater than 28.5 hours (NL <10% retained at four hours). Computer Tomography (CT) showed evidence of diffuse lymphadenopathy, a new hepatic hypodensity, but no evidence of extrinsic compression of the gastric outlet. Anti-Jo1 Ab and Hu antibodies were sent to further evaluate for a possible paraneoplastic etiology however he was discharged home prior to these tests resulting given his clinical stability.

DISCUSSION

Paraneoplastic Gastroparesis, although an uncommon cause of delayed gastric emptying, is an important diagnosis to consider in severe cases without other obvious etiologies. Although diabetes and surgical complications account for greater than 42 percent of cases of gastroparesis, paraneoplastic syndromes should not be excluded as a possible cause of delayed gastric emptying as it can often be the presenting symptom of an underlying malignancy^{1,2}. Paraneoplastic gastroparesis has most commonly been observed in patients with lung, pancreatic, gallbladder, uterine or other soft tissue malignancies³. Knowing these common associations is an important factor to consider when evaluating a patient with delayed gastric emptying and concurrent cancer as it can inform one's clinical suspicion for a paraneoplastic cause. Even when comorbidities that are more commonly associated with gastroparesis are present, malignancy should always be considered.

In patients with a significant history of malignancy as presented here, identifying and resolving confirmed cases of paraneoplastic gastroparesis relies on successful identification of the underlying malignancy through tissue diagnosis via biopsy. A less invasive method for screening for paraneoplastic gastroparesis prior to attempting biopsy is through serologic testing. A case series by Lee et al. focused on the evaluation of paraneoplastic gastrointestinal motility dysfunction and noted positive paraneoplastic antibodies in 10 of 11 cases reviewed⁴. Despite small study populations, similar studies support antibody screening with type 1 antineuronal nuclear antibody (ANNA-1 or anti-Hu antibody) and cytoplasmic purkinje cell (Anti-Yo) antibodies in patients with suspicion for paraneoplastic gastroparesis^{4,5}. Serology testing has become an important step in the diagnosis of paraneoplastic gastroparesis. The paraneoplastic syndrome is confirmed with the detection of positive onco-neural antibodies or onset of symptoms within five years of the development of cancer⁶. Baig et al. highlighted that diagnosis likely holds prognostic value as well given that patients with paraneoplastic gastroparesis showed symptomatic improvement after surgical resection, chemotherapy, or radiation treatment of underlying malignancy in 6 of 14 cases reviewed⁵. Traditional therapies for gastroparesis

such as frequent small meals, anti-emetics, and pro-kinetic agents like metaclopramide and erythromycin are still utilized to help alleviate symptoms.

The case presented here demonstrates the need to fully investigate symptoms of weight loss, poor oral intake, nausea, and vomiting in this patient population as they could be explained by and lead to the diagnosis of a new disease process such as paraneoplastic gastroparesis. This case highlights severely pathologic gastric emptying in a patient with a significant history of malignancy and emphasizes the importance of considering a paraneoplastic syndrome as a possible cause of gastroparesis. Delayed gastric emptying, especially in patients with underlying malignancy is an often overlooked disease process that requires thorough evaluation with imaging and serologic testing.

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