

Gastric Adenocarcinoma of the Remnant Stomach after Roux-en-Y Diagnosed by EDGE

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Abstract

During a Roux-en-Y gastric bypass, the distal stomach is excluded during the formation of a truncated gastrointestinal tract, which subsequently makes it difficult to evaluate for pathology with traditional endoscopic modalities. In these circumstances, a modified endoscopic procedure, known as endoscopic ultrasound directed transGastric ERCP (EDGE) is used. It is likely that the etiology of gastric adenocarcinoma after gastric bypass is multifactorial, due to changes in physiology of the remnant stomach, chronic inflammatory states and pancreaticobiliary reflux. Our patient developed a rare gastric adenocarcinoma of the excluded stomach, 20 years after a Roux-en-Y procedure. It was diagnosed utilizing the innovative EDGE procedure after a 5-year workup for melena and iron deficiency anemia was inconclusive.

INTRODUCTION

Roux-en-Y is a type of surgical procedure with various anatomical methods to achieve significant reduction in one's body fat. This ultimately reduces the associated morbidities and mortalities associated with obesity. During a Roux-en-Y gastric bypass, distal parts of the stomach are excluded in the formation of the truncated gastric tract, which subsequently makes it difficult to diagnose pathology there with traditional endoscopic modalities. Often a modified endoscopic procedure, known as endoscopic ultrasound directed transGastric ERCP (EDGE) is utilized for better visualization and diagnostic yield. Laparoscopy-assisted ERCP was formerly used however this is a less invasive approach associated with less intraoperative risk and smaller recovery time. During EDGE, a stent is placed between the excluded stomach and the truncated gastric tract, allowing for adequate visualization and easier access to the distal structures. If the incidence of gastric cancer in the excluded stomach continues to rise perhaps a screening tool utilizing EDGE may aid in the diagnosis of malignancy earlier with a less extensive workup. Rarely are patients diagnosed endoscopically.

CASE PRESENTATION

A 67 YO obese F with PMH of Roux-en-Y and chronic ITP post splenectomy was admitted for symptomatic anemia manifesting as syncope and melena. Her hemoglobin was 7.5 g/dL. Notably she had a 5-year history of occult iron deficiency anemia where multiple EGD's, colonoscopies and two video capsule endoscopies were performed showing frank blood in the jejunum without a source of bleeding. During this admission, a CT angiogram revealed a 5 cm clot in the gastric remnant without evidence of hemorrhage. She underwent EGD/EUS which confirmed Roux-en-Y anatomy. An endoscopic ultrasound directed transGastric ERCP (EDGE) was performed to gain access to the excluded stomach. Upon successful placement of the AXIOS LAMS and its traversal with a standard endoscope, an ulcerated mass with ill-defined borders was found in the antrum of the excluded stomach. This area was biopsied and identified as poorly differentiated gastric adenocarcinoma with signet ring cells. Subsequent EUS was performed for staging utilizing previously placed access to the excluded stomach with AXIOS LAMS. The gastric adenocarcinoma was staged as T2N0



A. Ulcerated Mass of the Excluded Gastric Antrum. Arrow indicates sonographic evidence suggesting invasion into the muscularis propria manifested by abutment (Layer 4). An intact interface was seen between the mass and the adjacent structures suggesting a lack of invasion.

B. Excluded Stomach. Obstructing ulcerative mass of the gastric antrum in the excluded stomach.

C. AXIOS STENT. Arrow indicates Axios stent deployed between the gastric pouch and excluded stomach. .

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DISCUSSION

Gastric adenocarcinoma is the fifth most common malignancy worldwide. Several risk factors are implicated in the diagnosis of gastric adenocarcinoma, such as *Helicobacter pylori* infections causing chronic inflammation of the gastric mucosa, obesity, smoking, consumption of foods rich in nitric oxide, and previous gastric surgeries.

Although patients have a higher incidence of gastric cancer after Roux-en-Y compared to the general population, malignancy of the excluded stomach is rare. One specific hypothesis suggests that the presence of pancreaticobiliary reflux leads to prolonged gastritis subsequently increasing the risk of gastric adenocarcinoma. Alternatively, other hypotheses emphasize a potential infectious etiology post-operatively that may go unnoticed, causing a prolonged inflammatory state. It is likely that the etiology is multifactorial.

Like many malignancies gastric cancer may present with nonspecific signs of weight loss, dysphagia, abdominal pain and iron deficiency anemia. Our patient presented with melanic stools and iron deficiency anemia, had an extensive workup with multiple endoscopies and video capsule endoscopy, however did not have a clear source of bleeding. It was not until the patient underwent the EDGE procedure where the source was clearly localized and biopsy detected gastric carcinoma. The 5-year survival rate for gastric cancer is reported to be 31% in the United States, but given the diagnostic delay and location of the gastric adenocarcinoma, this may not be reflective in our patient. With limited cases reported the risk of gastric malignancy in the excluded pouch, the overall prognosis is unknown. .

CONCLUSIONS

Our patient represents a rare entity of gastric adenocarcinoma of the excluded stomach, 20 years after a Roux-en-Y procedure, diagnosed via EDGE after a five-year workup for melena and iron deficiency anemia was inconclusive.