Management of acute esophageal necrosis syndrome

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Acute esophageal necrosis (AEN) is an unusual clinical condition marked by circumferential necrosis that is confined to the distal esophageal mucosal layer that transitions abruptly at the gastroesophageal junction to healthy mucosa. We present a case of AEN that occurred concomitantly with a large type III hiatal hernia, and we review the literature discussing this syndrome.

CLINICAL SUMMARY

A 62-year-old woman with a history of gastroesophageal reflux disease and hiatal hernia was seen by her gastroenterologist after 4 days of nausea, coffee ground emesis, and lower retrosternal chest pain. An esophagogastroduodenoscopy revealed a large hiatal hernia and necrotic mucosa in the distal half of the esophagus. The patient was resuscitated with intravenous fluids, a nasogastric tube was placed, and she was started on an empiric course of broad-spectrum antibiotics before being transferred to our institution for an impending surgical emergency.

On arrival, the patient was afebrile, had normal vital signs, and was no longer reporting chest pain. She did not have a leukocytosis. Because of her stable clinical condition, the patient was observed while being treated with broad-spectrum antibiotics and a proton pump inhibitor for 4 days before an elective operation.

Endoscopy confirmed ischemic changes starting 25 cm from the incisors and ending abruptly at the gastroesophageal junction (Figure 1). The outer esophagus and stomach appeared normal, with the exception of a shortened esophagus. A laparoscopic Nissen fundoplication was therefore performed over a 56F bougie with a concomitant esophageal lengthening procedure. The patient's recovery was uneventful. She was observed in the hospital 4 days postoperatively while receiving a soft mechanical diet. Before discharge, she underwent a surveillance esophagogastroduodenoscopy, which revealed early healing of the distal esophageal mucosa (Figure 2). This patient returned to the clinic 3 weeks later, at which time she denied any recurrent episodes of emesis or of abdominal or chest pain.

FIGURE 1. Endoscopic view of distal esophagus taken immediately before surgical correction of hiatal hernia. Photograph demonstrates circumferential necrotic appearing mucosa.

DISCUSSION

First described in 1990 by Goldenberg and colleagues,¹ AEN is a rare disorder with an estimated incidence of zero to 0.2% in autopsy reports and clinical trials. This disorder is predominately found among men, with a mean age of 67 years.² AEN typically presents with upper gastrointestinal bleeding, but other common symptoms are epigastric and abdominal pain, vomiting, dysphagia, fever, and syncope. This clinical disorder is diagnosed endoscopically with the finding of black mucosa in the distal esophagus ending abruptly at the gastroesophageal junction. Histologic analyses have confirmed necrosis of the squamous mucosa with preservation of the muscular layers.² A competing diagnosis with a similar endoscopic appearance is melanosis, leading some authors to advocate routine histologic confirmation.³

It is generally believed that AEN arises in patients with multiple medical problems and in the setting of global hypoperfusion. Patients with vascular disease are at a particular risk. Another potential etiology of AEN is the presence of a caustic injury associated with inadequate mucosal repair mechanisms resulting from malnourishment or poor perfusion. Although the AEN-specific mortality of 6% is relatively low, overall mortality associated with this condition is approximately 30%, relating to underlying conditions contributing to AEN.³ Critical treatment components include hemodynamic restoration, gastric acid suppression, and restricting oral intake.

Potential complications of AEN include full-thickness necrosis and esophageal perforation, which occur in 7% to 10% of patients. In addition, 10% of patients have

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FIGURE 2. Endoscopic view of distal esophagus 4 days after surgical correction of hiatal hernia.

esophageal strictures develop as a late complication. The vast majority of patients with AEN, however, recover fully with supportive care.³

In previously reported cases of AEN associated with a hiatal hernia, some authors have performed an esophagectomy. This was done in cases of full-thickness injury or intraoperative perforation.⁴ In other cases, efforts were made to decompress the stomach to allow esophageal healing to take place before proceeding to the operating room.⁵

In our case, the patient's clinical stability suggested that esophageal perforation had not occurred, and we did not consider ourselves obliged to perform an emergency operation. The period of observation also provided reassurance that an esophagectomy would not be necessary in this case and that the patient would be adequately treated with repair of the hiatal hernia. We performed a surveillance endoscopy on postoperative day 4, as reported in approximately 50% of cases in the literature.³ Observation of mucosal healing, which can occur as early as day 7, may provide some assurance that it is safe to resume oral intake.

We believe that in this rare condition the clinical presentation will dictate the urgency of surgical management. Patients with mediastinitis or sepsis may require an emergency esophagectomy. Conversely, patients in clinically stable condition should be initially observed while treating with an empiric antibiotic course, because partial-thickness AEN typically heals with expectant management.^{2,3}

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Assessment by transesophageal echocardiography of left subclavian artery stenosis in patients undergoing coronary artery bypass grafting

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Although left internal thoracic artery (ITA) is most commonly used in coronary artery bypass grafting (CABG) because of its excellent long-term patency, this benefit can be

decreased in the presence of stenosis or occlusion in the left subclavian artery (LSCA). Park and colleagues¹ reported an incidence of 3.5% (10/284), as assessed by computed tomography (CT). Because of our concerns regarding the nephrotoxicity of contrast agent, however, we have used intraoperative transesophageal echocardiography (TEE) to assess the LSCA. We report the feasibility and results of this method.

CLINICAL SUMMARY

We examined 152 consecutive CABG cases (January 2005–September 2010, 109 male patients, 46–87 years old) in which use of left ITA graft was scheduled and

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