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Acute Esophageal Necrosis (Black Esophagus): A Case Report

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Abstract **Case Report**

Acute Esophageal Necrosis (AEN), or "black esophagus," is a rare but severe condition primarily affecting elderly patients with multiple comorbidities. It is characterized by diffuse circumferential black discoloration of the esophageal mucosa, usually resulting from ischemia, impaired mucosal defenses, and exposure to gastric contents. We present the case of a 75-year-old female patient with congestive heart failure and atherosclerosis who was diagnosed with AEN during an esophagogastroduodenoscopy performed for epigastric pain. Laboratory findings were within normal limits, and there was no evidence of gastrointestinal bleeding. Conservative management with intravenous proton pump inhibitors (PPIs) and supportive care resulted in significant clinical improvement. This case underscores the importance of recognizing AEN as a differential diagnosis in elderly patients presenting with epigastric pain, even in the absence of upper gastrointestinal bleeding. Early endoscopic diagnosis and appropriate medical management are crucial in improving outcomes.

Keywords: Acute Esophageal Necrosis, Black Esophagus, Ischemic Esophagitis, Endoscopy, Gastrointestinal Hemorrhage, Proton Pump Inhibitors.

INTRODUCTION

Acute Esophageal Necrosis (AEN), commonly known as "black esophagus," is a rare but severe condition characterized by circumferential black discoloration of the esophageal mucosa, predominantly affecting the distal esophagus. It is often associated with ischemic insult, hemodynamic instability, and compromised mucosal defenses. Although its exact pathogenesis remains unclear, AEN is frequently linked to underlying conditions such as cardiovascular disease, diabetes, malignancies, and sepsis. The mortality rate remains high, ranging between 32% and 36%, mainly due to the severity of comorbidities rather than the esophageal lesion itself.

This case report presents a 75-year-old female patient with congestive heart failure (CHF) and atherosclerosis, who was diagnosed with black esophagus during an upper endoscopy performed for epigastric pain.

CASE REPORT

A 75-year-old woman with a past medical history of congestive heart failure (CHF) and atherosclerosis was admitted to the emergency department for epigastric pain of recent onset. She reported no vomiting, gastrointestinal bleeding, dysphagia, or recent use of NSAIDs.

Physical Examination:

- Blood pressure: 120/80 mmHg
- Heart rate: 78 bpm, regular
- Temperature: 36.8°C
- No signs of acute heart failure or hemodynamic instability

Laboratory Findings:

- Hemoglobin: 13.5 g/dL (normal)
- White blood cell count: 8,000/µL (normal)
- Platelet count: 220,000/µL (normal)
- Renal function, liver function, and coagulation studies: within normal limits

Endoscopic Findings:

An esophagogastroduodenoscopy (EGD) revealed diffuse circumferential black discoloration of the distal esophagus, sharply demarcated at the gastroesophageal junction, with areas of friability and necrosis. The stomach and duodenum appeared normal.

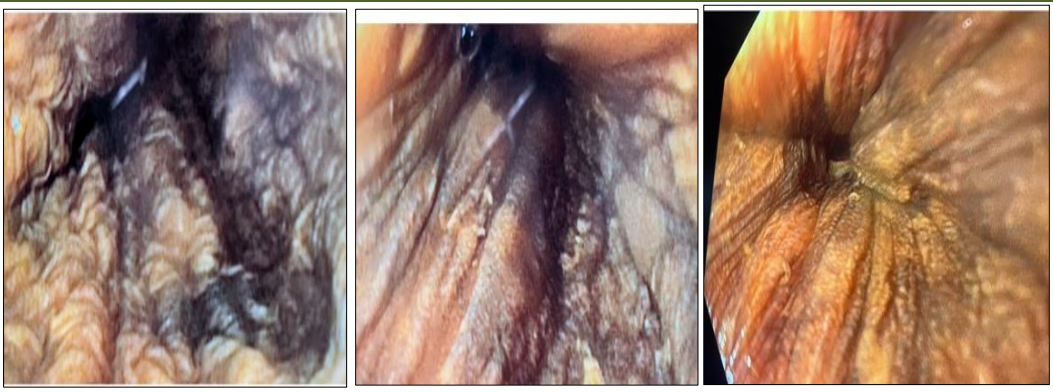

Figure 1: Endoscopic view of acute esophageal necrosis

Management and Outcome:

The patient was treated conservatively with **nil per os (NPO), intravenous proton pump inhibitors (PPIs), and supportive care**. Given the absence of ongoing bleeding or perforation, surgical intervention was not indicated. A follow-up endoscopy two weeks later showed significant mucosal healing with residual inflammation. The patient was discharged in stable condition with continued PPI therapy and dietary modifications.

DISCUSSION

Acute Esophageal Necrosis is a rare but clinically significant pathology often associated with ischemic events, systemic hypoperfusion, and mucosal injury from gastric reflux. Several studies, including those by Goldenberg *et al*., (1990), Grudell *et al*., (2006), and Gurvits (2010), have highlighted its multifactorial etiology and high mortality rates.

Pathophysiology and Risk Factors

- **Ischemia:** Low-flow states, often due to cardiovascular compromise, have been identified as key contributors. Our patient had congestive heart failure and atherosclerosis, both recognized as risk factors.
- **Gastric acid injury:** Reflux of acidic gastric contents exacerbates mucosal damage, particularly in patients with impaired esophageal motility or delayed gastric emptying.
- **Compromised mucosal defenses:** Elderly patients with multiple comorbidities, such as diabetes or renal insufficiency, are more susceptible to mucosal injury and necrosis.

Clinical Presentation and Diagnosis

- The most common presenting symptom is upper gastrointestinal bleeding (78% of cases, per Grudell *et al*., 2006). However, our patient presented atypically with isolated epigastric pain and no signs of bleeding.
- Endoscopic diagnosis is essential, characterized by black, necrotic mucosa sharply stopping at the gastroesophageal junction.

Prognosis and Management

- The overall mortality rate is **32-36%**, with death usually resulting from underlying conditions rather than the esophageal lesion itself.
- Supportive treatment (NPO, IV PPI, hemodynamic stabilization) is the mainstay of therapy.
- **Complications:** Stricture formation occurs in 10-15% of cases, requiring close follow-up.

This case underscores the importance of recognizing AEN as a potential cause of epigastric pain, even in the absence of gastrointestinal bleeding, especially in elderly patients with cardiovascular disease.

CONCLUSION

Acute Esophageal Necrosis is a rare but severe esophageal disorder primarily affecting elderly patients with significant comorbidities. The pathogenesis involves a combination of ischemia, gastric acid injury, and impaired mucosal defenses. Early diagnosis via endoscopy and prompt supportive management are crucial in improving outcomes. This case highlights the need for increased awareness of AEN, particularly in patients with cardiovascular risk factors presenting with atypical gastrointestinal symptoms.

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