Black esophagus: an unusual etiology of the upper gastrointestinal bleeding

Authors: Piotr Eder, Agnieszka Dobrowolska

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Black esophagus: an unusual etiology of the upper gastrointestinal bleeding

Short title: Unusual cause of the upper gastrointestinal bleeding

Author: Piotr Eder¹,², Agnieszka Dobrowolska¹,²

¹ Department of Gastroenterology, Dietetics, and Internal Medicine, Poznan University of Medical Sciences, Poland

² Heliodor Święcicki University Hospital in Poznań, Poland

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Address for correspondence:

Prof. dr hab. med. Piotr Eder, Department of Gastroenterology, Dietetics, and Internal Medicine, Poznan University of Medical Sciences, Heliodor Święcicki University Hospital, Przybyszewskiego Street 49, 60-355 Poznan, Poland

E-mail: piotr.eder@op.pl Phone: 0048698050797, 0048618691343
A 66-years old male patient was admitted to the emergency unit with a suspicion of acute upper gastrointestinal bleeding. His past medical history was unremarkable. The symptoms appeared for the first time three days earlier, encompassing vomiting and abdominal pain. On the day before admission, the patient started to vomit with fresh blood. At the time of admission, the patient was hemodynamically stable, his body temperature was normal. The physical examination of the abdomen revealed tenderness in the epigastric region but without any palpable mass. There were no signs suggestive of peritonitis, and the peristalsis was intact. Digital rectal examination revealed black stool.

Blood tests showed leukocytosis with a hemoglobin level of 18 g/dl. There were laboratory signs of acute kidney injury of prerenal origin. The patient underwent an urgent upper gastrointestinal endoscopy, which showed multiple areas of black mucosa with diffuse white exudates in the middle and distal part of the esophagus (Figure 1A and 1B). There were also signs of hiatal esophageal hernia. Moreover, there was deep ulceration in the duodenal bulb (Forrest IIC) with duodenal deformation and stricture. The insertion of the gastroscope to the distal part of the duodenum was impossible.

Gastroscopy revealed typical macroscopic signs of “black esophagus” (acute esophageal necrosis - AEN) [1]. AEN is a rare entity typically associated with multiorgan dysfunction, hypotension, sepsis, acute alcohol intoxication, or other severe underlying conditions [1-3]. Its clinical presentation includes mainly hematemesis and abdominal pain. The etiology is unknown, however it seems that local hypoperfusion and the chemical injury caused by gastric content are the most important driving factors [1]. Typical endoscopic appearance of black mucosal pigmentations frequently accompanied by massive, white exudates localized in the middle and distal part of the esophagus allows for making the final diagnosis. Histopathological confirmation of the diagnosis is not necessary [1]. Treatment should be
focused on underlying conditions, as well as the therapy with proton pump inhibitors, nil-per-os restriction are needed [1,2].

All symptoms of our patient resolved after the initiation of conservative treatment. Gastroscopy, repeated four weeks later, revealed almost complete healing of the esophageal lesions with focal exudative mucosal remnants (Figure 1C). The duodenal bulb's ulceration was healed with a stricture (Figure 1D), which could be easily passed by the endoscope.

Our case description shows that AEN can also appear in patients without severe comorbidities. Gastric outlet obstruction resulted from a complicated duodenal ulcer disease, hiatal hernia, and acute dehydration probably were the main driving factors of AEN [1].

**Contribution statement:** Piotr Eder was responsible for conceptualization, writing, reviewing, editing, and submitting the manuscript. Agnieszka Dobrowolska was responsible for reviewing and editing the manuscript.
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Figure 1. AB - Gastroscopy images showing black mucosal pigmentations accompanied by massive, white exudates localized in the middle and distal part of the esophagus, typical for acute esophageal necrosis (“black esophagus”). CD - Gastroscopy images after the treatment showing almost complete healing of the esophageal lesions with focal exudative mucosal remnants (C) and a stricture of the duodenal bulb with complete healing of the ulceration (D).