Case #36

NAME Educational Activities Committee

Case provided by:

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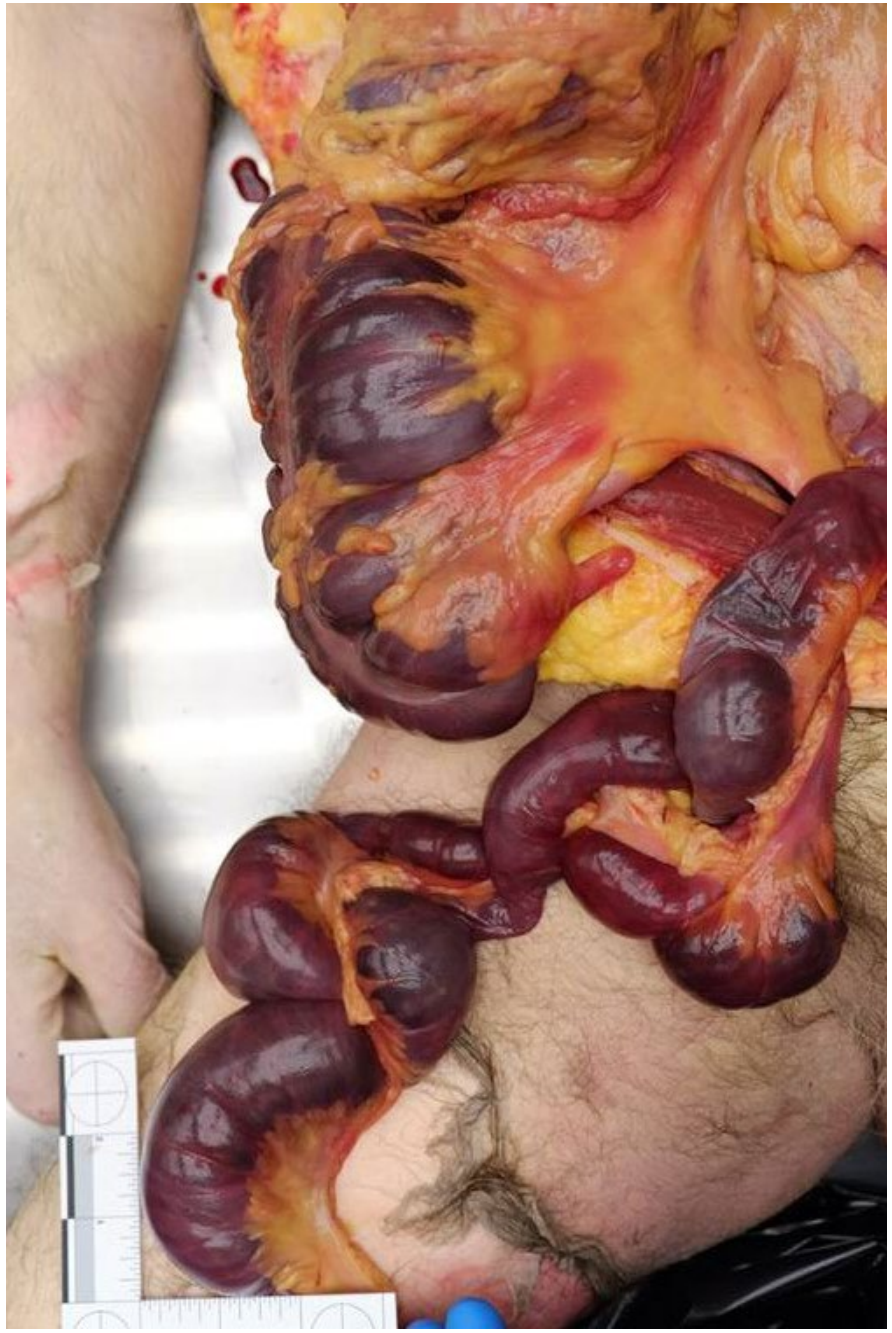


1. The decedent was a 50-year-old man who was found dead at home. He had no past medical history other than cigarette smoking and acid reflux. On autopsy, the entire bowel appears purple.

What is the most likely cause of the intestinal discoloration?

- ◯ Abdominal blunt force trauma
- ◯ Intraluminal blood due to duodenal ulcer
- ◯ Abdominal sharp force trauma
- ◯ Decomposition changes
- ◯ Ischemia due to inguinal hernia

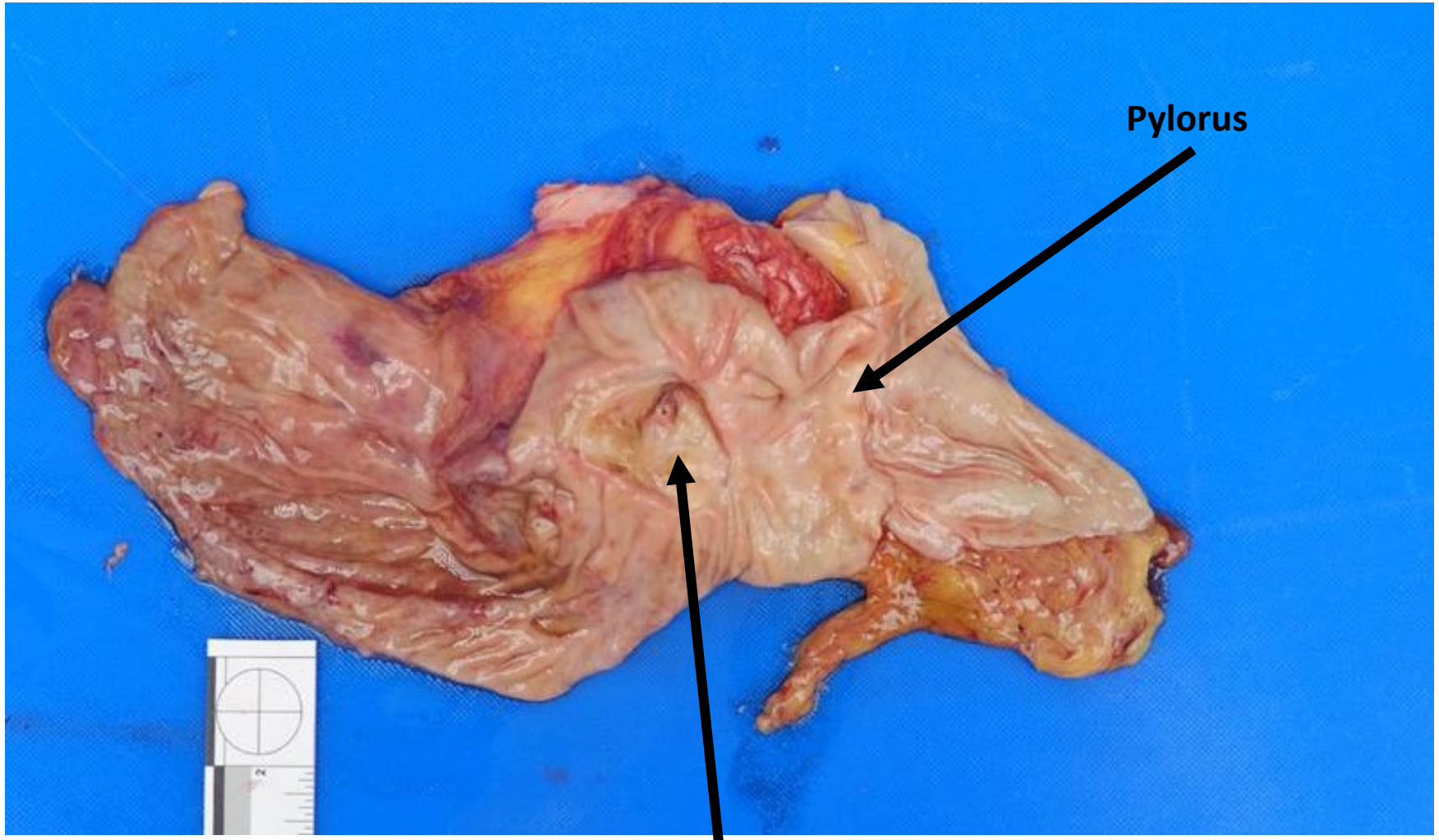
Answer...

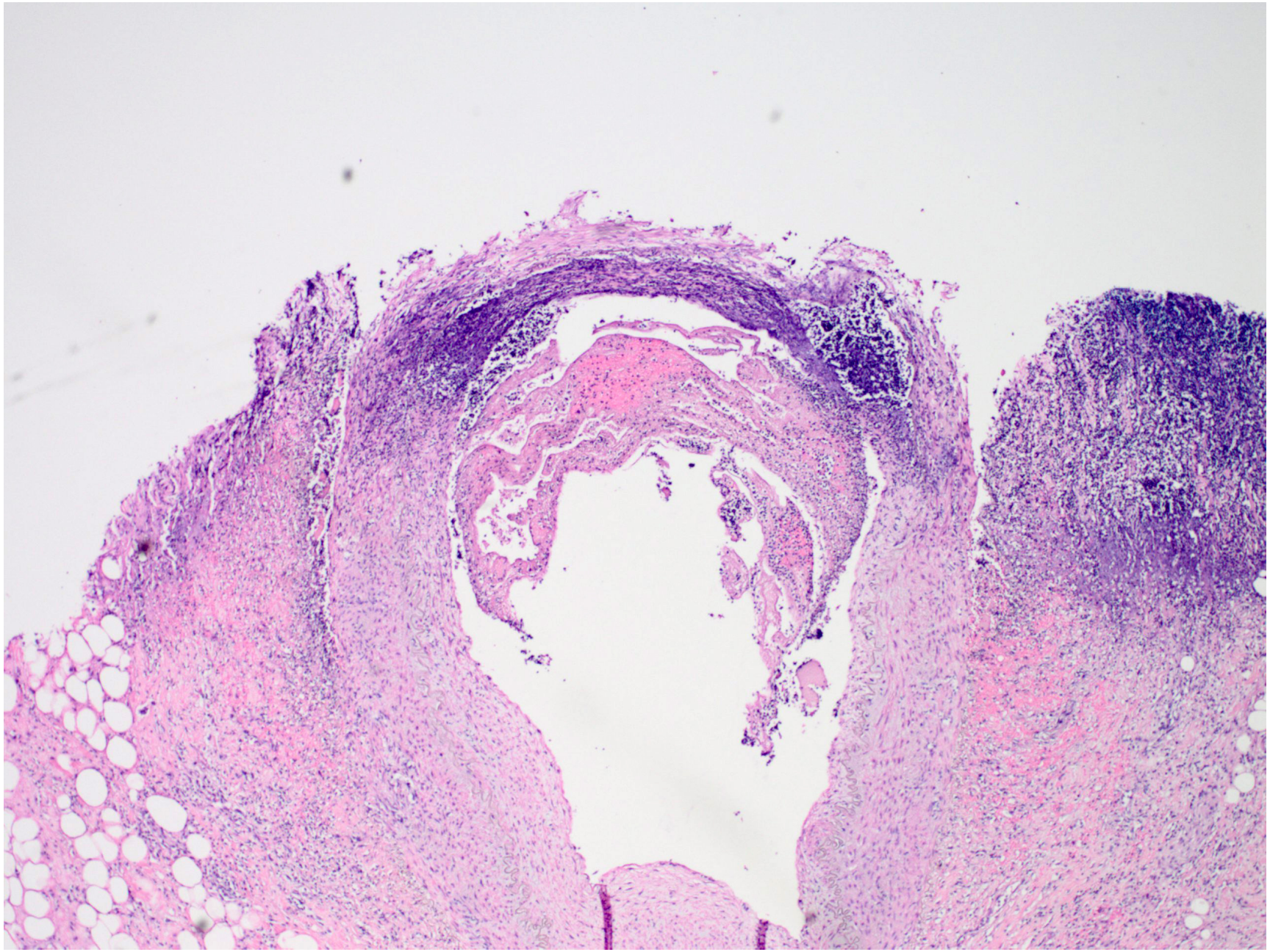
B. Intraluminal blood due to duodenal ulcer (CORRECT ANSWER, 36.21% of responses)

Peptic ulcers are defects in the gastric or duodenal mucosa that extend through the muscularis mucosa into the deeper layers of the wall. They are most commonly associated with *H. pylori* infection or use of NSAIDS. Smokers are about two times more likely to develop ulcer disease than nonsmokers, due to the strong association between cigarette smoking and *H. Pylori* infections. Approximately 70 percent of peptic ulcers are asymptomatic. Patients with silent peptic ulcers may later present with ulcer-related complications such as hemorrhage or perforation

Acute upper gastrointestinal hemorrhage is the most common complication of peptic ulcer disease, occurring in 5-20 % of patients (most often in those with duodenal ulcers). It occurs when the ulcer erodes into underlying vessel walls.

Perforations, seen in 2 to 10 % of patients with peptic ulcer disease, will generally present with peritonitis due to the presence of fecal matter and stomach contents within the abdomen. Prepyloric gastric ulcerations account for most perforations followed by duodenal bulb ulcers.


Pylorus
Eroding duodenal ulcer



Histologic section of the ulcer showing erosion into the underlying vessel wall

A. **Abdominal blunt force trauma** (4.09% of responses)
Blunt force trauma of the abdomen would be more likely to cause focal soft tissue and (possibly serosal) hemorrhages. The findings in our case are extensive with duskiness being seen throughout the entire bowel serosa, and no soft tissue or mesenteric hemorrhages identified, making this option less likely.

C. **Abdominal sharp force trauma** (0.76% of responses)
Sharp force trauma of the abdomen would be most likely to cause a visceral perforation with bowel contents and hemorrhage likely within the abdomen. The findings would also likely be more focal, rather than involving the entire bowel, as seen in our case.

D. **Decomposition changes** (33.48% of responses)
Decomposition changes of the bowel will generally appear as a more brown-green discoloration, along with bloating due to bacterial proliferation and gas formation that is especially prominent within the bowel. Decomposition changes of the viscera will generally accompany external decomposition changes. Other than minimal skin slippage, no decomposition changes are seen on the picture in our case.

E. **Ischemia due to Inguinal hernia** (25.45% of responses)
Ischemia can lead to the same dusky and purple discoloration as is seen in this case. A strangulated inguinal hernia is definitely a possible cause of ischemia, although in that scenario we would see ischemic changes confined to the portion of bowel that was entrapped rather than ischemic changes throughout the entire bowel, as seem in this case.

References

- https://www.hopkinsmedicine.org/gastroenterology_hepatology/diseases_conditions/esophageal_stomach/peptic_ulcer.html
- https://www.uptodate.com/contents/peptic-ulcer-disease-clinical-manifestations-and-diagnosis?search=peptic%20ulcer&source=search_result&selectedTitle=2~150&usage_type=default&display_rank=2#H6