



"I vomited a bit of blood!"



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Julia's case

Julia, a 50-year-old woman, presents with history of one episode of bright red hematemesis. She has had no pain in her abdomen, no melena and no constitutional symptoms. The emesis was preceded by weakness and dizziness. There was no relation to food intake or medication administration. Her vital signs are stable and she is in no distress in the ED. Her abdominal exam is unremarkable and she wishes to return home.

History

Her past medical history is significant for autoimmune hepatitis, liver cirrhosis and small esophageal varices which are monitored regularly by a gastroenterologist. She is currently taking propranolol 40 mg b.i.d. There is no previous history of GI bleeding.

Questions & Answers

1. *She looks OK—can she be discharged to be followed-up by her gastroenterologist?*

The highest risk of re-bleeding from esophageal varices is within hours of cessation of initial bleeding.

Indicators of risk for early variceal re-bleeding include > 60-years-old, ascites, active alcoholism, a severe previous bleed (resulting in hypotension or anemia), history of renal failure or hepatoma. Assessment of hepatic function by the Child-Pugh classification can also be an indicator for increased risk of re-bleeding in those patients with a higher score.

If you are able to get a previous endoscopy report, this may help you determine the risk of bleeding, which increases with the:

- size,
- shape (tortuous varices being more dangerous than straight ones),
- appearance (redder markings being worse) and
- location (risk higher as the location proceeds from the esophagus, through the gastroesophageal junction and to the stomach).

A few hours observation is indicated in all cases, but if any concerning factors for re-bleeding exist, admission for at least 48 hours with prompt gastroenterology consult is indicated. Patients with very minor bleeds, normal coagulation parameters, who remain stable after a period of observation, have early GI follow-up and the ability to return to hospital quickly may be discharged, preferably after discussion with a gastroenterologist and firm instructions to return at the earliest signs of re-bleed.

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Table 1

Causes of GI bleed that should be considered

- Peptic ulcer disease (drugs, infectious, stress, Zollinger-Ellison syndrome)
- Gastritis
- Esophagitis
- Esophageal, gastric or duodenal varices
- Portal hypertensive gastropathy
- Vascular malformations: idiopathic angioma, Osler-Weber-Rendu syndrome, Dieulafoy's lesion
- Mallory-Weiss syndrome
- Foreign body ingestion
- Aortoenteric fistula
- Tumours: gastric, pancreatic, other



Figure 1. Endoscopic view of large esophageal varices.

2. What else might have caused an upper GI bleed?

A history of liver disease or known varices makes variceal bleeding very likely, however, these do not of course, “protect” anyone from other causes of bleed that should not be missed. Firstly, an upper GI bleed should be differentiated from massive respiratory tract or pharyngeal bleeds before proceeding. This may not be as easy as it sounds, especially if the bleeding has stopped by the time you see the patient. In addition to relevant histories of respiratory (watch out for TB) or pharyngeal disease, a careful assessment includes chest x-ray and visualization of the pharynx.

The differential diagnosis for upper GI bleeding is shown in Table 1.

3. How should active variceal GI bleeding be managed in the ED?

Management must begin with assessment of the ABC's. Intensive monitoring of vital signs and the ABC's should be ongoing:

- It is important to manage the airway before this becomes either more difficult or too late; aspiration of blood can make resuscitation of an actively bleeding patient far more challenging
- Aggressive fluid resuscitation is a mainstay in treatment of the hemodynamic effects of upper GI bleeding. At least two wide bore IV lines should be started at once. Fluid resuscitation should include fluids, packed red blood cells and fresh frozen plasma
- Coagulation status (commonly impaired in patients with liver disease) should be monitored and corrected as needed using fresh frozen plasma, fresh blood and vitamin K

- Pharmacotherapy should be initiated immediately. Somatostatin, or its longer-acting analogue octreotide, are used as vasoconstrictors of splanchnic vessels that subsequently leads to reduction in portal pressure. Typical doses are 50 mcg bolus and then a 50 mcg/hour infusion for the next five days to prevent early re-bleeding
- Antibiotic prophylaxis such as ceftriaxone IV has been associated with a decrease in infectious complications and mortality in this population and is recommended for patients with esophageal varices bleeding and cirrhosis
- Patients presenting with encephalopathy or those who develop it during their admission should be treated with lactulose
- PPIs, although commonly used in and attempt to reduce peptic complications, do not have good evidence supporting their use. If they are used, remember that most PPIs are metabolized in the liver so dosages may need to be reduced
- Endoscopic therapy is the current procedure of choice in the initial therapy of variceal bleeding and should ideally occur within 12 hours of presentation. About 80% to 90% of active bleeds can be managed with endoscopic sclerotherapy
- Balloon tamponade, once a mainstay of the management of active variceal bleeds, is difficult, dangerous and best performed by people with significant experience (of whom few are left). Having said that, it can effectively buy time to get the patient stabilized for surgery in the 10% to 20% in whom bleeding cannot be controlled endoscopically. Definitive airway management must precede its use
- Patients who fail to stop bleeding with pharmacotherapy and endoscopy should be referred for consideration of transjugular intrahepatic portosystemic shunt (TIPS) or shunt surgery

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4. *What is the risk of re-bleeding once acute hemorrhage is under control?*

Studies show that 70% of patients who experience hemorrhage from esophageal varices will have another episode of bleeding within one year. The highest risk for these patients is within the first 48 to 72 hours post initial bleeding episode with risk decreasing to almost baseline by six weeks.

5. *How should upper GI bleeding be managed once it is under control?*

Once bleeding is controlled, patients should be started (or continued) on non-selective β -blocker therapy for prevention of re-bleeding (by decreasing hepatic venous pressure) and considered for endoscopic band ligation, if not already done. The combination of β -blockers and variceal band ligation has shown to have the greatest benefit. Lifestyle modifications such as compliance with medication and cessation of alcohol use should be addressed.

Those with recurrent bleeding can be considered for TIPS or surgical shunt placement. Patients with decompensated hepatic cirrhosis may be considered for liver transplantation.

Back to our patient

After several hours of observation, Julia was discharged under the careful care of her husband. She was seen by her gastroenterologist the following morning, when she underwent band ligation of two varices. 