

INTRODUCTION

Gastrointestinal (GI) bleeding is a common medical emergency. It is diagnosed by the presence of haematemesis – vomiting of fresh/ dark red/ brown/ black or ‘coffee ground’ blood (depending on how long it has been in the stomach), melaena (malodorous, liquid, black stool) or bright red/ dark blood with clots per rectum (PR). Patients can present with a wide range of clinical severity from mild anaemia to massive, life-threatening haemorrhage.

Gastrointestinal haemorrhage is commonly divided into acute upper and lower GI bleeding:

ACUTE UPPER GI BLEEDING

Accounting for around 5,000 deaths each year in the UK, upper GI bleeding has a higher prevalence in socioeconomically deprived areas. Constituting 80% of all GI bleeds, they frequently present with a history of aspirin or non-steroidal antiinflammatory drug (NSAID) use. Only 50% of patients present with haematemesis alone, 30% with melaena and 20% with haematemesis and melaena; those with haematemesis tend to have greater blood loss than melaena alone. Patients older than 60 years account for up to 45% of all cases (60% of these women). Death is uncommon in those less than 40 years but the mortality rate, around 10%, increases steeply thereafter; almost all deaths occur in the elderly, particularly those with comorbid conditions.

Whilst upper GI bleeding may cause hypovolaemic shock, it is not ordinarily associated with pain. Common causes include:

Peptic ulcers

More than 50% of cases are due to peptic ulcers which, together with oesophagitis and gastritis, account for up to 90% of all upper GI bleeding in the elderly. Eighty five percent of deaths occur in persons older than 65 years.

Mallory-Weiss tears

Around ten percent are caused by oesophageal tears, which are more common in the young. Predisposing factors include hiatal hernia and alcoholism. Initiating factors are persistent coughing or severe retching and vomiting, often after an alcoholic binge; haematemesis presents after several episodes of non-bloody emesis. Bleeding can be mild to moderate.

Oesophageal varices

Variceal bleeding is also the cause of approximately ten percent of cases. These patients can bleed severely with up to 8% dying within 48 hours from uncontrolled haemorrhaging. It is commonly associated with alcoholic cirrhosis and increased portal pressure (causing progressive dilation of the veins and protrusion of the formed varices into the lumen of the oesophagus). Patients may become haemodynamically unstable with little warning.

ACUTE LOWER GI BLEEDING

Patients with a lower GI haemorrhage commonly present with bright red blood/ dark blood with clots PR; haematemesis or melaena usually indicating an upper GI source. Bright red blood PR, in isolation, precludes upper GI bleeding in over 98% of cases (unless the patient appears hypovolaemic). Lower GI bleeds are less likely to present with signs of haemodynamic compromise, are more prevalent in men and also have a common history of aspirin or NSAID use. The mean age is 63 to 77 years with mortality around 4% (even serious cases have rarely resulted in death). Common causes include:

Diverticulosis

Diverticular bleeding accounts for up to 55% of cases. Patients commonly present with an abrupt but painless PR bleed. The incidence of diverticular bleeding increases with age.

Inflammatory bowel disease

Major bleeding from ulcerative colitis and Crohn's disease is rare. Inflammatory bowel disease accounts for less than 10% of cases.

Haemorrhoids

Haemorrhoids also account for less than 10% of cases. Bleeding is bright red and usually noticed on wiping or in the toilet bowl. The incidence is high in pregnancy, a result of straining associated with constipation and hormonal changes. Further evaluation may be needed if the patient complains of an alteration of bowel habit and blood mixed with the stool.

HISTORY

- Is there unexplained syncope (should raise suspicion of concealed GI bleed)?
- Does the visible bleed originate from the upper or lower GI tract?
- When did the bleeding begin?
- Is there a history of GI disease?
- Is there a history of aspirin or NSAID use?
- Does the patient take beta blockers or calcium-channel blockers (would mask tachycardia in the shocked patient)?
- Does the patient take Iron tablets or have they consumed beetroot/ drinks containing red dye (may alter colour of stool)?
- Is there a history of anticoagulatory or antiplatelet therapy?
- Is there a history of bleeding disorders?
- Is there a history of liver disease/ abdominal surgery or alcohol abuse?
- Did haematemesis present after an increase in intra-abdominal pressure (from retching or coughing) and several episodes of non-bloody emesis?
- What is the character and quantity of blood loss? If not visible ask the patient or relatives to estimate colour/ volume (PR blood loss is difficult to estimate. The blood acts as a laxative, but repeated blood-liquid stool, or just blood, is associated with more severe blood loss than maroon/ black solid stool).

ASSESSMENT & MANAGEMENT

Initial priorities focus on the principles of 'Airway, Breathing, and Circulation'; identifying the source of the bleed is secondary. Patients may benefit from early endoscopy, the results from which will determine the best course of treatment, so do not delay. Prehospital management is limited but similar regardless of cause. The priority is to promote haemodynamic stability.

- Haematemesis may compromise the airway. Patients with an altered level of consciousness should be positioned flat and on their side (not supine) to prevent aspiration. Suctioning may be required.
- High flow, high concentration oxygen should be administered.
- Shocked patients may be weak, dizzy, confused, agitated, hyperglycaemic, hypotensive, tachycardic, tachypnoeic, and have pallid/ cool/ sweaty skin. Tachycardia (pulse greater than 100bpm) and hypotension (manual systolic BP less than 100mmHg) indicate haemodynamic instability. These patients should be placed in a head-down 'recovery' position to maintain cerebral perfusion.

Early IV access should be established with two large-bore cannulae placed in the antecubital fossae. A crystalloid solution should be warmed and infused slowly; judicious aliquots of 250mls should be titrated to maintain the presence of a radial pulse, which equates approximately to a systolic BP of >90mmHg.

- Rapid infusion should be avoided. Overtransfusion may encourage rebleeding or cause pulmonary/ cerebral oedema.
- A baseline ECG should be considered. Patients may present with chest pain due to decreased myocardial perfusion and increased myocardial demand. Comfort should be maintained by assessing the need for analgesia. Ensure a systolic BP of >90-100mmHg before administering IV **morphine or nalbuphine**, tailoring doses to suit individual patient requirements.

Key Points

- Haematemesis or melaena indicates an upper GI source.
- Bright red or dark blood with clots PR indicates a lower GI source.
- Almost all deaths from GI bleeds occur in the elderly.
- Around 80% of all GI bleeds stop spontaneously or respond to conservative management.
- Crystalloids should be used judiciously (250ml aliquots).

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