

# *Clinical Focus: Blood as a Presenting Complaint*

## **BLEEDING FROM THE GASTROINTESTINAL TRACT**

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### **INTRODUCTION**

This is an outline of current procedures in Lancaster and Kendal for the management of bleeding from the gastrointestinal tract, based on department of medicine guidelines produced as a consequence of medical audit.

### **UPPER GASTROINTESTINAL HAEMORRHAGE**

#### **Referral**

All patients with recent acute upper gastrointestinal haemorrhage should be admitted to the acute medical wards at the Royal Lancaster Infirmary or Westmorland General Hospital. The only possible exception to this rule is a patient in whom the bleeding has clearly stopped by the time they report to their general practitioner. For that group of patients urgent referral to outpatients or open access endoscopy is advised. It is local policy that patients with upper gastrointestinal haemorrhage are admitted under the physicians in the first place for assessment.

#### **First steps**

On admission the patient is assessed urgently to determine the degree of blood loss and whether they are haemodynamically stable. A large intravenous cannula is inserted and blood taken for full blood count, urea, creatinine, electrolyte and blood group. If transfusion is indicated immediate cross-match is requested. Alternatively the serum should be saved. A full history and clinical examination is then undertaken. The patient will be assessed specifically for known causes of upper gastrointestinal haemorrhage such as history of peptic ulceration, history of aspirin or NSAID ingestion or history of liver disease.

#### **The haemodynamically unstable patient**

Transfusion is indicated in all patients haemodynamically compromised (thirst, air hunger, tachycardia, hypotension, postural hypotension).

The haemoglobin on admission is not, by itself, an indication that transfusion is required, but if greater than 10g/dl gelofusine may be adequate to replace volume loss. If the haemoglobin is less than 10g/dl blood transfusion will be needed. Whole blood should be given for the first four units, after which plasma-reduced blood may be appropriate. Massive blood transfusion (loosely defined as the transfusion of a patient's blood volume in less than 24 hours, ie between eight and ten units of blood) will produce thrombocytopenia and abnormal coagulation tests even in a previously normal

individual, but not usually a generalised bleeding tendency. If the platelet count falls to less than 50 then platelet concentrate should be transfused. A reasonable dose is one 4-unit harvest pack or four individual concentrates per 8-10 units of blood. A long intravenous line for central venous pressure (CVP) monitoring may be appropriate in the elderly, those with cardiovascular disease (cardiac failure or recent myocardial infarction) and for those in renal failure. However a CVP line is no substitute for careful bedside clinical monitoring.

#### **The stable patient**

If the patient is stable a blood transfusion should be given if the haemoglobin is less than 8g/dl and then plasma-reduced blood should be used. An ECG will be done on all older patients. Liver function tests should be done routinely on all patients. If the history and examination suggest liver disease then the prothrombin time, partial thromboplastin time and platelet count should be checked. Serious coagulation disturbance is most likely when there is a pre-existing problem such as chronic liver disease. The interpretation of coagulation tests after massive transfusion of bank blood is difficult but generalised bleeding is very likely when the fibrinogen falls to less than 1.0gm/l. In these cases, transfusion of four units of fresh frozen plasma is recommended.

Blood and blood products are easily available in Lancaster thanks to the proximity of the transfusion centre. It is important, however, to involve a consultant haematologist in the management of these patients, both to discuss policy and to facilitate issue of the appropriate products.

#### **Endoscopy**

Upper GI endoscopy should be done within 24 hours of admission for diagnosis. Patients with continued severe bleeding or with symptoms and signs to suggest oesophageal varices should have an emergency endoscopy performed as soon as the patient is haemodynamically stable. In the Lancaster district there is a routine endoscopy list on five days a week and patients with upper GI haemorrhage should be added to the next endoscopy list. Emergency endoscopies at other times are currently performed in theatre by the on-call surgical team. Stable patients admitted at the weekend wait for the Monday list. In Kendal there are three or four routine lists a week. Patients requiring urgent endoscopy at other times are transferred to Lancaster.

#### **Continued bleeding**

Early consultation with the on-call surgical team is advised for those patients with severe haemorrhage, continuing

haemorrhage, or in whom endoscopy shows a peptic ulcer with continuing haemorrhage, signs of recent haemorrhage or a visible end vessel. Oesophageal varices are treated in the first instance by sclerotherapy and balloon compression with a Sengstaken tube. The place of drugs to reduce portal venous pressure is not fully established but it is customary to give octreotide by intravenous infusion to patients with acute variceal haemorrhage.

Medical treatment depends on the nature of the lesion shown at endoscopy and follows normal treatment lines. The routine administration of oral or intravenous H<sub>2</sub> antagonists or proton pump inhibitors prior to diagnosis is not indicated.

## BLEEDING FROM THE LOWER GASTROINTESTINAL TRACT

Patients with clear fresh bleeding from the lower gastrointestinal tract are normally admitted under the surgeons since the pathology shown is likely to be surgical rather than medical. The exception is diarrhoea with bleeding which normally indicates a medical condition, either colitis or an infective gastroenteritis. In addition to the investigation and management of those haemodynamically unstable as outlined above, the patient will require stool culture if they have diarrhoea and all patients will require early sigmoidoscopy or colonoscopy with mucosal biopsy to determine the cause of the bleeding.

## FOLLOW-UP

All patients with gastric ulceration need a follow-up endoscopy 4-8 weeks after diagnosis to ensure that the ulcer has healed with treatment. Gastric ulcers which do not heal medically should be considered for surgical treatment. I do not normally follow up duodenal ulcers endoscopically unless they are very large ulcers at risk of further bleeding, or totally symptomless in which case it is not possible to tell from the patient's symptoms whether or not the ulcer has healed. Oesophageal varices which have bled will be followed up by repeated injection sclerotherapy until the varices are totally ablated. The frequency of treatments will vary according to

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the size of the varices and the pressure within them but may be weekly at first, and subsequently monthly. The results of sclerotherapy are good but some patients may develop a stricture of the oesophagus as a result of the scarring and the prognosis in these patients depends on the underlying liver disease. Patients with oesophageal varices should be maintained in the long term on propranolol to reduce portal venous hypertension. Patients who are demonstrated at endoscopy to be helicobacter pylori positive can be followed up by serology on either blood or saliva at six months following eradication therapy.

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## OCCULT BLEEDING

There is a very difficult group of patients who either have recurrent episodes of melaena or recurrent episodes of iron deficiency anaemia related to gastrointestinal blood loss in whom standard investigations have shown no abnormality. In my opinion, the most important investigations in these patients are to repeat the gastroscopy since ulcers and other pathology can be missed particularly in patients who were bleeding at the time of the first examination, and to arrange a full colonoscopy to the caecum looking for angiodysplasia in the ascending colon or a caecal carcinoma which has been missed on previous investigation. If repeat upper and lower GI endoscopy are normal then the important next step is to investigate patients while actively bleeding and to ensure that patients are admitted immediately if they develop even minor symptoms of gastrointestinal blood loss. These patients may require mesenteric angiography or isotope scanning after injection of labelled red cells to determine the site of the bleeding. These tests are only valuable when active bleeding is taking place. If the site of blood loss is determined then surgical treatment should be discussed.

## FUTURE DEVELOPMENTS

In an ideal world, patients with upper GI haemorrhage should be managed in a joint medical and surgical gastroenterological ward with an adjacent designated endoscopy suite. That suite should be staffed seven days a week and have X-ray facilities so that all emergencies could be endoscoped within 24 hours of admission (or earlier if need be, as in the case of oesophageal varices) and operative endoscopy such as ERCP and insertion of oesophageal tubes could be done in the designated endoscopy unit. There are no plans for any such development in Lancaster. A recent audit of the management of upper GI haemorrhage by the department of general medicine demonstrated a significant delay in endoscopies for patients admitted over the weekend. A weekend endoscopy list on a Sunday morning has been discussed but has not yet achieved a place in the business plan.

The best test to determine that helicobacter pylori infection has been eradicated is a carbon isotope urea breath test. To develop the facility to carry out this test in the Lancaster district would undoubtedly improve the management of all patients with helicobacter pylori-related pathology in the upper GI tract.

In spite of any apparent deficiencies in the current services to patients with acute upper GI haemorrhage admitted to the hospitals in Lancaster and Kendal my repeated audits of their management over the past 20 years have not demonstrated that they fare less well than patients treated in centres of excellence.

## Acknowledgement

I am grateful to Dr Gorst for his advice on the use of blood and blood products in patients with massive blood loss.