Acute colonic bleeding shown on CT

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Patient: 73 years, male

Clinical History:

A patient presented with massive acute gastrointestinal bleeding. The bleeding point in the transverse colon was identified on CT. Angiography was then carried out, and the bleeding point successfully embolised.

Imaging Findings:

A patient 10 days post colonoscopy and polypectomy, who was on clopidogrel and aspirin, was admitted to our hospital with melaena. While in hospital, he had massive fresh rectal bleeding requiring transfusion of 10 units of blood and fresh frozen plasma.

CT scanning was carried out to identify and localise the source of bleeding, using a 16-slice scanner (Toshiba Aquilion). Non-contrast enhanced imaging was followed by post contrast imaging (100 ml Optiray 350 at 4 ml/s) in the arterial and portal phases.

High attenuation was seen in the lumen of the transverse colon just distal to the hepatic flexure on arterial and portal phase images, due to active extravasation of contrast at this site. High attenuation was not present in this location in the corresponding non-contrast images. Although the exact bleeding point was not identified, CT angiographic images did depict the artery supplying the segment of the transverse colon where contrast extravasation was seen.

Catheter angiography was then carried out. Based on the CT findings, the angiographer proceeded directly to selective angiography of the superior mesenteric artery. The bleeding point was not well seen in the initial superior mesenteric angiogram, but based on the CT angiographic findings, a selective injection of the middle colic branch was carried out, which showed a contrast blush, confirmed bleeding into the transverse colon, at the location shown on CT. Superselective embolisation of the bleeding point was carried out, which resulted in cessation of bleeding, with no subsequent recurrence.

Discussion:

Arterial-phase multidetector CT has been shown to be a highly sensitive and specific test for the detection and localisation of acute massive gastrointestinal bleeding.

Haemorrhage is shown by a high attenuation area within the bowel lumen which is due to active extravasation of intravenous contrast. A preliminary non-contast CT scan is also carried out to avoid false positives due to pre-existing areas of high attenuation which may be due to calcification, old barium within diverticula, or ingested material. Portal phase imaging is not always necessary but may provide additional useful information. However this has to be balanced against the increased radiation dose from the additional acquisition.

In our patient, CT also helped identify the vessel supplying the bleeding point, which was not clearly seen in the
initial superior mesenteric angiogram.

At our hospital, CT is the first line investigation in patients with acute, massive gastrointestinal haemorrhage. This shortens the duration of angiography by allowing the angiographer to proceed directly to the relevant vessel. If CT is negative, angiography may be deferred, depending on clinical circumstances.

**Differential Diagnosis List:** Massive delayed haemorrhage in transverse colon following polypectomy

**Final Diagnosis:** Massive delayed haemorrhage in transverse colon following polypectomy

**References:**


Figure 1

Description: Non-contrast image

Origin:
Description: Arterial phase image showing high attenuation in transverse colon, not present in the noncontrast image, consistent with extravasated contrast due to active bleeding. Origin:
Description: On the delayed image, contrast is still present in the bowel lumen. Origin:
Description: Superior mesenteric arteriogram. The bleeding point is not well seen. Origin:
Description: Selective injection of middle colic branch shows contrast blush indicating bleeding point.
Origin:
Description: CT angiogram for comparison. Origin:
Description: Superselective injection of feeding vessel prior to embolisation. The bleeding point is seen more clearly. Origin:
Description: Embolisation coil deployed. Origin:
Figure 3

Description: Labelled image showing aorta, superior mesenteric artery, and middle colic branch.

Origin:
Description: The middle colic branch is shown supplying the segment of transverse colon where contrast extravasation has occurred. Origin:
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