Massive Hematemesis Secondary to Duodenal Ulcer

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Clinical History:

- 21 yo female presents with massive hematemesis and melena. Hematocrit drop to 14%.
- After hemodynamic stabilization an upper endoscopy (UE) was performed.
- UE revealed abundant clot and fresh blood in gastric and duodenal lumen. Despite gastric irrigation, the amount of intraluminal hemorrhage impeded detection of the possible bleeding site.
- CTA of the abdomen and pelvis was performed.
GI Bleeding
Axial, non-contrast CT images from the upper abdomen: There is marked distension of the duodenal lumen by spontaneously hyperdense blood clot (*).
Axial and coronal MPR CT images obtained in the arterial and venous phase demonstrate active contrast extravasation (AE) into the duodenal lumen (→). Focus of AE changes in shape, size and density from one phase to the other. No underlying duodenal or pancreatic abnormality is seen.
Superior mesenteric arteriogram (common trunk with celiac axis) demonstrates subtle area of extraluminal contrast blush from anterior pancreaticoduodenal arcade (→) concordant with focus of AE depicted in MIP & VR CTA images, arterial phase (→). Subsequent embolization was successfully performed.
Upper endoscopy performed 2 months after discharge demonstrates a healing post bulbar duodenal ulcer, surrounded by an edematous ring of mucosa, without signs of recent bleeding.
Teaching Points:

- Initial diagnosis and management of massive upper GI bleeding (UGIB) is done with emergent (within 24 hours) upper endoscopy: it reveals the site and source of bleeding in 95% of cases (ACG practice guidelines).

- Visceral arteriography and trans catheter embolization should be considered in non-variceal UGIB after negative endoscopy, especially if hemodynamic stabilization is not achieved (ACR Appropriatness Criteria®).

- CTA is a second-line examination reserved for cases with acute UGIB when endoscopy demonstrates non-variceal bleeding without a clear source (ACR Appropriatness Criteria®). It may replace arteriography, especially in hemodynamically stable patients, serving as a road map for subsequent visceral arteriography.
References