Fall down stairs. Left rib fractures.

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Splenic lacerations, hemoperitoneum, and traumatic pseudoaneurysm formation.
CT abdomen with contrast, axial

- Linear hypoattenuation within the splenic parenchyma, consistent with lacerations
- Homogeneous, intermediate density material, consistent with hemoperitoneum
- High attenuation extraluminal contrast material, suggesting active extravasation.
CT abdomen with contrast, coronal

Homogeneous, intermediate density material, consistent with hemoperitoneum in the right and left subdiaphragmatic spaces and pericolic gutters.

Low attenuation of the superior portion of the spleen suggesting intraparenchymal hematoma vs. infarction.

Linear hypoattenuation within the splenic parenchyma, consistent with lacerations.

High attenuation extraluminal contrast material, suggesting active extravasation.

CT abdomen with contrast, coronal
Digital subtraction angiography, splenic artery superselected.

A well-circumscribed, circular focus (dashed-red circle) of contrast dye, similar in density to the blood pool suggests pseudoaneurysm formation.

Multiple foci of contrast “blush”, suggesting active extravasation.
Contrast extravasation and probable pseudoaneurysm are no longer seen – downstream of the occluded splenic artery.

Multiple intravascular coils injected into the splenic artery.

Digital subtraction angiography, splenic artery superselected, post-coiling.
Splenic Trauma

• Can occur after blunt or penetrating trauma. The spleen is the most frequently injured intra-abdominal organ after blunt trauma.
• Types:
  – Laceration
  – Hematoma – subcapsular (more common) or intraparenchymal.
  – Active Hemorrhage
  – Pseudoaneurysm
  – Splenic infarction.
• Evaluation: FAST ultrasound, CT, DSA
Splenic Trauma

- **FAST Ultrasonography:**
  - Positive for free fluid. May demonstrate disruption to the splenic echotexture indicating laceration, or hypoechoic regions suggesting hematoma formation.

- **CT:** Modality of choice for assessing splenic trauma:
  - Lacerations – linear or branching hypodensities.
  - Subcapsular hematoma – low-density fluid adjacent to the spleen that disrupts the splenic architecture.
  - Active Hemorrhage – high density extravasated contrast material that increase in size on delayed phases.
  - Pseudoaneurysm – similar in appearance to active hemorrhage but do not increase in size on delayed phases and follow the blood pool.
Splenic Trauma

• DSA:
  – Extravasation of contrast agent (blush) is indicative of active bleeding.
  – A well-circumscribed collection of contrast that does not change size and follows the blood pool contrast is suggestive of pseudoaneurysm formation.

• Treatment:
  – Transcatheter splenic artery embolization
  – Typically performed using coils, but particles and glue also used.
Splenic Trauma

- Splenic artery embolization complications:
  - Left pleural effusion and atelectasis (20-50%)
  - Splenic infarct (~3%) (distal only, with proximal the goal is to completely cut off supply to the spleen).
  - Splenic abscess (~2%)
References:

1. Radiopedia


