

CT Evaluation of Blunt Abdominal Trauma

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📁 Radiology

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Examination

- Multidetector CT is gaining wide popularity because its dramatic increase in speed (_____ than single slice helical CT) allows for rapid assessment of head, neck, spine, thoracic aorta, abdominal, and pelvic injuries in a manageable timeframe.**
 - 2 times greater
 - 3 times greater
 - 4 times greater
 - 5 times greater
 - 6 times greater
- Intravenous contrast is essential for evaluating solid parenchymal and vascular injuries. Intravenous contrast is most often administered as a uniphasic bolus at a rate of 2-3 ml/sec. For abdominal imaging, scanning is initiated after a**
 - 50 sec. delay for a single slice helical CT & after 80 sec. for multidetector CT
 - 70 sec. delay for a single slice helical CT & after 50 sec. for multidetector CT
 - 80 sec. delay for a single slice helical CT & after 40 sec. for multidetector CT
 - 70 sec. delay for a single slice helical CT & after 80 sec. for multidetector CT
 - 60 sec. delay for a single slice helical CT & after 90 sec. for multidetector CT
- The role of oral contrast in CT for blunt trauma is controversial. Although proven to be safe, some surgeons feel that it leads to unnecessary delays. Other groups feel that it aids substantially in diagnosing**
 - bowel injuries
 - renal injuries
 - pancreas injures
 - liver injuries
 - spleen injuries
- Intravenous contrast enhancement of vascular structures and solid viscera is a key reason for the success of CT in trauma. Intraparenchymal hematomas and lacerations alter the perfusion of contrast and are generally _____ in attenuation than normally perfused parenchyma on contrast CT.**
 - slightly lower
 - significantly lower
 - slightly higher
 - significantly higher
 - equal to
- Urine, bile, chyle and ascites fluid typically have attenuation values of _____.**
 - less than 15 HU
 - 15-25 HU
 - 25-40 HU
 - 40-60 HU
 - 70-100 HU
- Clotted blood has an attenuation value that is on the order of _____.**
 - less than 15 HU

- b. 15-25 HU
 - c. 25-40 HU
 - d. 40-60 HU
 - e. 70-100 HU
7. **Areas of active arterial extravasation appear as density fluid collections that are iso-dense with adjacent major arterial structures, often on the order of _____.**
- a. less than 15 HU
 - b. 15-25 HU
 - c. 25-40 HU
 - d. 40-60 HU
 - e. 70-100 HU
8. **The anatomic location of arterial extravasation is critical for directing patient management. Patients with extraperitoneal arterial extravasation from a lumbar arterial source are best treated with _____.**
- a. delayed angiographic embolization
 - b. immediate surgical dissection
 - c. immediate angiographic embolization
 - d. delayed surgical dissection
 - e. combined surgical dissection and angiographic embolization
9. **Which of the following statement is true?**
- a. The collapsed inferior vena cava sign refers to the fact that patients who have undergone substantial blood loss may have poor cardiac function.
 - b. Clotted blood will be of lower attenuation than free lysed blood elsewhere in the peritoneal cavity.
 - c. Active arterial extravasation due to parenchymal and vascular injuries will be of lower attenuation than free lysed blood elsewhere in the peritoneal cavity.
 - d. The sentinel clot sign is not useful in identifying occult sources of injury.
 - e. The attenuation of blood is highest in close proximity to sites of injury.
10. **Because general anesthesia results in vasodilatation, vigorous volume replacement should be initiated prior to surgery in patients with the collapsed inferior vena cava sign. Failure to recognize this fact may result in ischemic injury to the _____ during crash induction of anesthesia.**
- a. liver
 - b. pancreas
 - c. intestinal tract
 - d. brain
 - e. spleen
11. **Which of the following statements is true?**
- a. Frank shock may be evident on CT due to vasoconstriction of the splanchnic vasculature with marked arterial constriction of the mesenteric arteries.
 - b. The kidneys may demonstrate telltale signs of shock due to a rapid appearance of the nephrographic phase.
 - c. The spleen may be swollen in size due to vasoconstriction of the splenic artery.
 - d. The kidneys may demonstrate telltale signs of shock due to evidence of rapid renal excretion.
 - e. There are no definitive signs for frank shock that can be seen on CT.
12. **There is growing awareness of the unique immunologic contribution of the spleen in fighting encapsulated bacteria. This has led to a trend in trauma surgery toward splenic conservation. In addition to parenchymal sparing surgery, there has been an attempt made to treat some splenic injuries without operative interventions. These non-operative management strategies have been particularly true in**
- a. adult patients

- b. geriatric patients
- c. pediatric patients
- d. female patients
- e. neonates

13. Which of the following statements is true?

- a. Trauma surgeons classify splenic injuries according to the extent of hemorrhage only.
- b. Attempts at classifying splenic injuries with CT have been very successful.
- c. Relatively trivial splenic injuries may result in a delayed hemorrhage, that at times can be major.
- d. All patients with extensive splenic injuries require operative management.
- e. CT has not had much success in diagnosing active bleeding from splenic trauma.

14. Regarding hepatic trauma, left lobe injuries may be associated with a midline vector force that can injure the

- a. left kidney and adrenal gland
- b. pancreas and transverse colon
- c. left lung and rib cage
- d. stomach and small intestine
- e. spleen and the mesentery

15. The kidney is often injured after blunt abdominal trauma but rarely requires surgical intervention. Well over _____ of renal injuries can be managed with conservative therapy.

- a. 55%
- b. 65%
- c. 75%
- d. 85%
- e. 95%

16. The most devastating form of renal injury is one that involves _____

- a. peri-renal hemorrhage
- b. the renal pedicle
- c. the renal cortex
- d. a subcapsular hematoma
- e. a renal segment

17. The most common sites of injury to the GI tract are at locations where the bowel is tethered by adjacent mesenteric or peritoneal ligaments. These include which of the following?

- a. jejunum just proximal to the ligament of Treitz
- b. stomach
- c. transverse colon
- d. ascending colon
- e. duodenum just after the pylorus

18. Signs of blunt trauma to the bowel are often subtle on CT. An extremely important fact to remember is that there is normally little or no bowel gas in the _____ and thus, a perforation may occur without evidence of pneumoperitoneum.

- a. proximal ileum
- b. distal ileum
- c. proximal jejunum
- d. proximal duodenum
- e. cecum

19. Often the most evident findings of pancreatic injury are post-traumatic pancreatitis with blood, edema, and soft tissue infiltration of the anterior pararenal space. The most common site of

pancreatic injury is _____.

- a. at the junction of the body and tail
- b. at the junction of the head and body
- c. at the junction of the pancreas to the small bowel
- d. one that involves the pancreatic duct
- e. actually just superior to the pancreas itself

20. All of the following statements are true EXCEPT

- a. Surgical classification of pancreatic injuries largely depends upon the depth of the laceration and the status of the main pancreatic duct.
- b. In patients with transection of the duct, morbidity and mortality greatly increase unless surgery is undertaken within the first 24 hours.
- c. In patients with strong clinical evidence of pancreatic injury and an equivocal CT scan, emergency ERCP may be quite valuable in patient management.
- d. In patients with a pancreatic contusion or superficial lacerations without ductal disruption, conservative management may be warranted.
- e. It is important to remember that CT can directly identify ductal disruption.



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