

A 64-year-old man is brought to the emergency department after a motor vehicle collision. He was the restrained driver when a truck hit his car on the driver's side at an intersection. He was dazed for several minutes after the collision and subsequently began to experience left chest and leg pain. His blood pressure is 94/61 mm Hg and pulse is 117/min. Pulse oximetry shows 96% on room air. The patient is conscious and answers questions appropriately. He is wearing a cervical collar. Physical examination shows multiple facial lacerations and bruises on the left chest wall. Pupils are equal and reactive to light. Heart sounds are normal. The trachea is midline. Bilateral breath sounds are present. The abdomen is diffusely tender. There is obvious deformity and tenderness of his left thigh. Which of the following is the best immediate step in management of this patient?

- ☐ A. Chest CT scan with contrast
- ☐ B. Echocardiography
- ☐ C. Focused bedside ultrasound
- ☐ D. Head CT scan without contrast
- ☐ E. Left femur radiography

Submit



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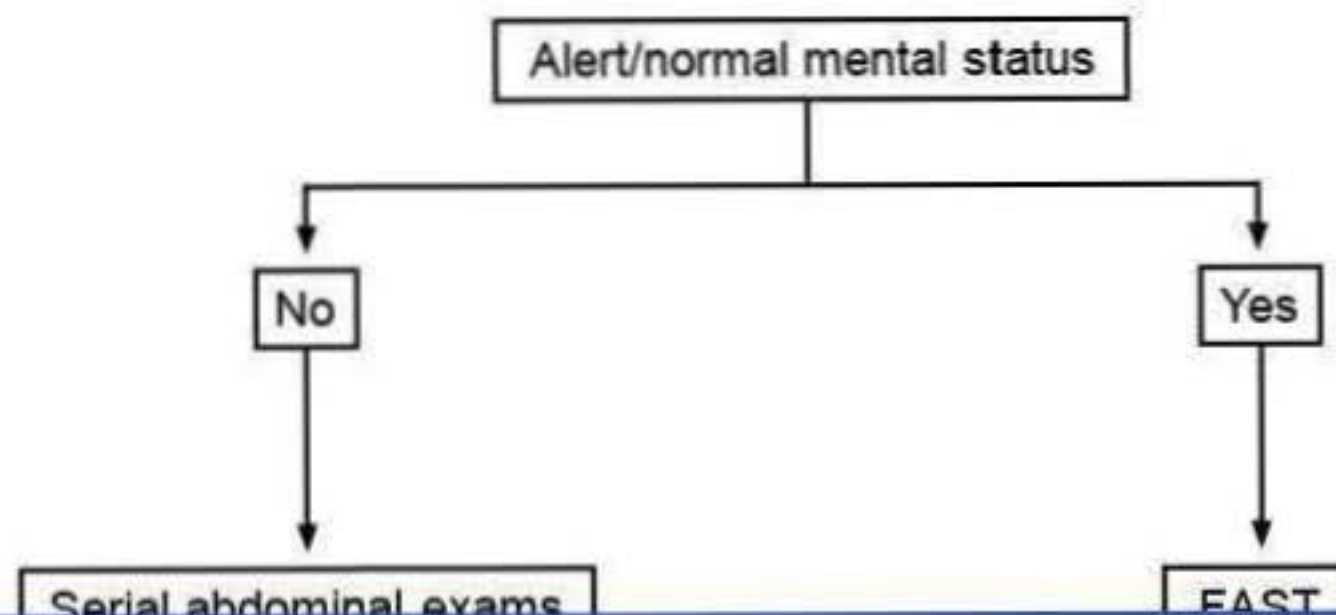
- ☐ A. Chest CT scan with contrast [4%]
- ☐ B. Echocardiography [1%]
- ☒ C. Focused bedside ultrasound [74%]
- ☐ D. Head CT scan without contrast [15%]
- ☐ E. Left femur radiography [6%]

Proceed to Next Item

Explanation:

User Id: [redacted]

### Management of blunt abdominal trauma in hemodynamically stable patients



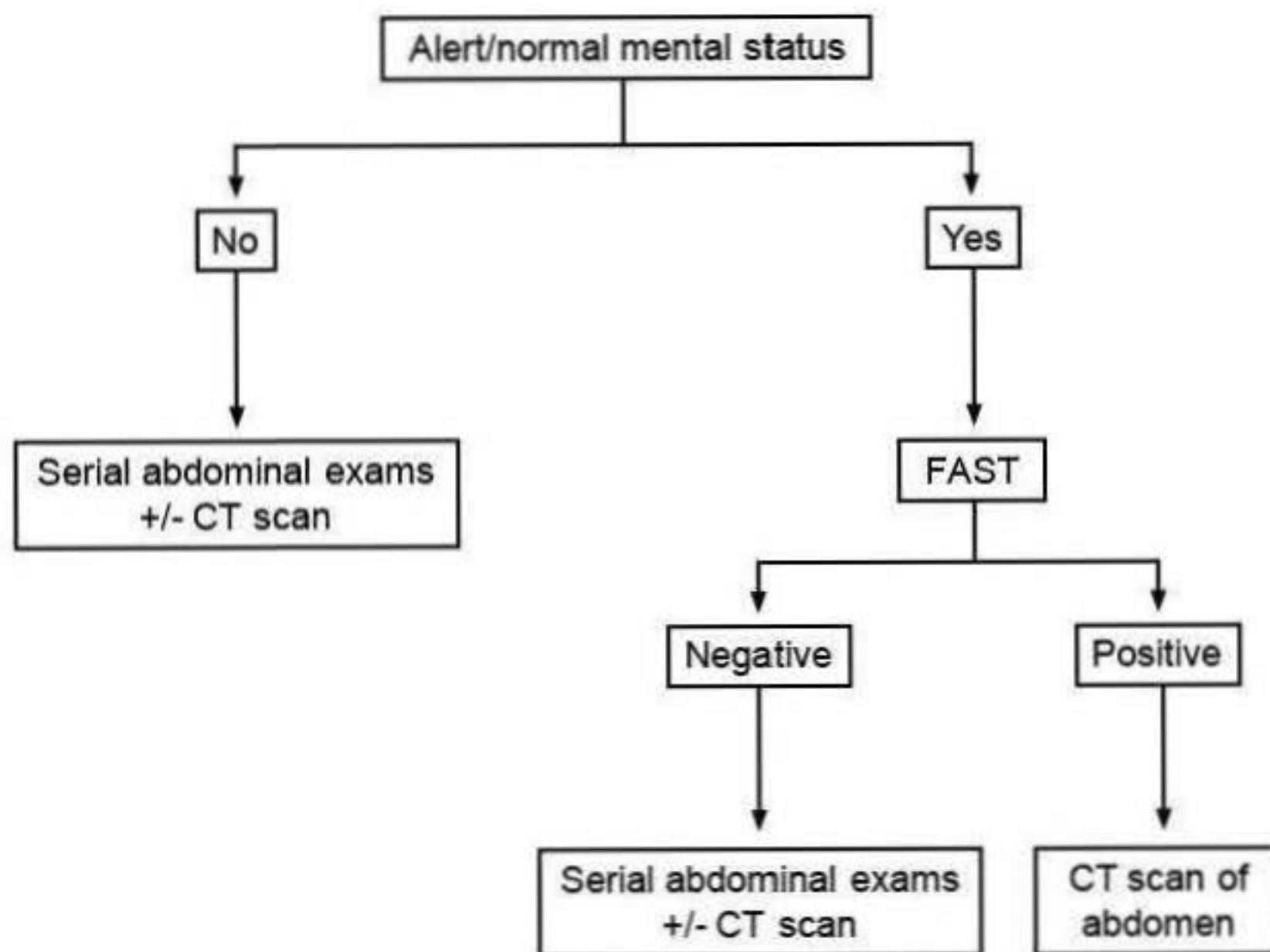


Proceed to Next Item

Explanation:

User Id: [redacted]

## Management of blunt abdominal trauma in hemodynamically stable patients



FAST = Focused Assessment with Sonography for Trauma.

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This patient presents after a motor vehicle collision with diffuse abdominal tenderness concerning for **blunt abdominal trauma** (BAT), which places him at significant risk of intra-abdominal injury. A number of signs are suggestive of serious intra-abdominal injury, including "seat belt sign" (ecchymosis over the abdomen in the pattern of a seat belt), hypotension, rebound tenderness, abdominal guarding/distension, and coexisting femur fracture.



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This patient presents after a motor vehicle collision with diffuse abdominal tenderness concerning for **blunt abdominal trauma** (BAT), which places him at significant risk of intra-abdominal injury. A number of signs are suggestive of serious intra-abdominal injury, including "seat belt sign" (ecchymosis over the abdomen in the pattern of a seat belt), hypotension, rebound tenderness, abdominal guarding/distension, and coexisting femur fracture.

The first step after fluid resuscitation is to determine if a patient needs surgical management. Patients with BAT should be assessed for intraperitoneal free fluid or hemorrhage. The most commonly used approach is the **Focused Assessment with Sonography for Trauma** (FAST), which evaluates both the abdomen and pericardium for evidence of organ injury or hemorrhage; it should be the first step in **alert** and **hemodynamically stable** (eg, systolic blood pressure >90 mm Hg) patients.

FAST can be performed rapidly at the bedside and has good sensitivity and specificity for detecting hemoperitoneum, pericardial effusion, and intraperitoneal fluid. If FAST is limited or equivocal, a diagnostic peritoneal lavage (DPL) can be done to evaluate for hemoperitoneum. Hemodynamically stable patients with positive findings may undergo subsequent testing with abdominal CT scan to determine the need for laparotomy. Hemodynamically unstable patients with a positive finding on either DPL or FAST should undergo exploratory laparotomy.

**(Choice A)** Chest CT scan is indicated in hemodynamically stable patients with multisystem injury and suspected injury to the aorta and those with an abnormal chest x-ray showing mediastinal abnormalities.

**(Choice B)** Formal echocardiography does not have a role in the rapid evaluation of trauma patients. The FAST examination includes evaluation for cardiac tamponade, one of the most important reversible causes of shock due to trauma. Echocardiography can be helpful in patients with hemodynamic compromise due to heart failure or myocardial infarction.

**(Choice D)** This patient with BAT should be evaluated for intra-abdominal injury and has no high-risk criteria for head injury requiring emergent head CT (eg, low Glasgow Coma Scale score, signs of basilar fracture, repeated vomiting).

**(Choice E)** Evaluation of the femur fracture is a lower priority in a patient with BAT and hemodynamic instability than a focused evaluation for evidence of hemorrhage.

#### Educational objective:

All patients with blunt abdominal trauma, even those without specific signs of intra-abdominal injury, should be assessed for intraperitoneal hemorrhage. The most



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#### **Educational objective:**

All patients with blunt abdominal trauma, even those without specific signs of intra-abdominal injury, should be assessed for intraperitoneal hemorrhage. The most commonly used approach for alert and hemodynamically stable patients is the Focused Assessment with Sonography for Trauma.

#### **References:**

1. [Correlation between intra-abdominal free fluid and solid organ injury in blunt abdominal trauma.](#)
2. [The occasional ED ultrasound: focused assessment with sonography for trauma \(FAST\).](#)