

Focal Assessment with Sonography in Trauma (FAST)

A Report of Two Cases

Overview

Focal Assessment with Sonography in Trauma (FAST) is a rapid and effective bedside ultrasound examination of patients presenting to the Emergency Department (ED) with potentially life-threatening injuries. Internal hemorrhage is a frequent and common sequela particularly of blunt and penetrating trauma to the chest and abdomen. Ultrasound is an ideally suited non-invasive method of identifying abnormal fluid collections associated with these types of injury and FAST examinations have proven to be essential in reducing morbidity and mortality in many trauma patients.^{1,2,3,4}

FAST examinations are performed using a small footprint, broad bandwidth transducer with directed imaging of the heart, thorax, abdomen and pelvis. Imaging of the heart is targeted toward identifying pericardial effusions and significant alterations in cardiac dynamics. Positive ultrasound

findings in the thorax may include hemothorax, pleural effusions and pneumothorax. Abdominal and pelvic assessment may demonstrate fluid collections in Morrison's pouch (RUQ), perisplenic space (LUQ), pericolic gutters, perihepatic spaces, and subdiaphragmatic spaces. In the pelvis, fluid collections may be identified in the pouch of Douglas in women or behind the urinary bladder in men.

Case 1

An 84 year-old female presented to the ED with complaints of abdominal pain worsening over two days. On physical examination, she was distended and diffusely tender with a systolic blood pressure of 88. Bedside ultrasound with the Z.One PRO revealed thickened, dilated loops of bowel with free fluid in the right upper quadrant. (Figure 1) She was aggressively resuscitated and a later CT scan confirmed the diagnosis of small bowel obstruction.

See reverse side for case 2

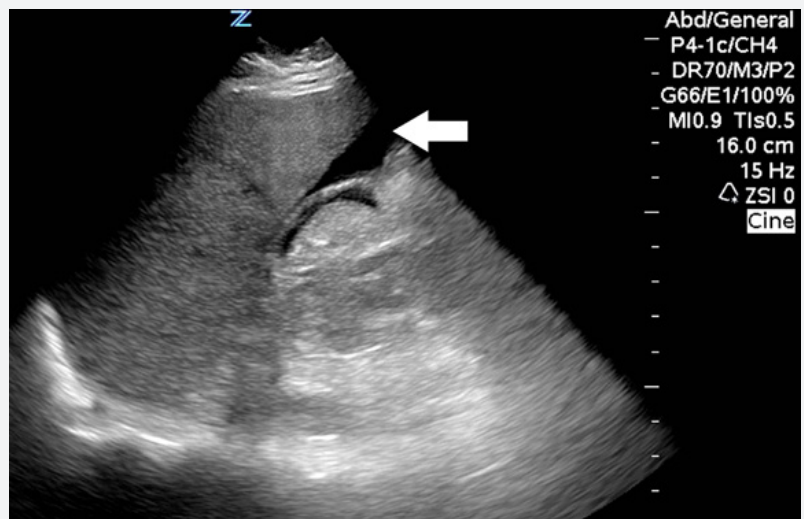


Figure 1. Free fluid in the left upper quadrant (arrow).

Case 2

A 42 year-old male presented to the ED complaining of upper abdominal pain after a fall from a bicycle. His systolic blood pressure was 100. FAST exam performed with a traditional beamforming ultrasound platform raised the suspicion of free fluid in the left upper quadrant, however, it could not be confirmed. The Z.One PRO was brought to bedside and intercostal scanning through the left flank was performed which clearly revealed a trace amount of free fluid in the splenic hilus. (Figure 2) A small splenic laceration was confirmed with subsequent CT scan.

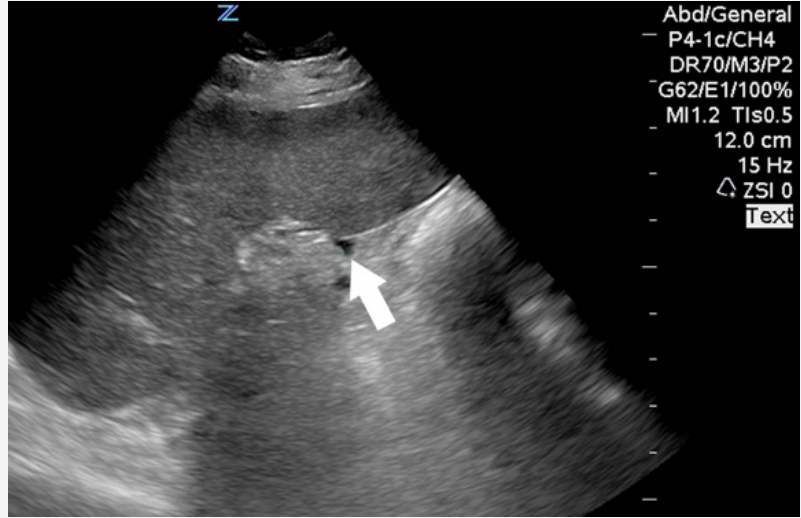


Figure 2. Trace amount of fluid in the splenic hilus (arrow).

Conclusion

Identification of large blood and fluid collections can be reliably accomplished with virtually any ED ultrasound system on the market today. Identification of subtle trace amounts of fluid, particularly in patients of large habitus, however, requires exceptional spatial and contrast resolution at all imaging depths. The ZONARE Z.One PRO powered by proprietary ZONE Sonography™ Technology offers exceptional depth penetration (up to 30 cm) while maintaining unmatched image detail from skin line to deepest depths.



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References

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