



PROCEDURE CHECKLIST

Ultrasound: eFAST, aorta and vascular access

Point-of-care ultrasound to detect free fluid, pericardial fluid, pneumothorax and haemothorax in trauma (eFAST), screen the abdominal aorta for aneurysm, and guide vascular access.



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Patient reference

Date

Time

Completed by

Equipment ready

- ☐ Ultrasound machine with appropriate presets
- ☐ Curvilinear (abdominal) probe; phased-array probe for cardiac views; high-frequency linear probe for lung sliding and vascular access
- ☐ Ultrasound gel, sterile gel and sterile probe covers for procedures
- ☐ Probe cleaning wipes per manufacturer and infection-prevention policy
- ☐ Image storage / reporting system

Before · Preparation

- ☐ Decide the clinical question you are answering (e.g. 'Is there free fluid?', 'Is there an aneurysm?').
- ☐ Introduce yourself, explain the scan and obtain verbal consent where possible.
- ☐ Enter patient details on the machine so images can be stored.
- ☐ Select the correct probe and preset; orientate the probe marker to the patient's right or head, matching the screen marker.
- ☐ Position the patient supine; dim the lights if possible.
- ☐ Perform hand hygiene and clean the probe.

During · eFAST — abdomen

- ☐ Right upper quadrant: curvilinear probe in the right mid- to posterior axillary line at the 8th–11th rib spaces, marker to the head; view the hepatorenal space (Morison's pouch), including the caudal tip of the liver.
- ☐ Look above the diaphragm in the same view for haemothorax (anechoic fluid, loss of mirror image, visible spine above the diaphragm).
- ☐ Left upper quadrant: probe more posterior and higher, posterior axillary line; view the splenorenal space and the subphrenic space between spleen and diaphragm, and above the diaphragm for haemothorax.
- ☐ Pelvis: probe just above the pubic symphysis in transverse and sagittal planes; look behind the bladder (rectovesical pouch in men, pouch of Douglas in women).

During · eFAST — heart and lungs

- ☐ Subxiphoid cardiac view: probe flat under the xiphisternum aimed at the left shoulder; look for pericardial fluid (anechoic stripe) and cardiac activity; use the parasternal long-axis view if subxiphoid is poor.
- ☐ Anterior lungs: linear or curvilinear probe in the second or third intercostal space, mid-clavicular line, then lower anterior and lateral points on each side.
- ☐ Look for lung sliding at the pleural line and B-lines; use M-mode to see the 'seashore' (normal) or 'barcode' pattern (no sliding).
- ☐ Look for a lung point, which confirms pneumothorax.
- ☐ Repeat the eFAST if the patient's condition changes.

During · Aorta

- ☐ Curvilinear probe in the epigastrium, transverse, marker to the patient's right; identify the vertebral body and the aorta anterior and slightly to the left of it (inferior vena cava to the right).
- ☐ Follow the aorta distally from the coeliac axis and superior mesenteric artery to the bifurcation near the umbilicus, then into the iliac arteries.
- ☐ Measure the maximum diameter in transverse view from outer wall to outer wall (anterior–posterior), and confirm in longitudinal view.
- ☐ An abdominal aortic diameter of 3 cm or more is an aneurysm.
- ☐ **Do not use ultrasound to exclude rupture: a patient with an aneurysm and hypotension, pain or collapse must be referred immediately to vascular surgery.**
Retroperitoneal haemorrhage is usually not visible on ultrasound.

During · Vascular access

- ☐ Use the linear probe; scan the target vessel and identify vein (compressible, non-pulsatile, thin-walled) and artery (pulsatile, non-compressible); use colour Doppler if unsure.
- ☐ Choose a vein that is straight, of adequate size and not too deep for the cannula length (at least two-thirds of the cannula should lie within the vein).
- ☐ For procedures, use full asepsis with a sterile probe cover and sterile gel.
- ☐ Out of plane (short axis): centre the vein on the screen, insert the needle at the probe midpoint and 'walk' the tip down by sliding the probe as the needle advances.
- ☐ In plane (long axis): align the needle along the length of the probe so the whole shaft and tip are visible.
- ☐ Keep the needle tip in view at all times; confirm the tip inside the vessel before advancing the cannula or guidewire.

After · Interpretation and action

- ☐ State findings as positive, negative or indeterminate for each view, and act on the clinical question.
- ☐ **A negative FAST does not exclude intra-abdominal, retroperitoneal, bowel or diaphragmatic injury.**
Use CT in the stable patient and repeat the scan if the condition changes.
- ☐ In the unstable trauma patient with a positive FAST, proceed to haemorrhage control (theatre or interventional radiology) without further imaging, per senior decision.

After · Documentation and cleaning

- ☐ Save representative images or clips of each view.
- ☐ Document the indication, views obtained, findings, limitations and actions.
- ☐ Clean and disinfect the probe after each patient; use high-level disinfection after use on non-intact skin or with a sterile sheath breach, per policy.



A drafted procedure checklist, awaiting senior review. Perform procedures only within your training, competence and local policy. It does not replace your clinical judgement.

EM Orbit · Emergency medicine, in one orbit · proc-efast-aorta-access · red rows are the steps that must not be missed