Abdominal Aorta Ultrasound Cheat Sheet

**Clinical Application**

**Basics**
- 90% mortality rate of rupture
- Suspect AAA in any pt >60 yo with abdominal or back pain
- Screen all > 60 yo males with hx of HTN or smoking at least once
- Small AAAs (<4.5 cm) rupture less frequently than larger AAAs

**Sensitivity & Specificity**
- High sensitivity for presence of AAA
- Poor sensitivity for acute rupture
- Rupture usually into retroperitoneal space & US isn’t great at detecting retroperitoneal bleeds

**Anatomy**

**Normal Anatomy**
- Aorta bifurcates at umbilicus (T5)
- 1st branch: celiac trunk
- Hepatic and splenic artery come off CT
- 2nd branch: super mesenteric artery
- SMA is about 1 cm caudal to CT & runs parallel to aorta

**Anatomy of AAA**
- Two types of AAA: fusiform and saccular
- Fusiform: dilation of entire circumference
- Saccular: asymmetric out pouching
- Fusiform more common
- Majority of AAA are infrarenal
- Aneurisms can extend into iliacs

**Measurements**
- Identify the CT, SMA, and bifurcation
- Measure in transverse view
- Measure from outer wall to outer wall
- Normal aorta: < 3 cm

**Pathology**

**Dissections**
- A dissection looks like a flap in the vessel area
- Flaps are the intima floating out into the vessel
- Watch out for these. They can be subtle!

**Aneurisms**
- Aneurisms look like a widening of the aorta
- Scan the whole length of the abdominal aorta, so you don’t miss one!
- Saccular aneurisms are easier to miss than fusiform, so look for them

**General**
- Measure from outer walls, otherwise a mural thrombus or plaque may cause you to underestimate diameter
- Transverse views at a slight angle can exaggerate the diameter
- Ectatic aortas are not straight and can take an irregular track through abdomen
- Just because there isn't intraperitoneal fluid doesn't mean there isn't an acute rupture (aortas are retroperitoneal)
- Aorta and IVC can be confused in longitudinal view: aorta is rounder, less compressible, & has brighter thicker walls
- If clinical suspicion for AAA is high & ultrasound is equivocal, get a CT with contrast

**Tips and Tricks**
- Bowel gas & body habitus can make imaging difficult

**Bowel Gas**
- Apply steady pressure to move gas
- Jiggle the probe to move bowel aside
- Fan to view through windows in loops of bowel

**Obesity**
- Have pt lie completely flat
- Flex pt's hips & knees to relax ab muscles
- Lower probe frequency to improve sound wave penetration

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