ABDOMINAL VASCULAR INJURIES (AVI)
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- Majority due to penetrating trauma
- Intra-abdominal injury should be considered in all penetrating injuries between nipples and groins
- High mortality due to the vascular injury and associated injury to other intra-abdominal organs

1. **Diagnosis**
   - Unstable patient with possible abdominal vascular injury \(\rightarrow\) surgical exploration
   - Special investigations only in **stable** patient
   - Abdominal X-ray: penetrating injuries mark entry and exit wounds
   - Contrast CT-scan
   - Arteriography

2. **Management**

   2.1. **Principles of Management:**
   - Hypotensive resuscitation
   - Intra-operative autotransfusion
   - Wide surgical exposure: midline laparotomy: xiphisternum \(\rightarrow\) pubis
   - Control aorta at diaphragm
   - 4 Quadrant packing
   - Resuscitation, blood products
   - Temporary control of bowel injuries
   - Vascular repair:
     - Suture
     - Resection and primary anastomosis
     - Interposition grafting:
       - Avoid prosthetic grafts in severe contamination
   - Management of associated intra-abdominal injuries
   - “Re-look” laparotomy

   2.2. **Damage Control**
   - Stop the Bleeding
     - Simple suture
     - Clamp
     - Ligate
     - Shunt (major vessel) sterile thoracostomy tube
     - Pack
   - Resuscitate: blood products
   - Bowel Injury: ligate/staple to prevent soiling/leakage
   - Transfer to ICU or specialist vascular unit: ongoing resuscitation

Blunt injury with possible AVI e.g. renal artery
• Definitive repair:
  o Once patient is stable
  o Physiological parameters normal
  o Expertise available

3. Specific Injuries
   • Aorta
   • Visceral Arteries
   • Iliac Arteries
   • IVC

4. Renal Artery Injury
   • ↑ Index of suspicion with decelerating trauma e.g. child falling from tree, high velocity MVA injury
   • Blunt trauma → stretching of renal artery → intimal tear with flap → thrombosis
   • Diagnosis:
     o Haematuria
     o Loin pain
   • Confirm:
     o Duplex doppler
     o Contrast CT-scan
     o Arteriography
     o (IVP)
   • Must be repaired ASAP to retain functional kidney