Emergencies Involving Central Lines

**History**
- Central venous catheter type:
  - Tunneled catheter (Broviac/Hickman)
  - PICC (peripherally inserted center catheter)
  - Implanted catheter (Mediport)
  - Fistulas
  - Occlusion of line
  - Complete or partial dislodgement
  - Complete or partial disruption

**Signs and Symptoms**
- External catheter dislodgement
- Complete catheter dislodgement
- Damaged catheter
- Bleeding at catheter/fistula site
- Erythema, warmth, or drainage about catheter/fistula site indicating infection

**Differential**
- Fever
- Hemorrhage
- Reactions from home nutrient or medication
- Respiratory distress
- Shock
- Internal bleeding
- Blood clot
- Air embolus

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**Flowchart Diagram**

1. **Airway, breathing, or circulation problem?**
   - Yes → Exit to appropriate TGs
   - No → Damage to catheter?
2. **Damage to catheter?**
   - Yes → Clamp catheter proximal to disruption; Stop infusion if ongoing
   - No → Catheter completely or partially dislodged?
3. **Catheter completely or partially dislodged?**
   - Yes → Apply direct pressure around catheter; Stop infusion if ongoing
   - No → Hemorrhage at catheter site?
4. **Hemorrhage at catheter site?**
   - Yes → Apply direct pressure around catheter
   - No → Suspected air embolus, tachypnea, dyspnea, or chest pain?
5. **Suspected air embolus, tachypnea, dyspnea, or chest pain?**
   - Yes → Place patient on left side in head down position; Stop infusion if ongoing; Clamp catheter proximal to disruption
   - No → Ongoing infusion?
6. **Ongoing infusion?**
   - Yes → Continue infusion; Do not exceed 20 ml/kg
   - No → Clamps catheter proximal to disruption

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**Pearls**
- Always talk to family/caregivers as they have specific knowledge and skills of device(s).
- If hemodynamically unstable and a peripheral IV or IO cannot be obtained, access central catheter and utilize for definitive care if device is functioning properly.
- Central venous access devices that require the penetration of skin, such as internal subcutaneous infusion ports may not be used.
- Use strict sterile techniques when accessing/manipulating a dialysis catheter device.
- Do not place a tourniquet or BP cuff on the same side where a PICC line is located.
- Do not attempt to force catheter open if occlusion is evident.
- Some infusions may be detrimental to stop. Ask family or caregiver if it is appropriate to stop or change infusion.
- Hyperalimentation infusions (IV nutrition): If stopped for any reason, monitor patient for hypoglycemia.