Osteonecrosis

- **Osteonecrosis** is a generic term referring to the ischemic death of the constituents of bone.
- It has a wide variety of causes and can affect nearly any bone in the body.
- Most sites of involvement have an eponym associated with osteonecrosis of that area (see list below)

Terminology

- Ischemic and avascular necrosis were typically reserved for subchondral (epiphyseal) osteonecrosis
- Bone infarct referred to medullary (metaphyseal) osteonecrosis.
- The term avascular necrosis (and also aseptic necrosis) is usually seen in older publications.
- Osteonecrosis is a more general and inclusive term, and is now preferably used ;
- It is also important to note that necrosis is always avascular. However, often both osteonecrosis and avascular necrosis are often used interchangeably, which can lead to confusion.
- When osteonecrosis affects bone growth in the skeletally immature population, this is termed osteochondrosis.

Information

- Though "idiopathic" is found at top of list for etiology of osteonecrosis (ON) in many discussions, another etiology often is present
  - Watch for clues in soft tissues and bones to discover etiology of ON
- Most frequent etiologies of ON in developed countries include
  - Corticosteroid use
  - Alcohol abuse
  - Sickle cell anemia
  - Trauma
- Bones that are mostly covered by cartilage are particularly at risk for developing ON
  - Femoral head, humeral head, scaphoid, lunate, talus, navicular

Location

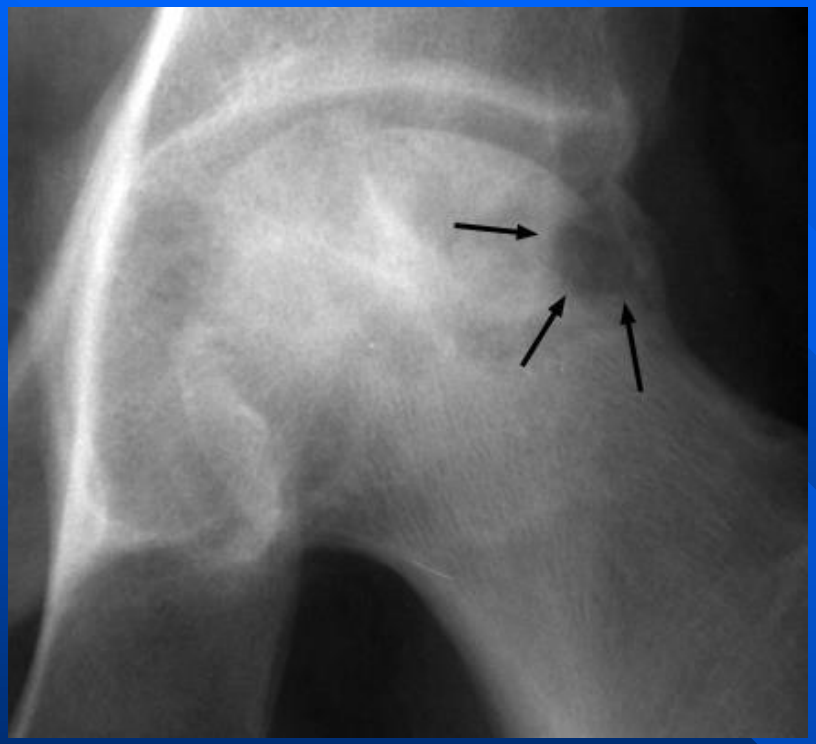
- Bones that are mostly covered by cartilage are particularly at risk for developing ON
  - Femoral head
  - Humeral head
  - Scaphoid
  - Lunate
  - Talus
  - Navicular

Etiology

- Trauma: fracture or dislocation
- Corticosteroid excess: both endogenous and exogenous
- Alcohol
- Hemoglobinopathies: e.g. sickle cell disease
- Caisson disease
- Pregnancy-related osteonecrosis
- Radiotherapy
- Connective tissue disorders
- Renal transplantation
- Pancreatitis
- Gout
- Gaucher disease
- Cirrhosis
- Freiberg disease
- Chemotherapy

- **PLASTIC RAGS**
- **P**ancreatitis
- **L**upus (systemic lupus erythematosus)
- **A**lcohol abuse
- **S**teroids (corticosteroid therapy, Cushing disease)
- **T**rauma
- **I**diopathic (including Legg-Calvé-Perthes disease)
- **C**onnective tissue and **c**ollagen vascular disorders; **c**aisson disease
- **R**adiation therapy; **r**heumatoid arthritis
- **A**myloidosis
- **G**aucher disease
- **S**ickle cell anemia

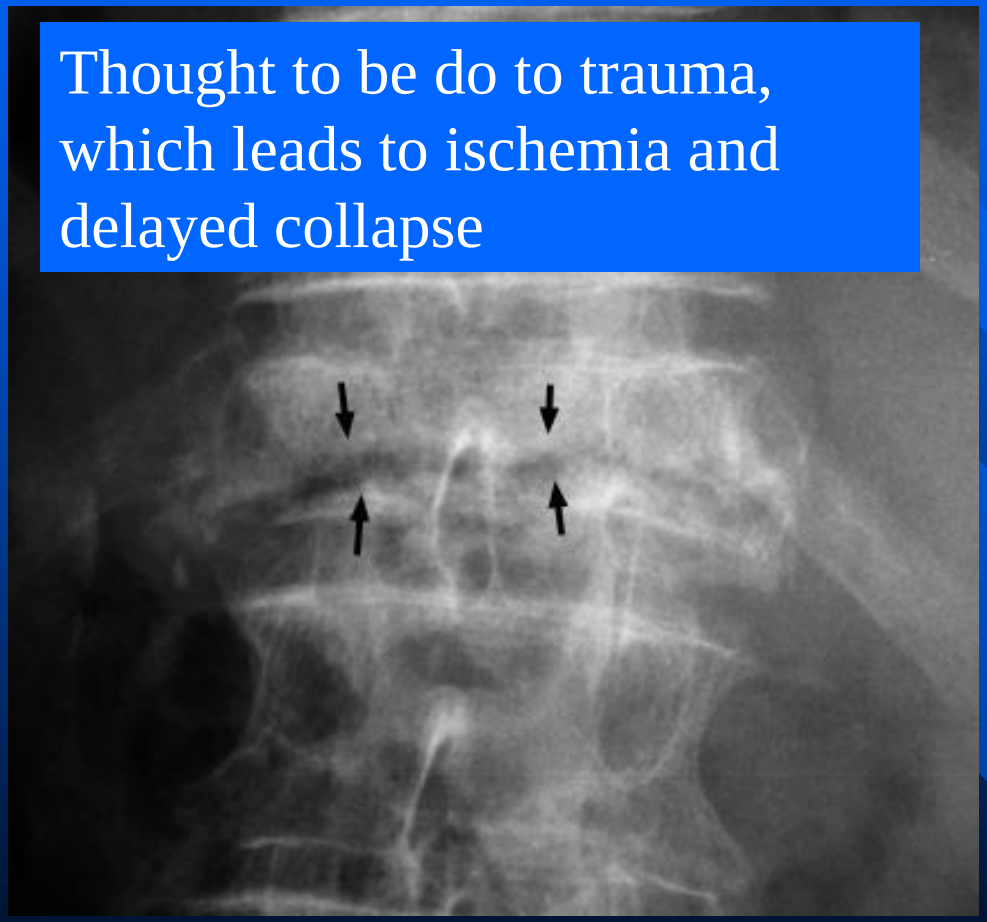
AVN



Bite Sign

Fractures that occur in the subchondral bone may be recognized by a crescentic lucent zone.

AVN “Kummell’s Disease”



vacuum cleft sign is a gas-density cleft with a transverse separation of the vertebral body, appearing in extension and disappearing in flexion. It is secondary to local bony ischemic necrosis with nonhealing vertebral collapse

AVN