

The Limping Child:

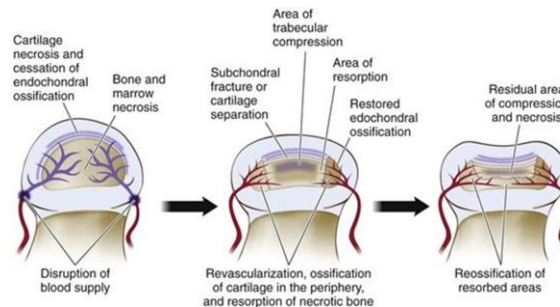


4.) Perthes Disease

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Module Overview

- Lecture 1: Introduction
- Lecture 2: Septic Arthritis
- Lecture 3: Developmental dysplasia of the hip

- Lecture 4: Perthes Disease

- Epidemiology +Risk Factors
- Pathophysiology
- Clinical Features
- Investigation
- Management

- Lecture 5: Slipped Upper Femoral Epiphysis



Legg-Calve-Perthes Disease

= Idiopathic avascular
necrosis of the proximal
femoral epiphysis

Epidemiology

- Incidence - approx 1/10,000 children
- Most commonly presents at **4-8 years**
 - *But possible anytime between 18 months and adolescence*
- **Males** > Females (approx. 4:1)
- Higher incidence in
 - lower socioeconomic groups
 - urban areas
 - Caucasian ethnic groups



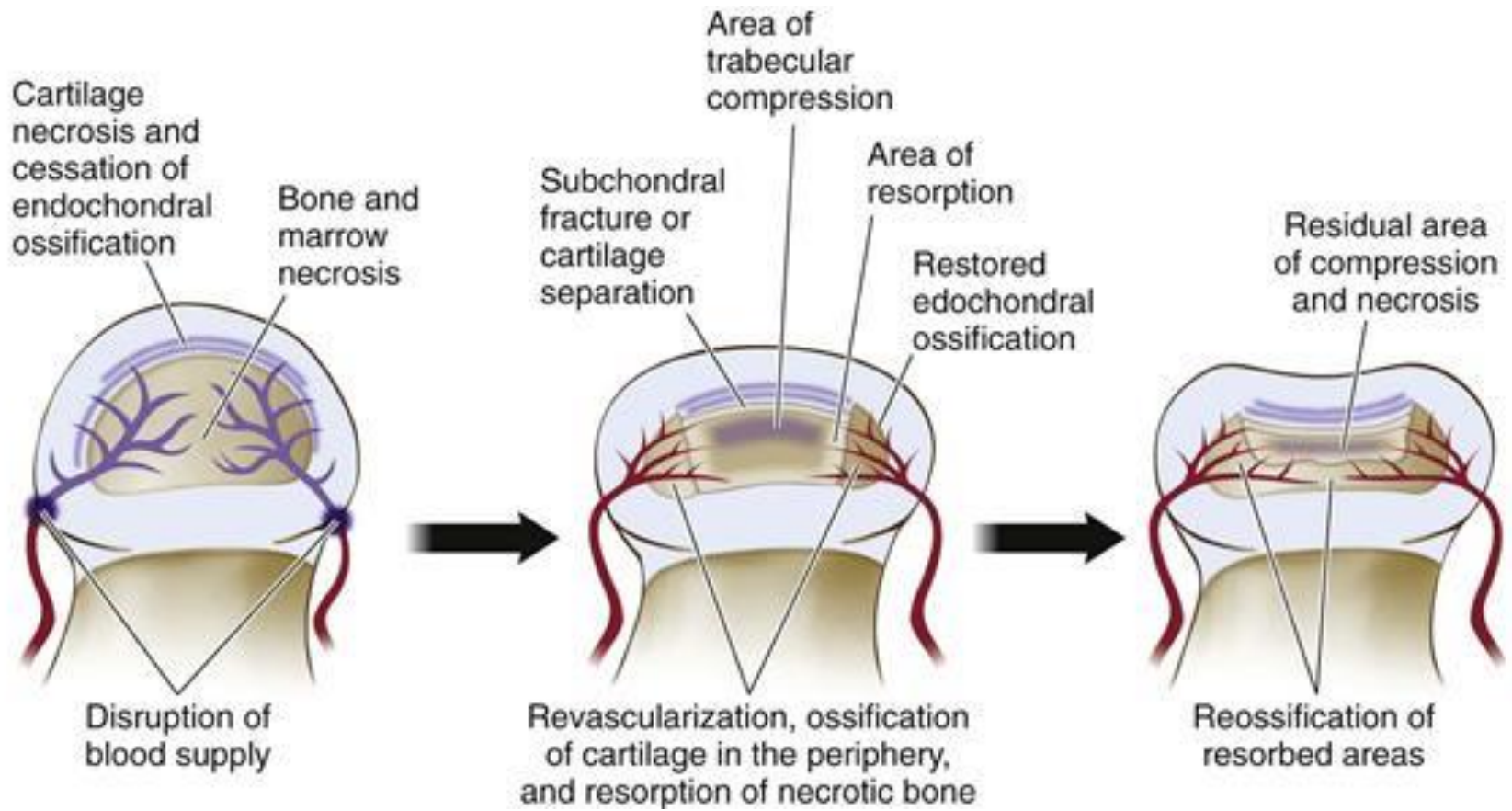
Risk Factors

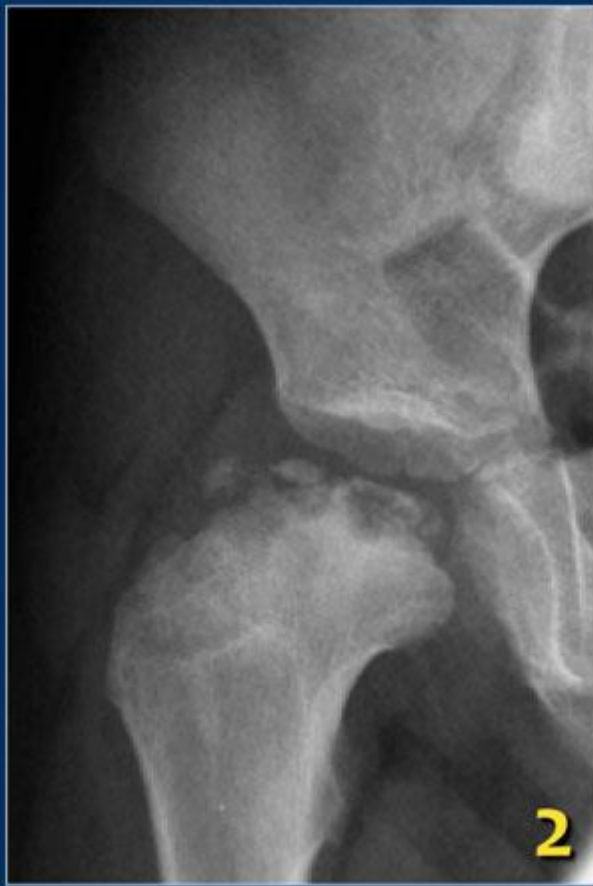
- Positive family history
- Low birth weight
- Abnormal birth presentation
- Passive smoking
- European, Asian and Inuit decent

Stages

- **Initial stage**
 - osteonecrosis occurs secondary to disruption of blood supply to femoral head
 - Lasts 3-6 months
- **Fragmentation**
 - Femoral head appears to ***fragment*** or dissolve
 - ***Revascularization*** occurs, with bone resorption
 - Causes collapse
 - Patchy densities seen on xray
 - Lasts 6-18 months
- **Reossification**
 - ***New bone appears*** as necrotic bone is resorbed
 - Lasts upto 18 months
- **Remodelling**
 - Femoral head ***remodels*** until skeletal maturity
 - There is often some residual deformity







Clinical Presentation

- **Pain:**
 - In the hip, knee, groin or thigh
 - Insidious onset
 - May increase with activity and improve with rest
- **Limp:**
 - Can be very mild
 - Sometimes painless
- **Reduced range of movement:**
 - loss of internal rotation and abduction
 - Reduced ROM more pronounced in the later stages



Investigation

Plain film radiographs: AP of pelvis and frog leg laterals

- 1st line for diagnosis
- Medial joint space widening
- Irregularity of femoral head ossification
- Sclerotic appearance
- Crescent sign (due to subchondral fracture)



MRI

- more sensitive than radiograph
 - May provide an earlier diagnosis by demonstrating changes in the upper femoral epiphysis and physis
- Arthrogram

Arthrogram

- = Dynamic study
- can demonstrate coverage and containment of the femoral head



Management

- **Mainstay = non operative**
- ***Activity restriction*** and protected weight-bearing
 - During earlier stages until reossification is complete
 - Patients are advised to avoid contact sports/vigorous activity and focus on non weightbearing forms of exercise (eg swimming)
 - ***Physiotherapy***
 - Aim = to maintain range of movement and keep the femoral head contained
 - ***Follow up***
 - Regular clinical and radiographic follow up is needed until completion of disease process
- **Outcomes:**
 - Generally good..
 - Dependent on which part of femoral head is involved
 - In general, involvement of the lateral part is bad
 - These are the cases that sometimes require operative management
 - » ***Femoral or pelvic osteotomy***



Complications

- Femoral head deformity
 - Widening/Flattening
 - Can cause:
 - acetabular dysplasia
 - labral injuries
 - femoroacetabular impingement
- Hip subluxation
- Premature physeal arrest
- Leg length discrepancy
- Degenerative arthritis (late)