

OSTEOCHONDRITIS DISSECANS

Site: Knee (75%), Ankle, elbow

Classical site: Medial femoral condyle 70%

. The patella 5%

Lateral femoral condyle 15%)

Age: Adolescent 10-15 and adult 25—40

Sex: M:F=2:1 and 20% bilateral

Etiology

1. Trauma: Fairbank – Repetitive injury from tibial spine

Cahill -- Stress fracture

Acute trauma: Lateral femoral condyle

2. Ischemia: Blood supply is rich and ischemia is unlikely

3. Defects of ossification: Defective ossification is not a cause for Dissecans

4. Natural History and treatment: (Linden)

Juvenile – can heal but not the adult type.

Clinical: Pain,

Swelling,

Catching, locking

The lateral aspect of the medial femoral condyle is the most common [85%]

Wilson's sign: The sign is elicited by flexing the knee to 90°

- Internal rotation of tibia and then slowly extending the knee.

A +ve sign is pain at approximately 30° of flexion that is relieved by External rotation of the tibia.

X ray

Notch view or tunnel, taken with the knees bent 30° flexion

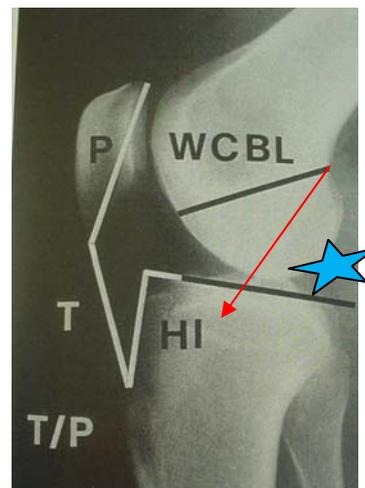
Lateral side of the medial femoral condyle is the usual site:

AP: is in the medial side of the intercondylar region

Lateral 3 zones

- 1 Above Blumensaat's line
- 2 Between B line and Line along posterior cortex
- 3 Posterior to line along posterior cortex.)

Osteochondritis dissecans usually in Zone 3.



MRI: is essential for planning.

Grade 1: Depressed Osteochondral fracture

2. Osteochondral fragment attached by an osseous bridge
3. A detached non-displaced fragment
4. A displaced fragment (loose body)

Summary

- (1) When there are no signs of dissection (defined as a stable fragment), the prognosis is markedly better than it is with signs of dissection.
- (2) Pain and swelling are not good indicators of dissection.
- (3) Plain radiography and computed tomography are not useful in predicting dissection.
- (4) Sclerosis on plain radiography predicts poor response to drilling.
- (5) Lesions >2 cm in diameter have a worse prognosis than smaller lesions.
- (6) When there is evidence of dissection, surgical results are better than those of non-surgical treatment.
- (7) Lesions in the classic location had a better prognosis.
- (8) Although patients with adult-onset symptoms had a higher proportion of abnormal findings on radiographs after the treatment period (42%), more than one in five of those with open epiphyseal plates (22%) had abnormal knee radiographs an average of 3 years after starting treatment.

Treatment

Skeletal age at onset of symptoms appears to be the most important determinant of prognosis and remains an essential factor, directing the timing and nature of treatment decisions.

Young when lesion is hot on bone scan, lesion always heal

Young with cold bone scan, may not heal

Children: Observe and avoid contact sports

Symptoms not settling by 6 months or fragments loose then there indication for stabilization.

In adult, healing is only 33%

In adult when totally separated:

1. Fix with: K wires, bone pegs , PDS, headless screws, allogeneic graft, autograft from a non-weight bearing portion of the medial femoral condyle.

2. Autologous Chondrocytic implantation: 89% of patients improved, with a similar distribution of excellent, good, and fair results compared with posttraumatic isolated femoral condyle lesions.



OSTEONECROSIS

Unknown aetiology

Area of osteonecrosis in the weight bearing surface of the medial femoral condyle (rarely on the lateral femoral condyle)

History: rule out: Sickle cell, Coagulopathies; Renal transplant; SLE, Steroid;

Caissons; Gaucher's disease, Trauma, Idiopathic

Clinical

>65 year

More in females (3:1)

Sudden onset of severe deep seated knee pain and inability to weight bear

Small effusion

Stressing medial compartment of the joint in flexion is usually painful

X ray

Lotke Early stages may be normal

Stage I: Severe pain; X ray normal; Bone scan +ve; MRI +ve with odema

Stage II: Pain; X ray Oval shadow on the medial femoral condyle with some flattening of the articular surface; +ve Bone scan and MRI

Stage III: Collapse of the subchondral bone, Sclerotic halo

Stage IV: Shallow concave articular surface with II OA and narrowed joint space

Natural course

Stage III & IV: Significant OA in 2 years and need TKR

I & II: Depending on size (using X ray / Bone scan) Size = < 2.5cm can be treated conservatively

Results unfavourable when size is >5cm, a surgical treatment is required.

Most require TKR

Core compression: Stage I & II. Results are uncertain