

# **OSTEOARTHRISIS**

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# OSTEOARTHRISIS

## ▶ Definition

A non-inflammatory (DEGENERATIVE) disease affecting articular cartilage of joints

# OSTEOARTHRISIS

- ▶ Primary

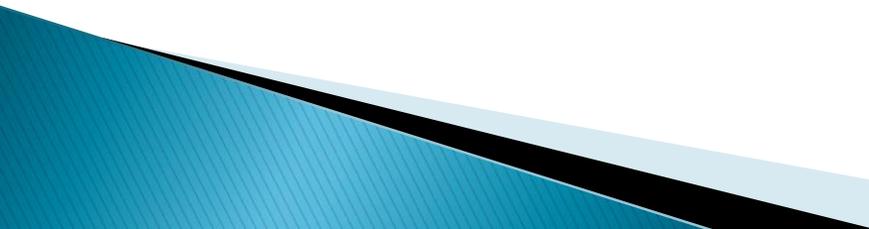
Intrinsic defect

(mechanical,vascular,cartilage,HEREDITARY-generalised O.A)

- ▶ Secondary

Sec. to local or systemic disease

# OSTEOARTHRISIS

- ▶ Increased load eg;obesity(hips&knees take 3-4 body wt. with each step)
  - ▶ Trauma ;osteocondral,malunion,sport injury
  - ▶ Congenital/developmental;CDH,multiple epiphyseal dysplasia
  - ▶ Infection
  - ▶ Necrosis;Perth `s disease,osteonecrosis,steroids
  - ▶ Haematologic;SCD,haemophaelia
  - ▶ Endocrine;DM,acromegaly
- 

# OSTEOARTHRISIS

- ▶ Metabolic; crystalline deposition disease(gout, CPPD)paget disease
  - ▶ Inflammatory joint disease
  - ▶ Neuropathic;DM,tabs dorsalis
  - ▶ Occupation
- 



# OSTEOARTHRISIS

## Epidemiology

- ▶ Common in our community esp.knees
- ▶ Much more in females ;esp.Obese
- ▶ Presents earlier than West
- ▶ About 90% of those over 40 have asymptomatic degeneration of wt.bearing joints
- ▶ Commonest joints are;knee,hip,C.S&L.S,1<sup>st</sup> CMJ,1<sup>st</sup> MTPJ,IPJ

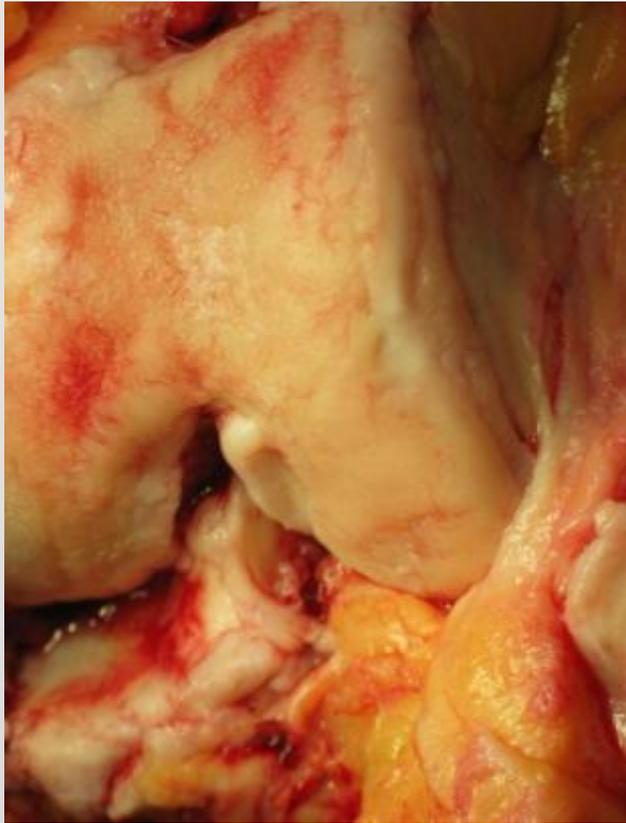
# OSTEOARTHRISIS

## Pathophysiology

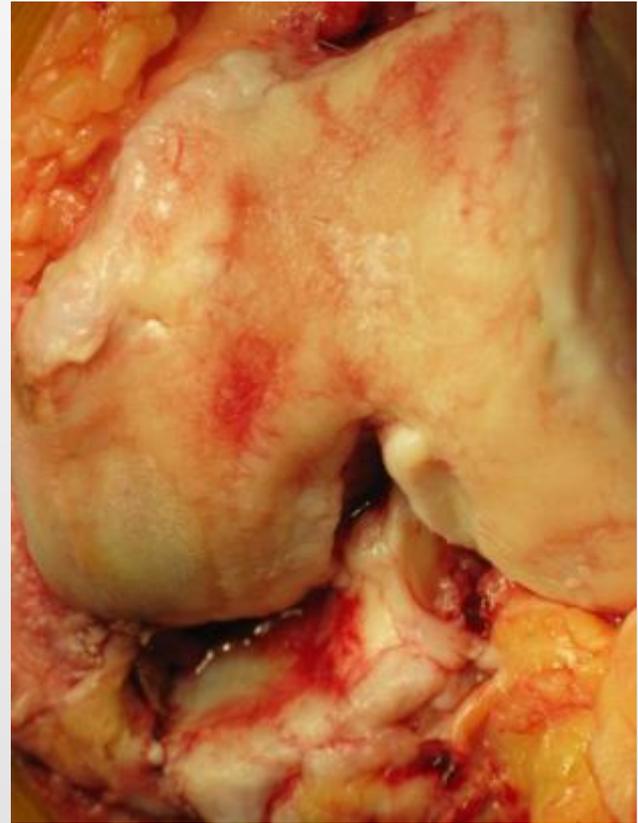
- ▶ Increased water content; swelling & softening of cartilage
- ▶ Depletion of Proteoglycan
- ▶ Chondrocyte damage & synovitis › proteolytic enzymes › collagen disruption
- ▶ **FIBRILATION** on wt. bearing surfaces
- ▶ **LOSS OF CARTILAGE HEIGHT** & exposed bone › **DEC. JOINT SPACE**

# OSTEOARTHRISIS

- ▶ Attempts of repair;  
SUBCHONDRAL SCLEROSIS  
eburnation (ivory like bone)
- ▶ Fissuring (cracks);  
synovial fluid pumped into subchondral  
bone › SUBCHONDRAL CYST
- ▶ Hypervas. of synovium & subchon. bone  
› proliferation of adjacent cartilage › enchondral  
ossification › OSTEOPHYTE



fissuring



Osteophytes & eburnation

# OSTEOARTHRISIS

- ▶ Synovial & capsular thickening
  - ▶ Progressive bone erosion ▶ **BONE COLLAPSE**
  - ▶ Fragmented osteophyte ▶ **LOOSE BODIES**
  - ▶ Loss of height & lig. laxity ▶ **MALALIGNMENT**
- 



Cysts&sclerosis



Loss of bone&deformity



# OSTEOARTHRISIS

## ▶ Clinical picture

SYMPTOMS

P ,I ,N ,S ,D

SIGNS

E ,M ,T ,I ,C ,D ,N

# OSTEOARTHRISIS

## ▶ INVESTIGATIONS

x-ray (**STANDING** in L.L)

osteophytes

cysts

sclerosis

loss of space

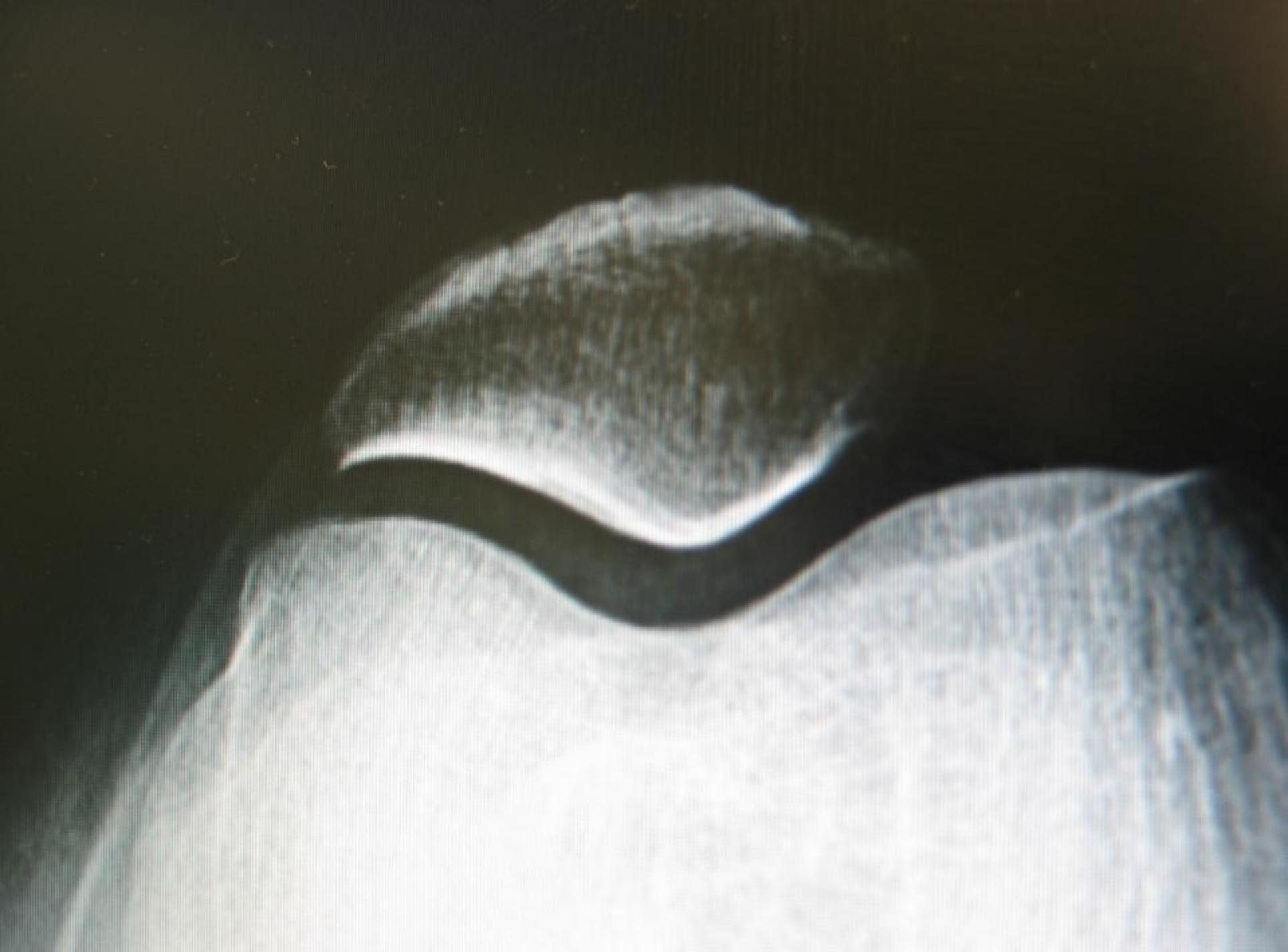
malalignment

sulux.

erosion

loose bodies

synovial analysis (in diff.diag.)





# OSTEOARTHRISIS

- ▶ Management
  - ▶ History
  - ▶ Examination
  - ▶ Investigations
- 

# OSTEOARTHRISIS

- ▶ **Conservative treatment**
  - decrease load (wt.,stick,rest)
  - modify activity
  - physiotherapy
    - prevent contractures
    - muscle strengthening
    - ROM
  - medications
    - systemic
    - local

# OSTEOARTHRISIS

## ▶ Surgical treatment

1. Joint Debridement
2. Corrective Osteotomy

what?

varus/valgus.abd./add.

why?

realign axis&redistribute wt.

which joint?

knee/hip

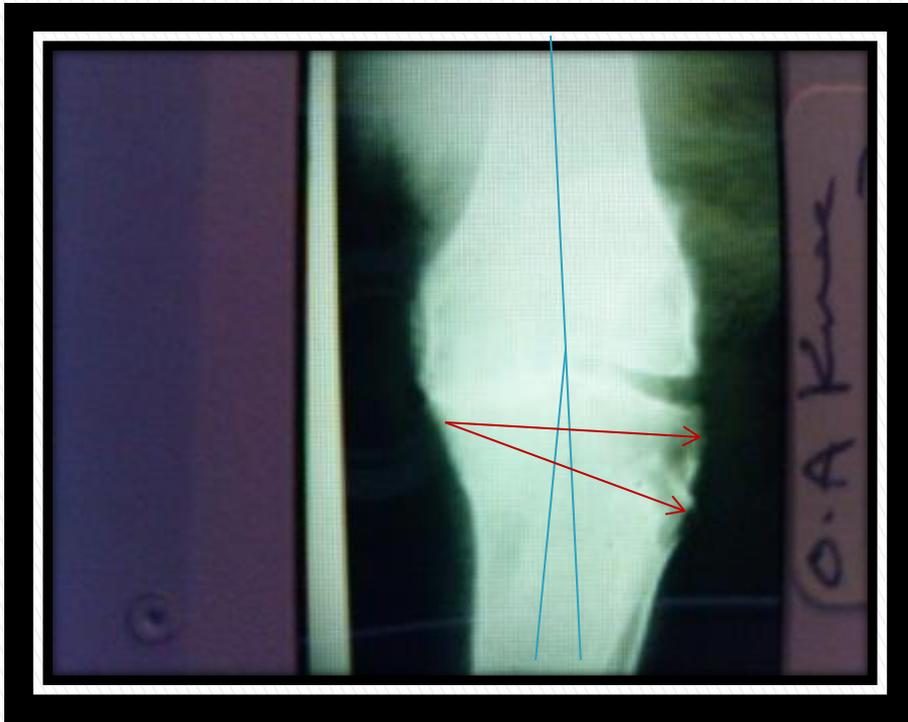
# OSTEOARTHRISIS

▶ what joint

mobile, stable, minimally deformed  
which patient

young, thin, active





PREOPERATIVE



POST OSTEOTOMY



# OSTEOARTHRISIS

## 3. Arthrodesis

why;

transfer painful stiff into painless stiff  
joint

stabilise joint

which joint;

wrist, ankle, CS, LS, hand

hips & knees (**LESS COMMON**)

# OSTEOARTHRISIS

when?

failed TKR(infection)

neuropathic

paralitic(flail)

loss of quad.

stiff in young

# OSTEOARTHRISIS

when NOT;

ipsilateral disease

contralateral hip disease

bilateral j.disease

LS./OA

**TRANSFER LOAD TO DISTAL&CONTRALATERAL  
JOINTS**

# OSTEOARTHRISIS

## 4. Arthroplasty

### ▶ Excision

what?

remove part of joint to allow  
movement

disadvantage;

weakness

shortening

walking aid

# OSTEOARTHRISIS

which joint?

hip ;post infection(girdle stone)

1<sup>st</sup>.MTPJ

1<sup>st</sup>.MPJ

▶ Joint replacement

**PARTIAL**

which joint;

hip (fracture)

knee

shoulder(SCD,RA)

# OSTEOARTHRISIS

when;

necrosis

degenerative

trauma

inflammatory(ONLY SHOULDER)

when NOT

infection

young

inflammatory



# OSTEOARTHRISIS

## TOTAL REPLACEMENT

which?

knees , hips, shoulders, ankles,  
elbow

when?

painful, deformed stiff joint  
old patient!!

# OSTEOARTHRISIS

when NOT;

neuropathic

infection

paralytic

young, active(RELATIVE)

