- Gout is a form of arthritis caused by excess uric acid in bloodstream.
- The symptoms of gout of are due to formation of uric acid crystals in the joints.

OVERVIEW:

- Serum urate of 6.8 mg/dl is a necessary precursor for development of gout.
- In hyperuricaemic patient ,urate crystals precipitate in and around joint tissues.
- Without intervention ,crystal precipitation form larger aggregates termed tophi

PATHOGENESIS:

URATE OVERPRODUCTION:

primary hyperuricaemia:

1. idiopathic
2. complete or partial deficiency of HGPRT
3. Superactivity of PRPP synthetase

CLASSIFICATION:

- Secondary hyperuricaemia:
  - excessive purine consumption
  - myloproliferative
  - lymphoproliferative
  - psoriasis
  - hemolytic disease
  - glycogen storage diseases1,3,5,7

- URIC ACID UNDEREXCRETION:
  PRIMARY:
    idiopathic

- SECONDARY HYPERURICAEMIA:
  - decreased renal functions
  - metabolic acidosis
  - dehydration
  - diuretics
  - hypertention
  - hyperparathyroidism
  - drugs (cyclosporins,ethambutol,pyrazinamide)
  - lead nephropathy

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- The natural history depend upon three distinct stages
    - asymptomatic hyperuricaemia
    - acute and intermittent gout
    - chronic tophaceous gout

SIGNS AND SYMPTOMS:

- Rapid onset of equisite pain
- Warmth ,swelling and erythema of affected joint
- Frequent involvement of first metatarso phalngeal joints
- Other joints include midfoot,ankle,heel and knees.

LAB TESTS:

- Serum urate more than 6.8mg/dl
- Leukocytosis with with polymorphonuclear leukocytes
- Raised ESR,CRP

DIAGNOSIS:

- Moderate to severe inflammation
- Leukocyte count between 5-80,000cells/mcl
- Monosodium urate crystals as bright yellow needle shaped objects

SYNOVIAL FLUID ANALYSIS:

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- Bony deformity indicative of urate crystals develop only after years of disease(microtophi)

IMAGING STUDY:

- Patient with gout must be screened for hyperlipidemia,glucose intolerance,hypertention,coronary artey disease and obesity

SPECIAL TESTS:

CRITERIA FOR GOUT DIAGNOSIS:

- Presence of characterstic urate crystals in joint fluid ,or
- A tophus proved to contain urate crystals by chemical means or polarized light microscopy or,
- The presence of 6 of the following 12 clinical,laboratory and radiographic phenomenon listed below:

1. more than one attack of acute arthritis
2. Maximal inflammation developed within 1 day
3. Attack of mono articular arthritis
4. Joint redness observed
5. First metatarsal joint painful or swollen
6. Unilateral attack involving first metatarsophalangeal joint
7. Unilateral attack involving tarsal joint
8. Suspected tophus
9. hyperuricaemia

10. A symptomaticswelling within joint(radiograph)
11. Subcortical cysts without erosions(radiograph)
12. Negative culture of joint fluids for microorganisms during attack of joint inflammation.

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- Destructive arthopathy
- Nephrolithiasis
- Progressive renal failure

COMPLICATIONS:

TREATMENT STRATEGY

1. providing rapid and safe pain relief
2. preventing further attacks
3. preventing formation of tophi and destructive arthritis
4. addressing associated medical conditions

TREATMENT:

- NSAIDS(INDOMETHASINE)
- COLCHICINE(1.2 mg orally then0.6 mg 1 hour later)can be repeated after 24 hours
- GLUCOCORTICOIDS(reserved for pts in whom colchicine and NSAIDS are ineffective)dose 0f 20-40 mg/day is used

PAIN RELIEF:

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PAIN RELIEF:

XANTHINE OXIDASE INHIBITOR

1.ALLOPURINOL(Uric acid under production)

2.FEBUXSTAT

URICOSURIC AGENTS

1.PROBENECID

PREVENTING FURTHER ATTACKS:

- The most recently specific urate –lowering agents is pegloticase a pegylated mammalian recombinant uricase
- Dose is 8mg iv every week
- Reserved for those with severe gout with abundant tophaceous deposits

PROGNOSIS:

- Excellent prognosis if proper compliance and urate level remain below 6.8mg/dl

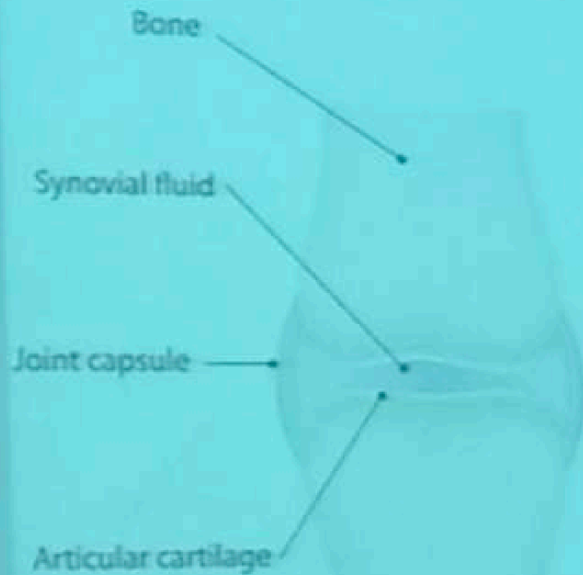
PSEUDOGOUT

CALCIUM PYROPHOSPHATE DIHYDRATE CRYSTAL DEPOSITION DISEASE

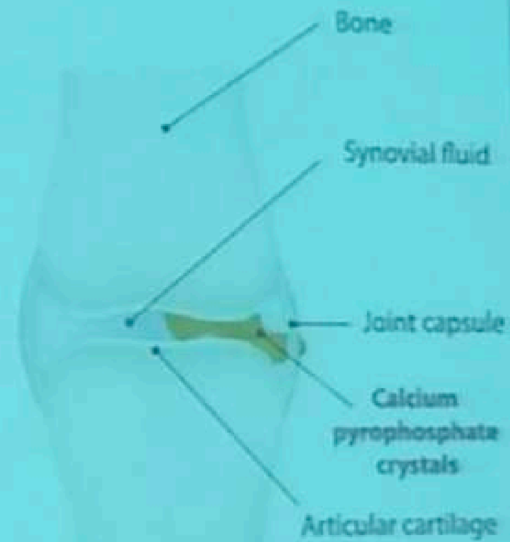
- Acute gout like attacks of inflammation that occur in patients with CPPD crystal deposition.
- Following conditions are associated swith CPPD disease like hyperparathyroidism,hemochromatosis,hy pothyroidism,amyloidiosis,hypomagnesem ia,acromegaly,and hypophosphatasia

Pseudogout

Healthy Joint



Joint with Pseudogout



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Dreamstime.com

- Monoarticular inflammatory arthritis lasting for several days to 2 weeks
- Attack vary in intensity

SYMPTOMS AND SIGNS:

- Positive birefringet calcium pyrophosphate dihydrate crystals determination in synovial fluid is confirmation of diagnosis.

LABORATORY FINDINGS:

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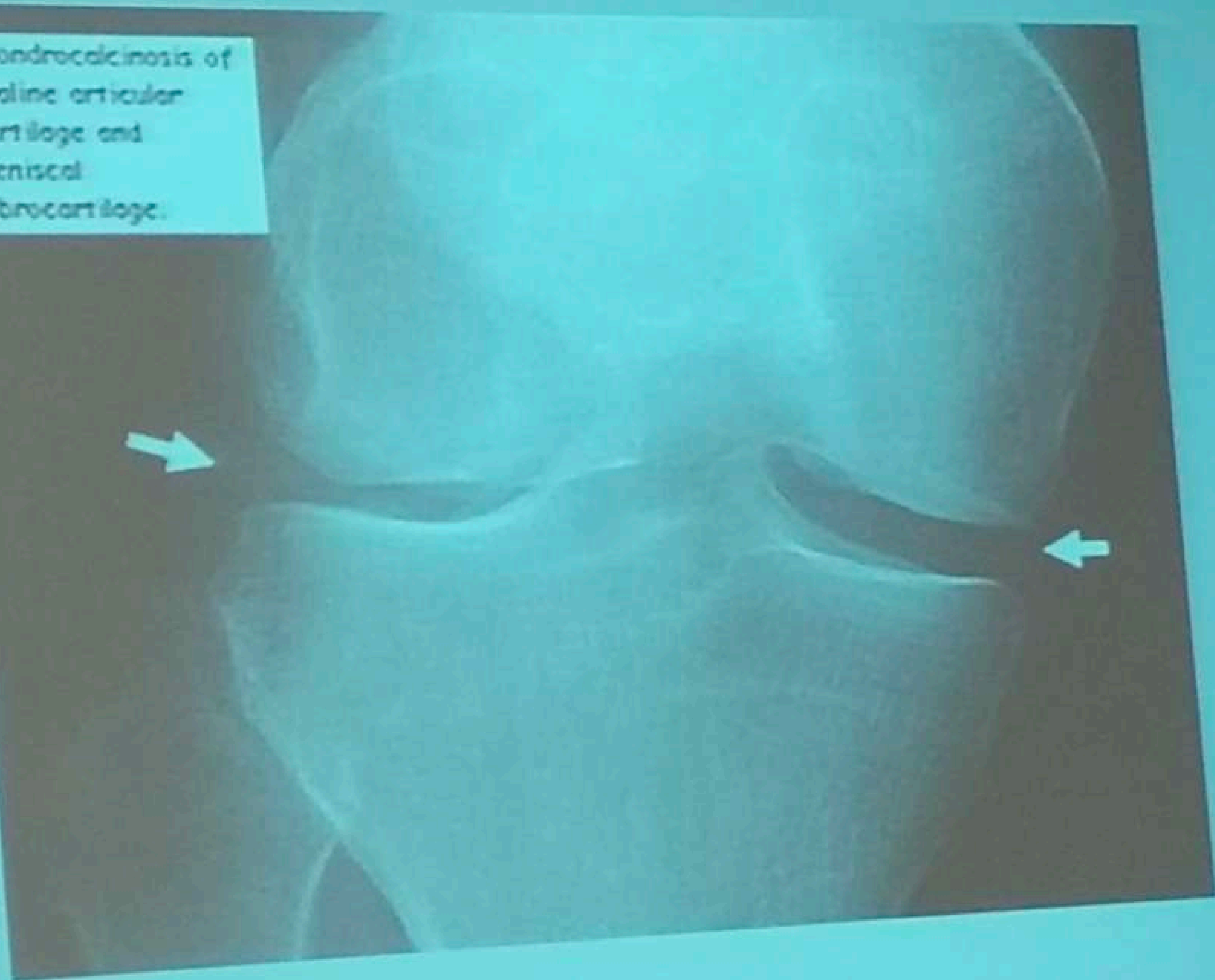
LABORATORY FINDINGS:

IMAGING STUDIES:

- The radigraphic findings of punctate and linear densities in hyaline articular cartilage or fibrocartilaginous tissues are diagnostic of CPPD crystal deposition.


Chondrocalcinosis of
hyaline articular
cartilage and
meniscal
fibrocartilage.

- Same as of gout
- Therapeutic options include NSAIDS,COLCHICINE,INTRA ARTICULAR GLUCOCORTICOIDS
- Treatment of underlying condition

TREATMENT: