OSTEOARTHRITIS

Bone · Joint (Cartilage) · Inflammation.

- Also called as Osteoarthrosis, Degenerative Joint Disease
- Most Common Arthritis.
- Earlier it was thought Inflammation was minimum but it is now found to play its part.
- It is a degeneration from "Wear & tear"

Two Forms: Nodal and Non-Nodal type.

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Presence of Herbenden nodes usually Hereditary.

Etiology

i) Age over 50 years.
ii) Inflammation → Cytokines causing more Catabolism & Less Anabolism
iii) Pre-Existing Injury or Disease of Joint.
iv) Obesity & Mechanical stress.
v) Endocrine disorders → Diabetes, Acromegaly, hyperparathyroidism
vi) Neurological disorder causing loss of sensation.

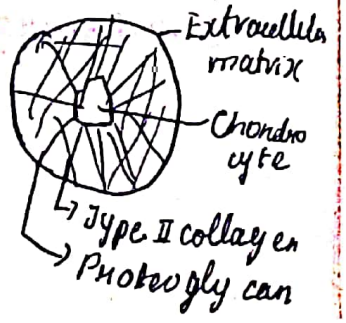
Pathogenesis:

- Chondrocytes helps in maintaining cartilage
- Surrounded by Extracellular matrix which contains Type II collagen + Proteoglycans (Protein + Glucose)

↓ Structural support

↓ Hyaluronic acid

↓ Elasticity & Tensile strengths.



→ In Osteoarthritis Chondrocyte produces more degradative enzymes and less synthetic enzymes which is usually balanced. ie less anabolic and more catabolic activity.

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Progressive loss of Articular cartilage

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Joint space decreased

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Friction of Bone

↓

Inflammation & Pain.

→ Damage of Cartilage

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Reduced proteoglycans & Type II Collagen and more Type I collagen^{++}

↓

Reduced Elasticity & Tensile strength.

↓

Cartilage Breaks down and gets into Synovium

↓ called as

"JOINT MICE"

↓

Immune cells tries to remove that by Inflammation by Cytokines.

↓

Synovitis & Fibrilation of cartilage.

→ Damage to Bone

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Looks like polished ivory

↓

Osteophyte Formation (New Bone)

- Seen in Proximal Interphalengal Joints → Bouchards Node
  Distal Interphalengeal Joints → Heberen nodes.

Clinical features:-

onset - Insidious

location - Weight Bearing Joints, knee, Hips, Cervical, lumbar spine. shoulder, DIP.

Sensation - Stiffness in morning less than 1 hour, and end of the day.
- Usually No swelling.

- Pain is usually not due to Cartilage because it is aneural., pain is due to Synovitis, Bony erosion, Bursitis. Muscles. ligaments.
- Atrophy of Quadriceps, Crepitus heard.
- Pain while walking downstairs or slope.

OA Cervical spine → Numbness, Cervical spondylosis.
OA Lumbar spine → Sciatica, Backache., Heberden nodes.
Diagnosis: Crepitus, heard Bouchers nodes.

- Blood test are not diagnostic.
- X ray → Narrowing of Joint space, Joint destruction, Loose Body formation (Joint Mice), Osteophytes.
- MRI → Early detection of Cartilage defects, menisci, ligaments are found
  CT → Useful in assessment of axial joint and spine.

Arthroscopy → Used to visualize interior of Peripheral joints and diagnosis & Surgery are done

Management & Treatment.

Non-Medical.

- Losing weight
- Exercise.
- Physiotherapy to strengthen muscle.
- Application of heat.

Medical.

↳ NSAIDS.

→ Hyaluronic Acid Injections.

→ Surgery → Knee Joint replacement by prosthetic knee.

→ Chondrocyte transplantation.

Generalize Nodal OA:
- Polyarticular & Interphalengeal
- Herbeden ± Bouchards nodes
- Female predominance.
- Genetic predisposition.
- Middle age.

Knee.
- Jerky, asymmetric Antalgic with less stance time weight bearing on painful side.
- Genu varus or valgus and on fixed flexion deformity

Hip OA:
- Antalgic gait.
- Wasting of quadriceps and gluteal muscles
- Ipsilateral leg shortening.
- Pain and restriction of Internal rotation.

Spine OA:
- Cervical Spondylosis or Lumbar Spondylosis
- SLRT + Positive.

Early onset OA:
- Kashin Beck disease (7 to 13 years) with selinium deficiency & contamination of cereals with mycotoxin fungi.