**OSTEOARTHRITIS BY Evans Nyakundi Lecturer KMTC KISII CAMPUS**

**IMPORTANT TO UNDERSTAND.**

* **Physiology of synovial joints.**
* **Threats to cartilage integrity.**

 **>Loss of joint stability**

 **>Localized increase in loading stress**

 **>Increased stiffness of the cartilage**

 **>Inflammatory (enzymatic) degradation**

 **>Restriction of free joint movement**

 **>Sclerosis in subchondral bones**

* **Mechanisms for maintaining joint stability.**

 **>Alignment of joint components**

 **>Shape and fitness of articular surfaces**

 **>Adhesive property of synovial fluid**

 **>Integrity of capsule and ligaments**

 **>Muscle tone and power**

 **>Neurological control of balance.**

**OSTEOARTHRITIS(OA) is a chronic disorder of synovial joints in which there is progressive softening and disintegration of articular cartilage accompanied by new growth of cartilage and bone at the joint margins (osteophytes), cyst formation and sclerosis in the subchondral bone, mild synovitis and capsular fibrosis. It is a symmetrically distributed, often localized to only one part of a joint and often associated with abnormal loading rather than frictional wear.**

**AETIOLOGY.**

**1.It increases in frequency with age.**

**2.Inheritance---genetic link e.g. Epiphyseal Dysplasia**

**3.Trauma-------Fractures**

**4.Previous inflammatory disorders R.D. Rheumatoid disease.**

**5. Joint instability e.g. Varus deformity of knee**

**6.Joint stress**

**7.Reduction of shock absorbing effect of the supporting cancellous bone.**

**8. Idiopathic for primary OA (unknown).**

**PATHOGENESIS.**

* **There is cartilage stiffness and deformation.**
* **Stress on collagen network which leads to tissue breakdown**
* **Loss of integrity of articular cartilage**
* **Joints become unstable**
* **Formation of osteophytes during process of repair and remodeling.**

**PARTHOLOGY**

 **The cardinal features are:**

**1.Progressive cartilage destruction**

**2.Subarticular cyst formation**

**3.Sclerosis of the surrounding bone**

**4.Osteophyte formation**

**5.Capsular fibrosis.**

**PREVALENCE.**

* **Osteoarthritis is the commonest of all joint diseases.**
* **Affects both sexes and all races.**
* **Age over 65 years**
* **Prevalence rises from 1 percent below the age of 30 and to over 50 percent in people above the age of 60 years.**
* **OA finger joints common in elderly women**
* **Common in fingers, hip, knee and spine, than elbow, wrist and ankle.**

**RISK FACTORS.**

1. **Joint dysplasia> Perthes disease, Acetabular dysplasia**
2. **Trauma**
3. **Occupation> knee bending activities, heavy vibrating tools, Cotton mill workers, games**
4. **Bone density>Osteoporosis, Genetic, Hormonal, metabolic effects.**
5. **Obesity> Increased joint loading, endocrine and metabolic disorders.**
6. **Family history.**

**SYMPTOMS.**

**1.Pain>Usual presenting symptom relieved by rest.**

**2.Stiffness**

**3.Swelling (effusion)**

**4.Deformity**

**5.Loss of function**

* **Difficult in climbing upstairs**
* **A limp**
* **Restriction of walking**
* **Inability to perform everyday tasks or enjoy recreation. Patients seek help.**

**SIGNS:**

* **Joint swelling>effusion**
* **Tell –tale scars>denote previous abnormalities**
* **Muscle wasting>Dysfunction**
* **Deformity>Hip—postural adjustments**
* **Local tenderness**
* **Limited movements**
* **Crepitus (knee joint)**
* **Instability.**

**Other joints should always be examined. Function in everyday activities.**

**DIAGNOSIS:**

**X-rays**

**Radionuclide scanning**

**CT Scan**

**MRI**

**Arthroscopy.**

**THE CARDINAL SIGNS OF OTEOARTHRITIS:**

* **Narrowing of the joint space**
* **Subchondral sclerosis**
* **Marginal osteophytes**
* **Subchondral cysts**
* **Bone remodeling**

**COMPLICATIONS.**

**1.Capsular herniation**

**2.Loose bodies**

**3.Rotator cuff dysfunction**

**4.Spinal stenosis**

**5.Spondylolisthesis**

**DIFFERENTIAL DIGNOSIS.**

**1.Avascular necrosis**

**2.Inflammatory arthropathies>Rheumatoid arthritis**

**3.Polyarthritis of fingers>R.A, G.A.**

**MANAGEMENT.**

 **The management depends on the joint or joints involved, the stage of the disorder, the severity of the symptoms, the age of the patient and functional needs.**

**Treatment is symptomatic. The principles are:**

* **Maintain movement and muscle strength**
* **Protect the joint from overload**
* **Relieve pain**
* **Modify daily activities**
* **Physiotherapy**
* **Analgesic medication.**
* **Senior review>Realignment osteotomy, Joint replacement, Arthrodesis.**