

CLINICAL EVALUATION OF AN ORTHOPAEDIC AND TRAUMA PATIENT.

- Orthopaedics – Derived from 2 Greek words:
 - ‘Ortho’ – Straight
 - ‘Paedics’ – child.
- Coined by French physician **Nicholas Andry** – 1741.
- The art was then concerned with straightening of a crooked child using primitive means.
- Orthopaedic problems common – so throughout the ages there have been orthopaedic practitioners such as the bone setters.

- The bone setters were regarded with disdain as they had not sat any examination.
- Their work came to be known as a result of the last bone setter – **Evans Thomas**.
- Put all his five sons through medical school.
- One of them **Hugh Owen** Thomas became one of the greatest orthopaedic pioneers of our time.
- He practiced in Liverpool although he had studies in Edinburgh and did the London MRCS in 1857.
- British orthopaedics developed greatly by Hugh Owen Thomas (1834 -18..) and his nephew Robert Jones (1857 – 1933)
- Our mode of orthopaedics derived from the British model.
- A number of current Kenyan orthopaedic surgeons studied at the Robert Jones and Agnes Hunt orthopaedic Hospital in Oswestry, England.

- Modern orthopaedic surgery has developed a long way from time of Andry.
 - Today orthopaedics covers:-
 - Neonates – Geriatrics.
 - Trauma
 - Sports Medicine
 - Degenerative diseases of joints.
- Scope of Orthopaedics:-**
- Bones
 - Joints
 - Muscles
 - Tendons
 - Nerves.
 - In short: the Locomotor system.

- **Diseases affecting the Locomotor system falls into seven categories:-**

- Congenital and developmental
- Infective and inflammatory
- Arthritic and rheumatic disorders.
- Metabolic and endocrinological disorders.
- Tumours and Tumour like conditions.
- Sensory disturbance and muscle weakness.
- Injury (Trauma) and mechanical disorders

- **Diagnosis goes through stages:-**
 - History
 - Examination
 - Investigations
 - Routine
 - Specialised.

History:

- Encourage patient to give his/her story.
- Ask relevant questions to clarify the picture
- Of concern are:-
 - Pain.
 - Stiffness
 - Locking
 - Giving way
 - Swelling
 - Deformity.
 - Weakness
 - Instability
 - Abnormal sensation
 - Loss of function.

- Also check:
 - Past history
 - Family history
 - Social history

- Examination:
 - Look
 - Feel
 - Move
- Every joint, limb and parts of the body will have their own terminology and this will be described at each stop.

- **Move:**
 - First observe **passive movement**.
 - Then **active movement**.
 - **Measurements:-**
 - Lengths
 - Angles
- Types of movement
 - Flexion/Extension
 - Adduction/Abduction
 - External/Internal rotation
 - Pronation/Supination
 - Eversion/Inversion
 - Circumduction
- There may be excessive movement at a joint or stiffness (reduced).

- **Deformity**

- Broad term

- May be whole individual

- A Joint.

- A Limb.

- Varus/valgus – Bent medially or laterally

- Kyphosis/lordosis/scoliosis.

- Postural deformity

- Structural deformity

- Joint deformity may be due to:

- contractures.

- Muscle imbalance

- Dislocation

- Joint destruction.

- **Bony swellings:**

- Note size/number
- Site
- Margin
- Consistency
- Tenderness.

Neurological examination:-

- **Inspection**

- Wasting? Hypertrophy) limb size

- **Palpation**

- Muscle bulk
- Tenderness
- Fasciculations (on tapping)

- **Tone**

- Spasticity (UMNL); Clonus
- Parkinsonian extrapyramidal rigidity

- **Power → (graded 0 – 5)**

- 0 → No movement.
- 1 → Flicker
- 2 → Movement with gravity eliminated.
- 3 → Movement against gravity.

- 4 → Movement against resistance.

- 5 → Normal power.

- (MRC scale)

- **Reflexes:**

- Deep tendon reflexes

- Knee jerk
- Biceps

- Superficial reflexes

- Plantar reflex
- Cremasteric reflex
- Abdominal reflex

- **Coordination**

- **Sensory exam**

Investigations:-

- Blood tests
- Diagnostic imaging
 - Plain x-rays.
 - CT scan, MRI, Scans (+/- contrast), Ultrasound
- Synovial fluid analysis
- Blood, urine, sputum – microscopy and cultures.
- Specialised tests
 - Arthroscopy
 - Electro-diagnosis.
- Biopsy – Open
 - Closed – Fine needle aspirate
 - Core biopsy.

Management of orthopaedic conditions

Classification:-

- Especially important in orthopaedic trauma.
- Determines the way management will proceed.
- Example:
 - Open vs. closed fractures.
 - Non-comminuted vs. comminuted fractures.
 - Displaced vs. un-displaced fractures.

- **Conservative Management:**

- Drugs
- Physiotherapy
- Occupational therapy
- Chiropody
- Casting.

- **Operative management:**

- Manipulation/ cast/ splintage
- Open arthroscopy
- Osteotomy
 - Varus
 - Valgus