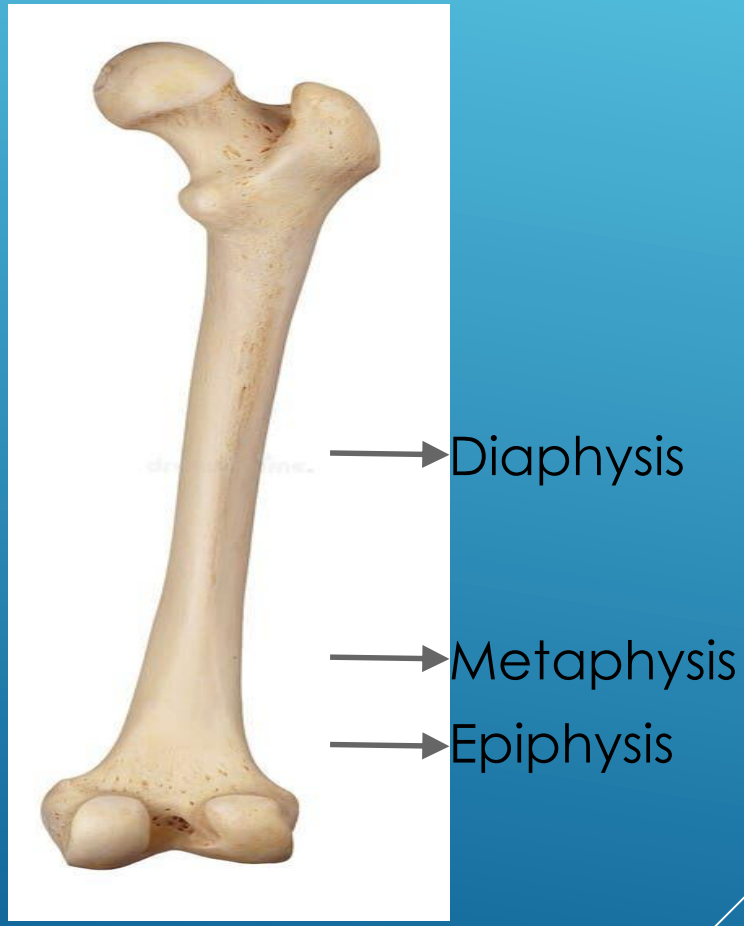
Osteomyelitis

Dr.Nazmus Shadad
Department of Orthopaedics
Ad-din Momin Medical College Hospital

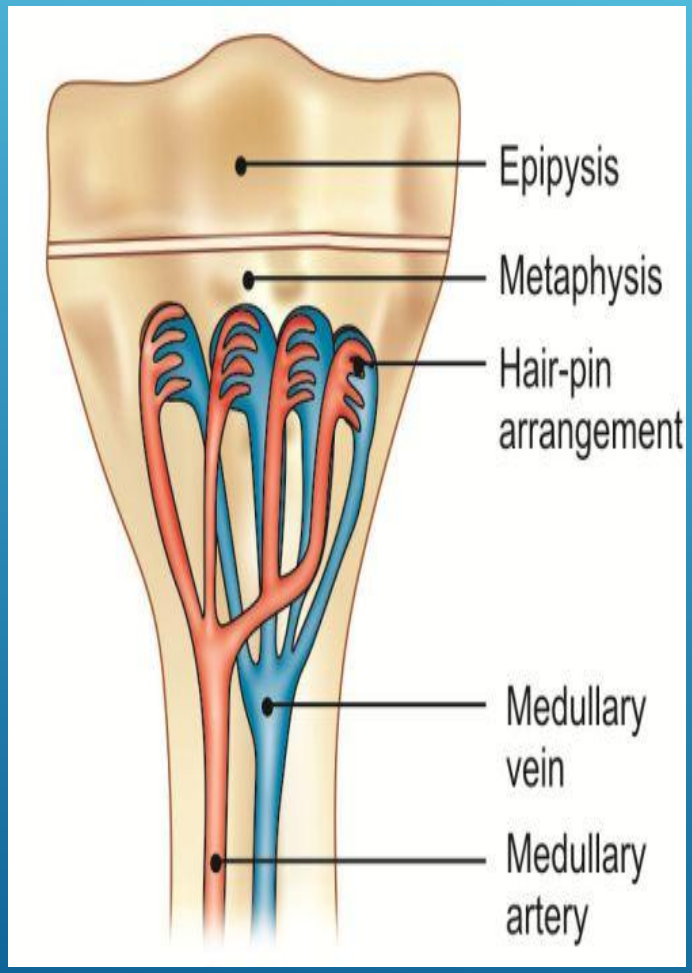
COMMONEST SITE OF INVOLMENT

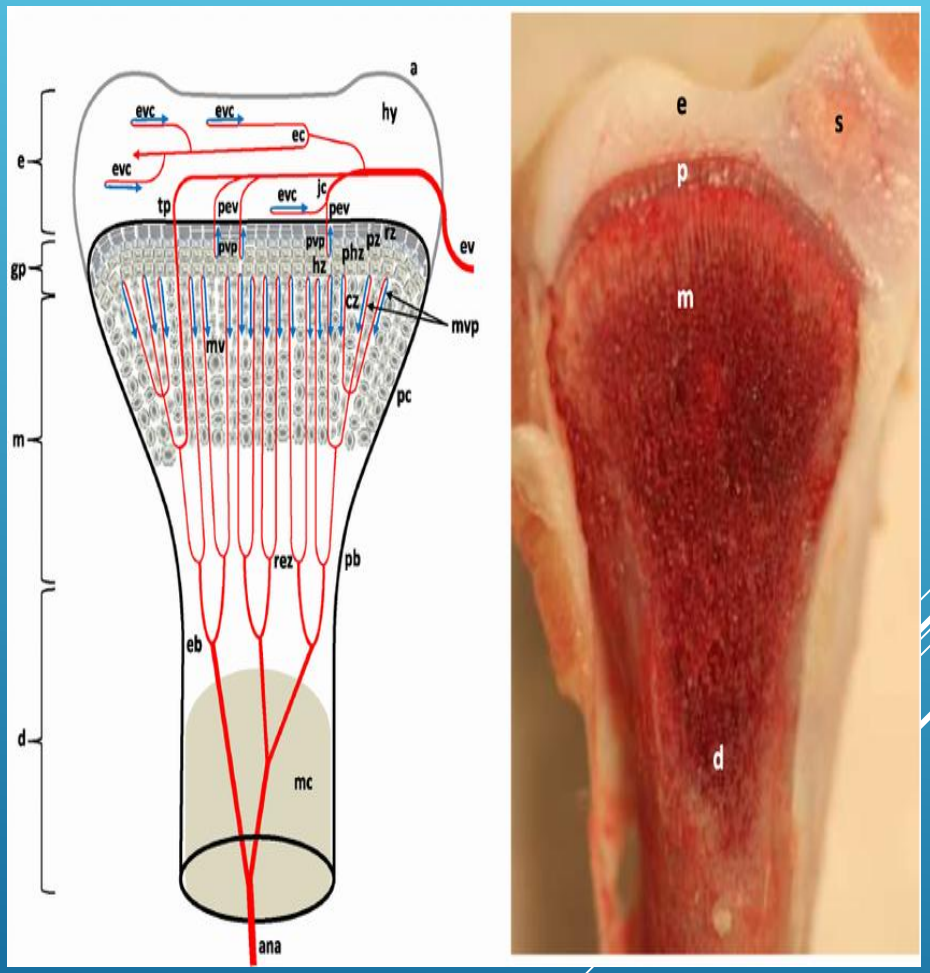
Metaphysis of growing long bone.



Why Metaphysis commonly affected?

- Metaphyseal region is more vascular.
- **Hair pin** manner of capillary arrangement.
- Presence of end artery with small caliber
- Relative lack of phagocytic activity
- End part of the bone which is more susceptible to trauma
- Anoxia- lack of Oxygen


Epipysis
Metaphysis
Hair-pin arrangement
Medullary vein
Medullary artery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Dx of Acute Pyogenic Osteomyelitis

- By taking history of the patient
- From Clinical examination
  - General physical examination
  - Local examination
  - Other systemic examination
- Relevant investigations

History

- Presence of antecedent focus of infection. Such as-
  -Dental carries
  -Boil
  -Curbancle
  -CSOM
- Low socio-economic condition
- H/O Trauma

GENERAL EXAMINATION

- ✓ Irritable or toxic
- ✓ Restless
- ✓ Dehydrated
- ✓ Raised temperature
- ✓ Anemia: +
- ✓ BP: May be low
- ✓ Tachycardia
- ✓ Lymphadenopathy

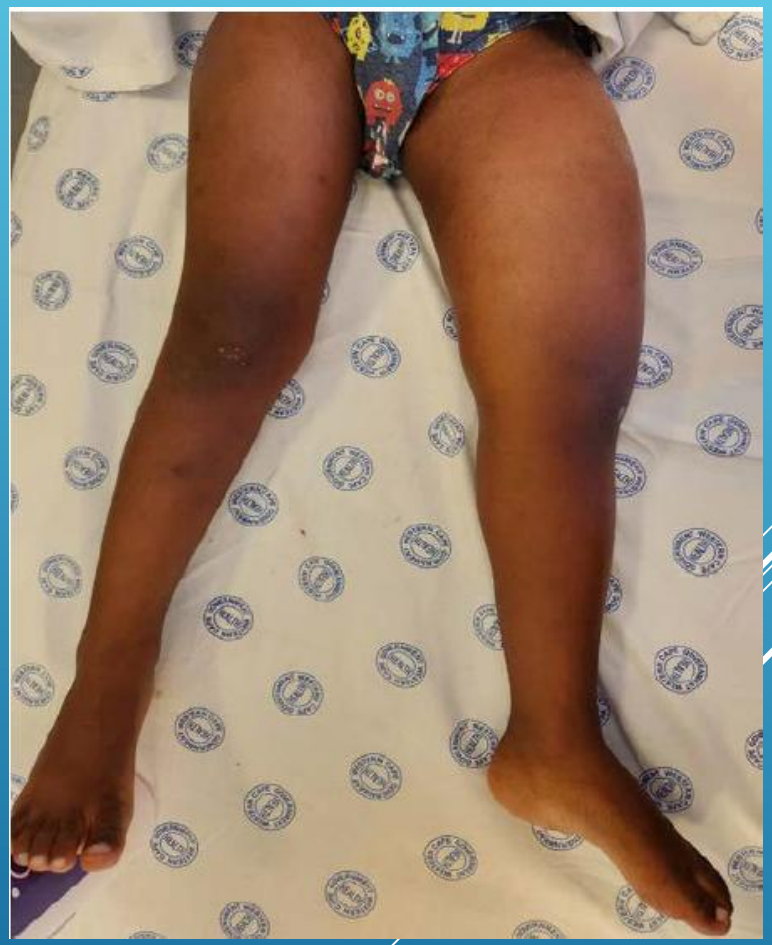
CLINICAL FEATURES

Symptoms:

- Initially only tenderness at metaphyseal region
- Pt refuses to use or not to allow to be handled one limb
- Lately local tenderness & oedematous

Signs

- Temperature-raised
- Local tenderness
- Swelling near the joint
- Limb is in semi-flexed position
- Surrounding muscle are in spasm



Distal femur acute osteomye

RELEVANT INVESTIGATIONS

- Complete Blood Count :
  TC of WBC: Increase
  DC of WBC: Leukocytosis
  ESR : Raised
- CRP: Markedly increases
- ASO Titer: Increase
- Blood & Pus for C/S.
- Bone scanning
- CT scan
- MRI of affected part
- X-ray of local part

MANAGEMENT OF ACUTE PYOGENIC OSTEOYELITIS

General management:

RESTS sums up the general mx

R- Rest in bed

E- Elevation of affected part

S- Systemic rx e.g. IV fluid, blood transfusion

T- Treat with antibiotics

S- Surgery to prevent complications

LOCAL MANAGEMENT

- Immobilization of local parts by splintage/plaster
- Surgical drainage of pus (if present)-

Multiple drill over the bone by drill machine usually 1-2cm area

Oozing of drainage

Cut & Remove 1-2 cm bone

↓

Close the muscle

↓

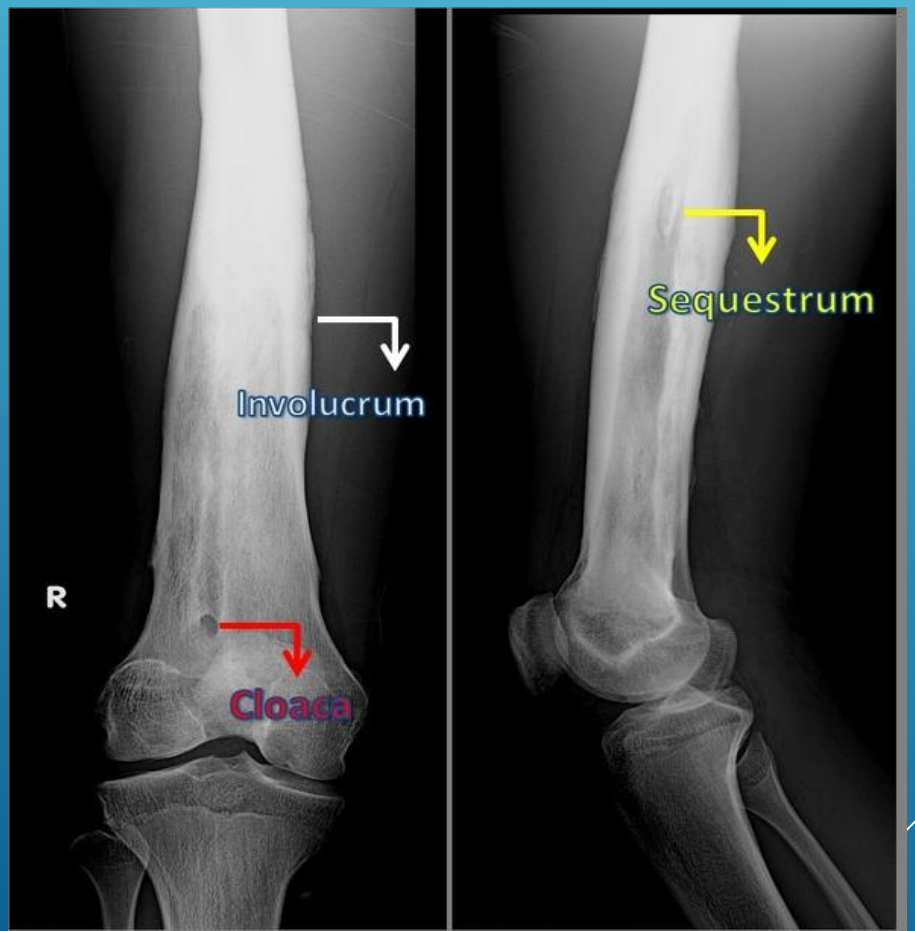
↓

FATE OF ACUTE OSTEOMYELITIS

- Complete resolution.
- Chronic osteomyelitis
- Bordie's abscess (Surgical drainage)
- Involucrum formation (Operative mx)
- Sequestrum formation (Sequestromy)

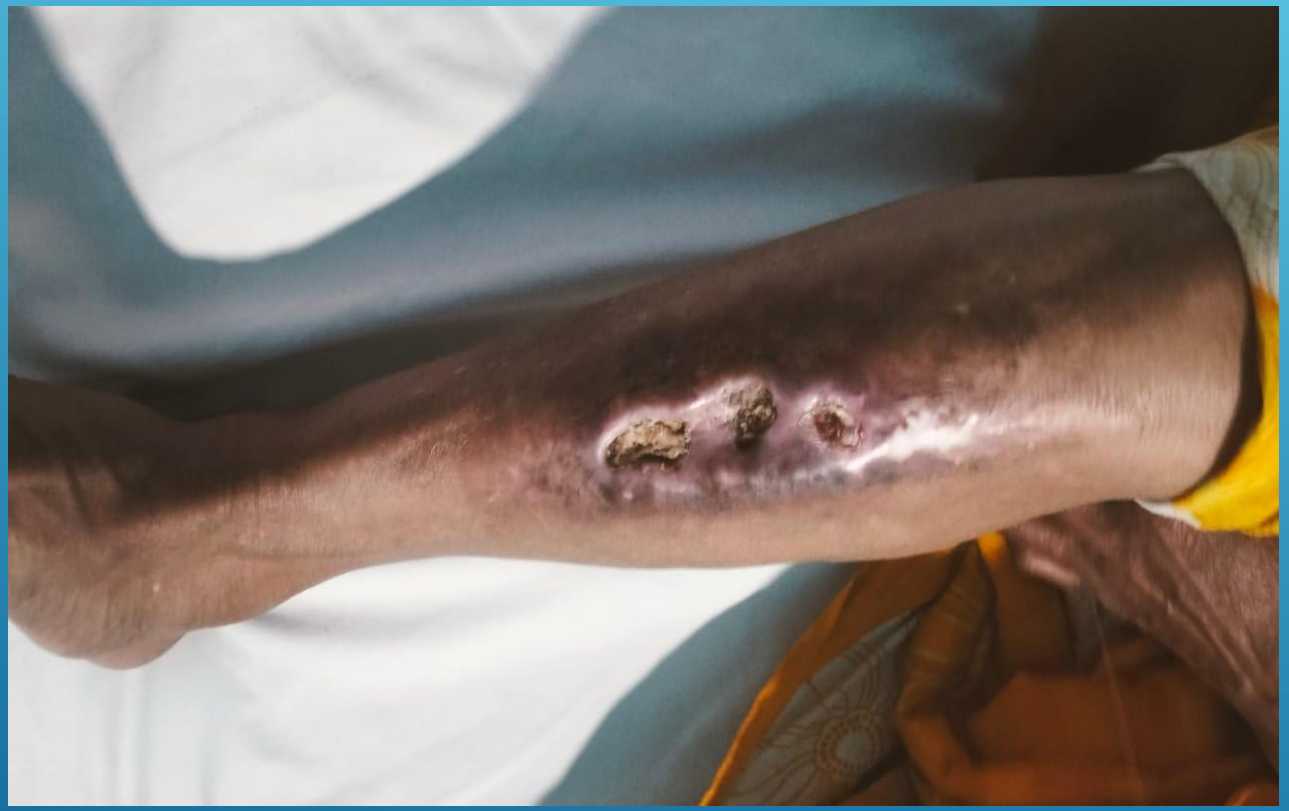
Sequestrum: Formation of dead piece of bone in the living bone.

Involucrum : Newly formed bone around the Sequestrum.



CHRONIC PYOGENIC OSTEOMYELITIS

- Inflammation of the bone lasting for more than 2 weeks.



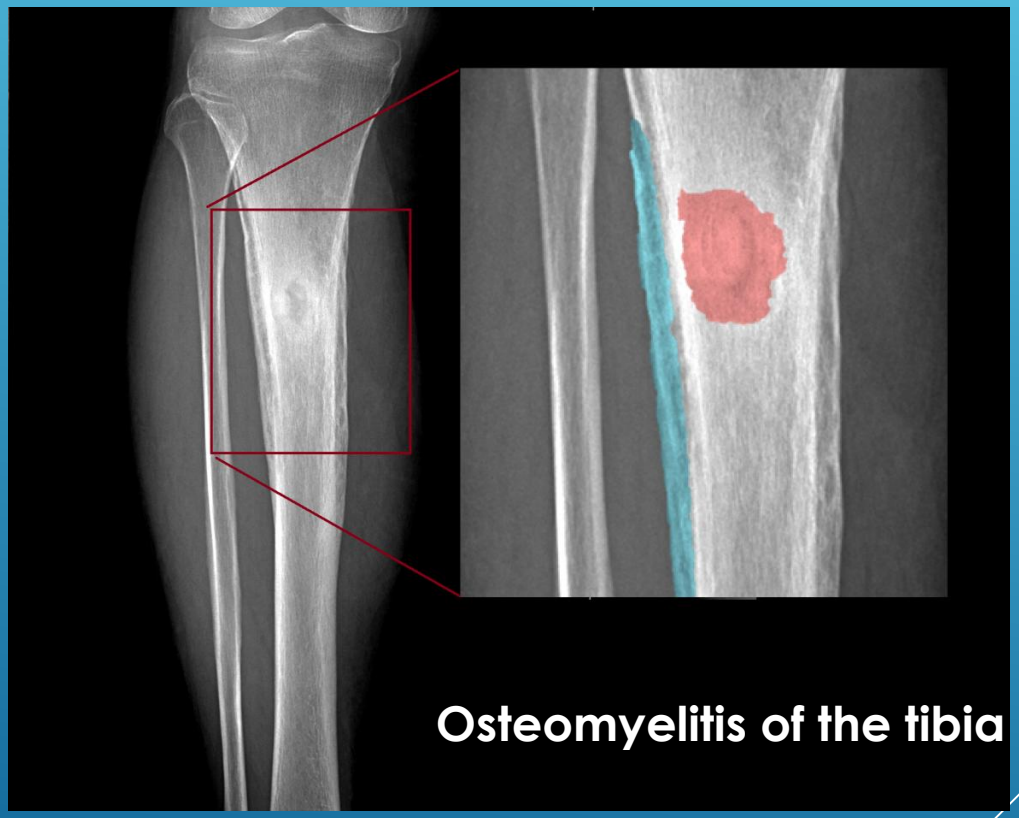
Picture taken from Female Orthopedic Surgery Ward, BAMCH

ETIOLOGY

- Sequelae of APOM (10-15%)
- Chronic from onset *Mycobacterium Tuberculosis* of the bone.
- Any open fracture/infection introduces through an external wound.
- After any open reduction & internal fixation
- H/O previous orthopedic surgery.

HALLMARKS OF CPOM

- Present of dead piece of bone within the living bone.



Focus of infection highlighted in red and
lateral aspect of the involucrum highlighted in blue.

History:

- H/O previous orthopedic surgery
- H/O open fracture
- H/O bomb blast injury

CLINICAL FEATURES

- Patient may present with-
- ✓ Irregular thickening of the bone.
- ✓ Sinus (usually multiple & fixed with the underlying bone)
- ✓ Pathological fracture
- ✓ Deformity, pain, fever & swelling in acute aggravation of CPOM

INVESTIGATIONS

- CBC with ESR
- Hb%, TC, DC
- Pus for C/S (if present)
- Sinogram (if sinus present)
- X-Ray of the local part AP & lateral view
- CT scan

MANAGEMENT

General Management

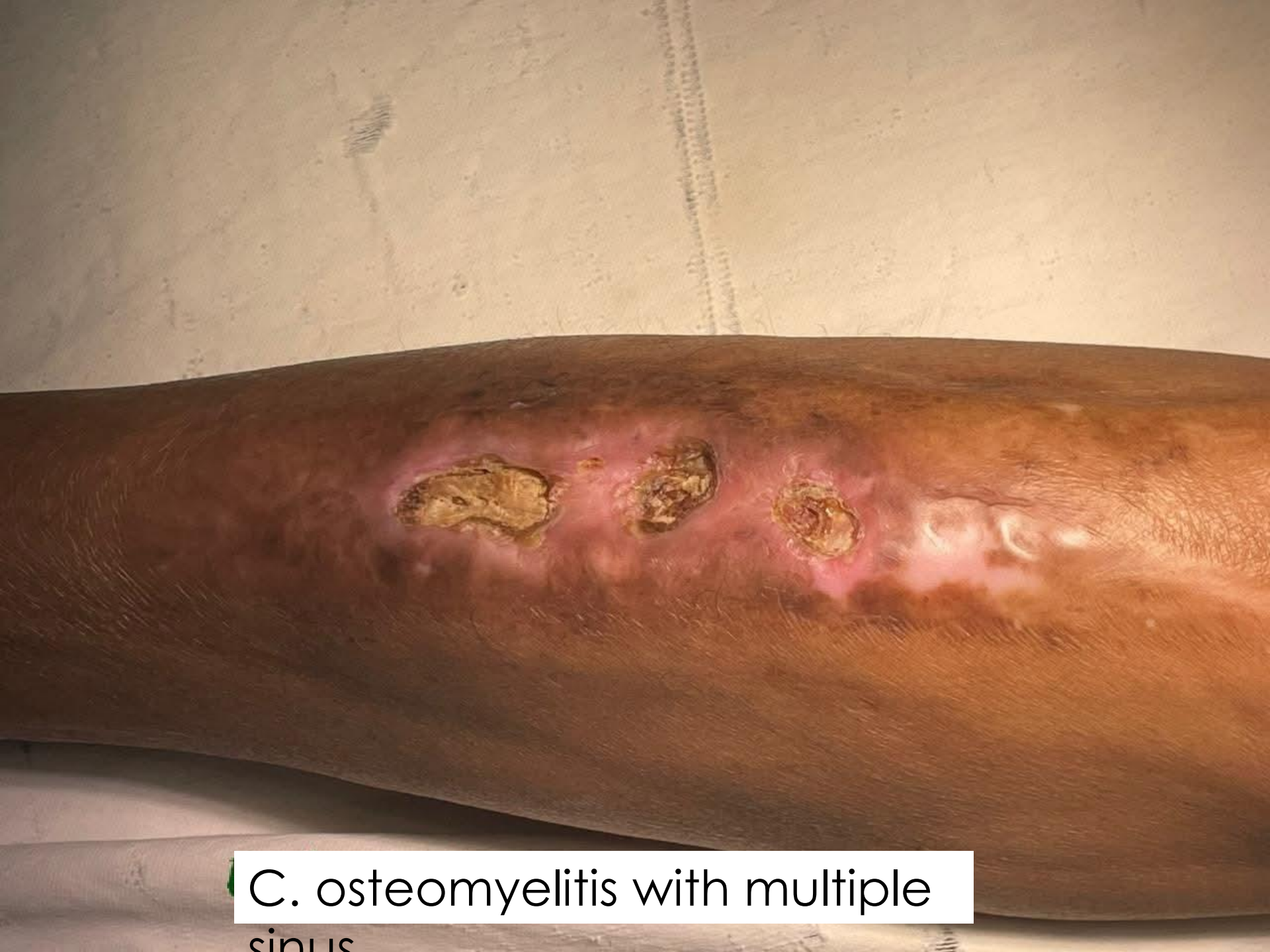
- Correction of nutrition.
- Correction of electrolytes.
- Correction of anemia by blood transfusion.
- Improvement of diet by high protein diet.
- Appropriate antibiotic after pus for C/S.

Surgery:

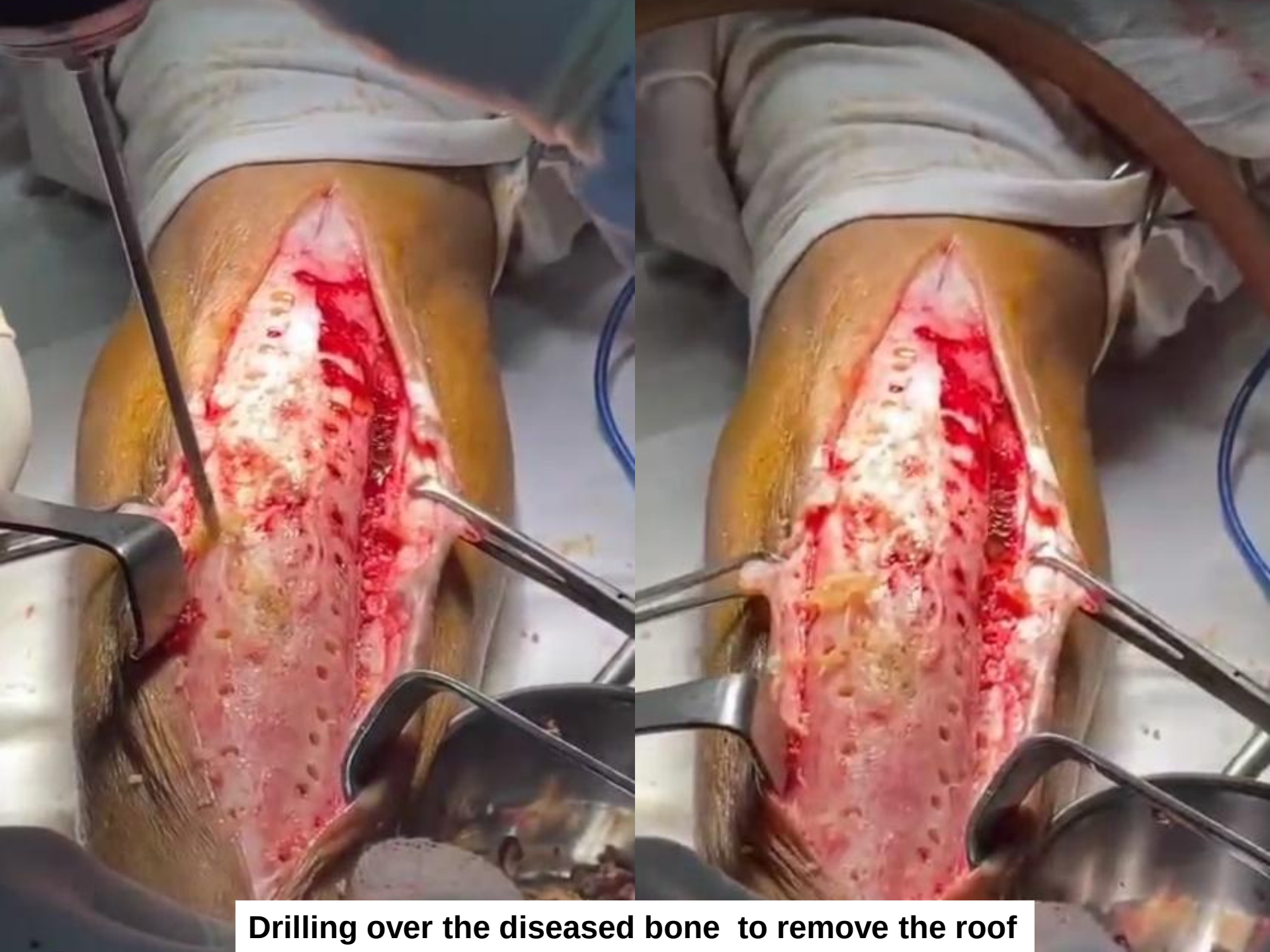
De-roofing + Sequestrectomy + Saucerization

SURGERY

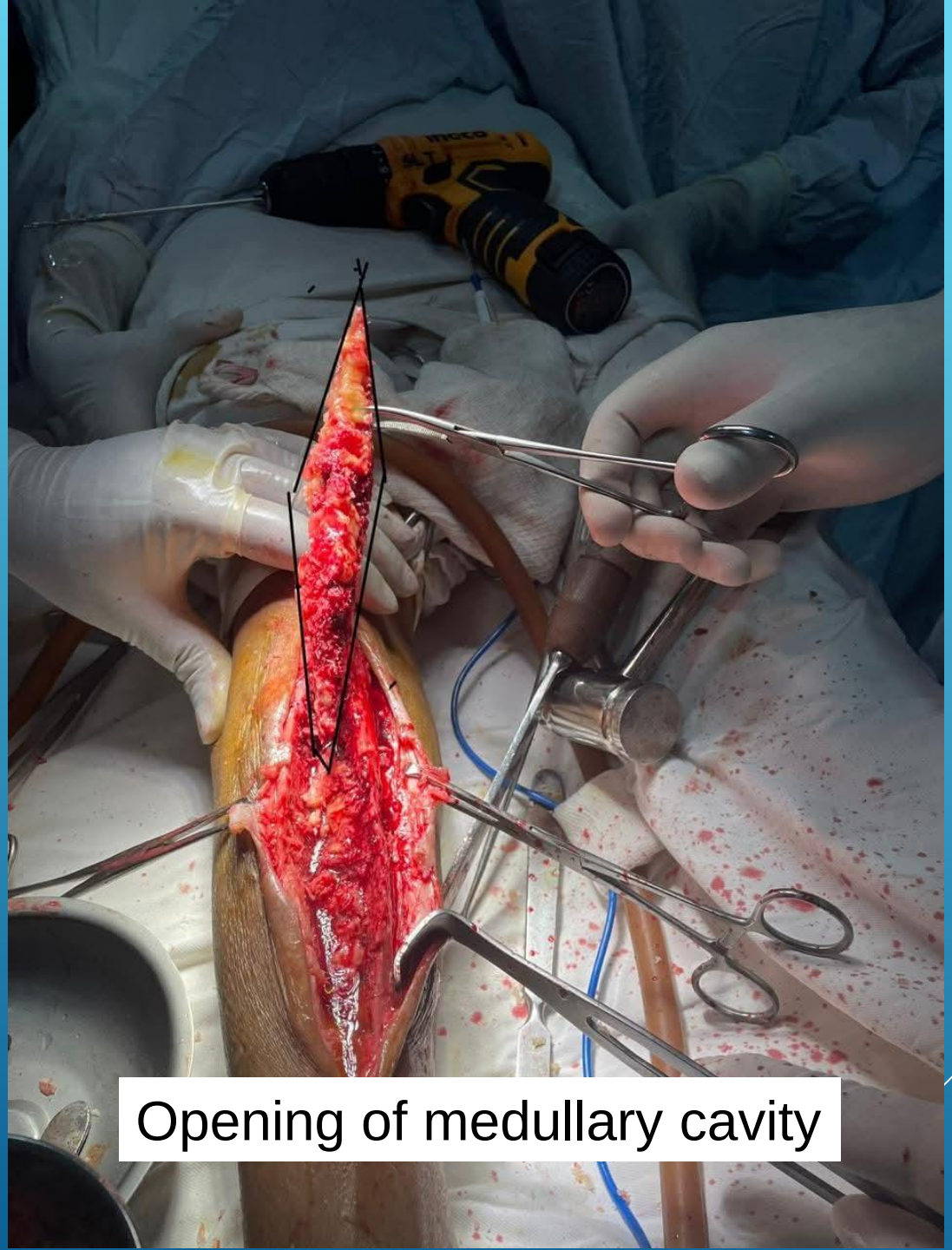
- **De-roofing**: Cut the roof of sequestrum
- Remove the sequestrum by **Sequestrum** forceps
- A bone shaped like saucer-**Saucerization**



C. osteomyelitis with multiple sinus



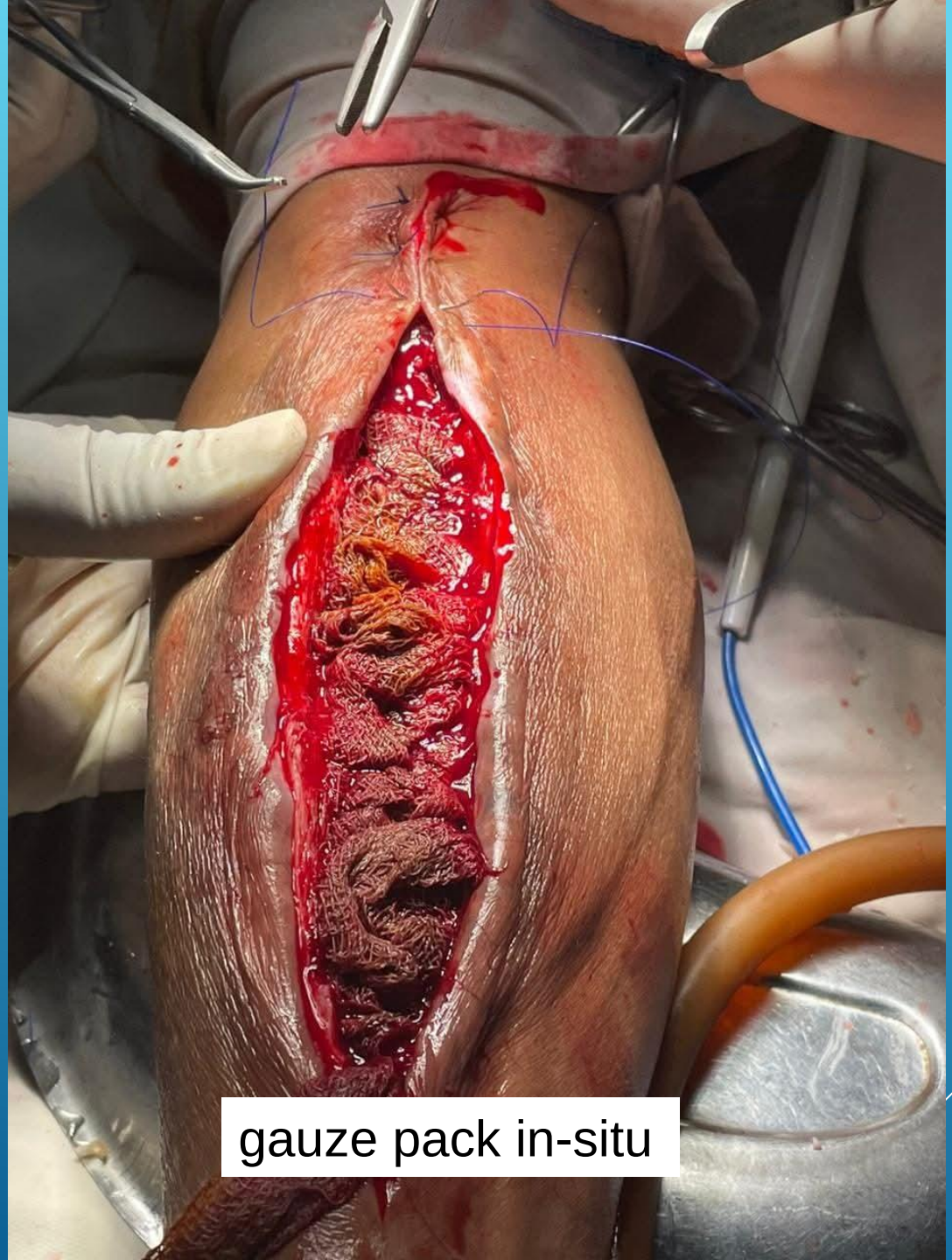
Drilling over the diseased bone to remove the roof



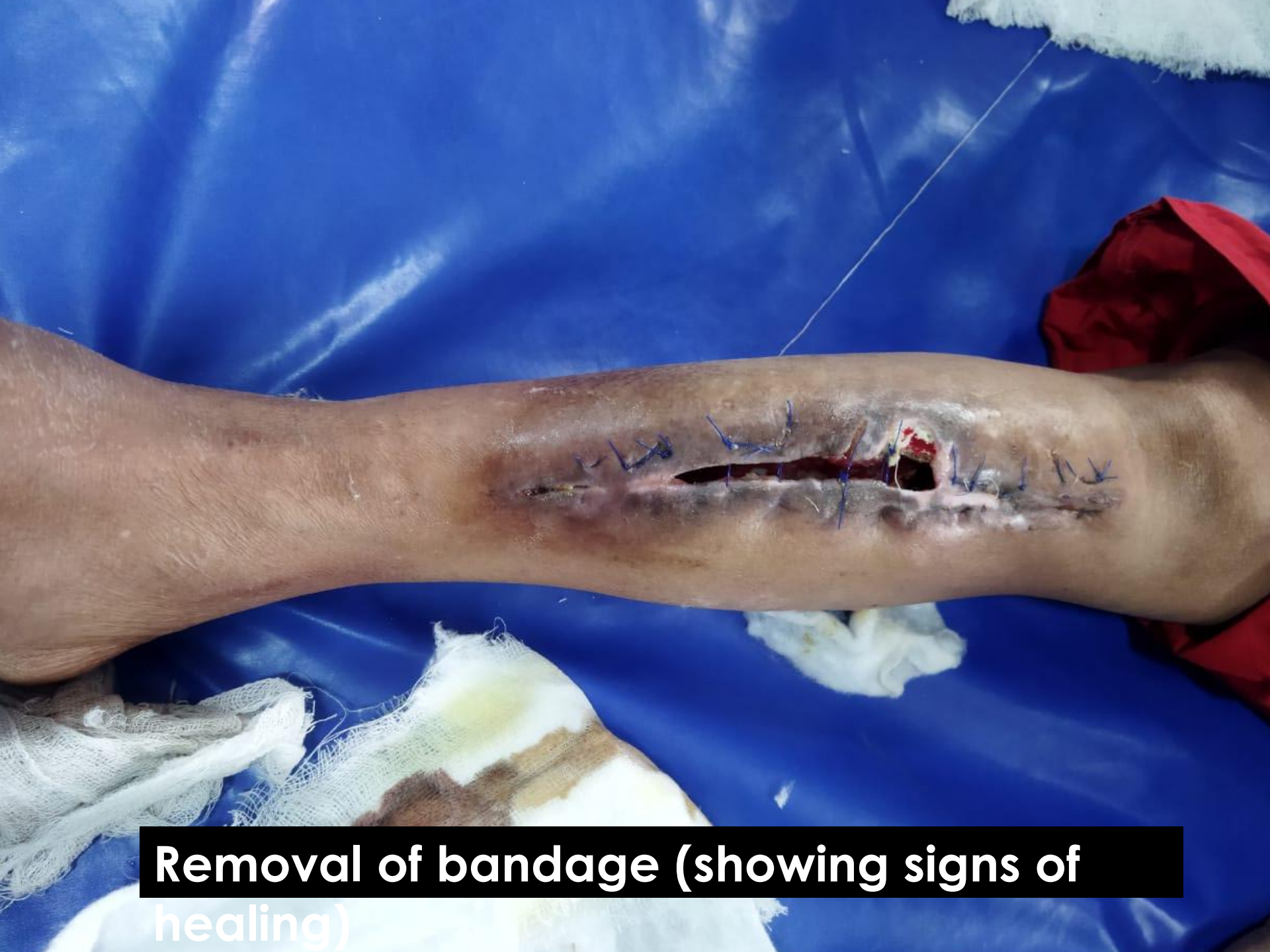
Opening of medullary cavity

Drainage of pus & removal of dead pieces of bone

Complete drainage of pus


gauze pack in-situ


Closuring of the wound
After Surgery



Removal of bandage (showing signs of healing)


Healthy Granulation Tissue

COMPLICATIONS

- **Pathological fracture**: When fracture occurs through a disease bone spontaneously or due to trivial trauma
- Growth disturbance
- Amyloidosis
- Muscle contracture
- Epithelioma of sinus tract (1%)


THANK YOU