

An Unusual Infective Testicular Pathology

- Presented by: Nikhar Salvi

Case Details

- 24-year-old male
- Right testicular pain and swelling for 14 days
- Fever with chills for 15 days
- No similar prior complaints
- Non-contributory family history
- Patient was treated at outside hospital with antibiotics for a week but the symptoms had not been relieved hence was referred to us.

Clinical Examination

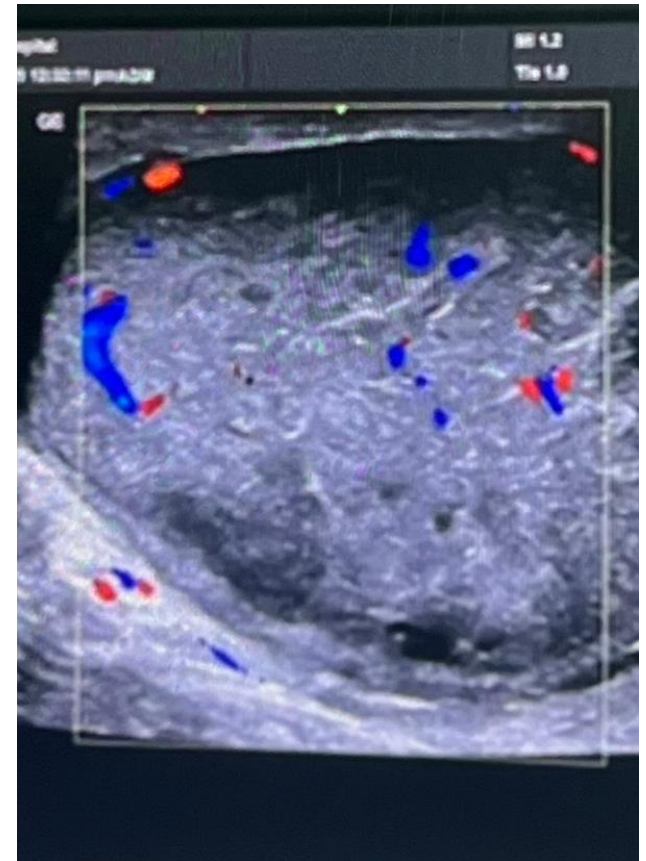
- Right testis: Enlarged, firm, tender
- Thickened epididymis (especially tail)
- No transillumination
- Left testis: Normal
- No scrotal skin changes or sinus

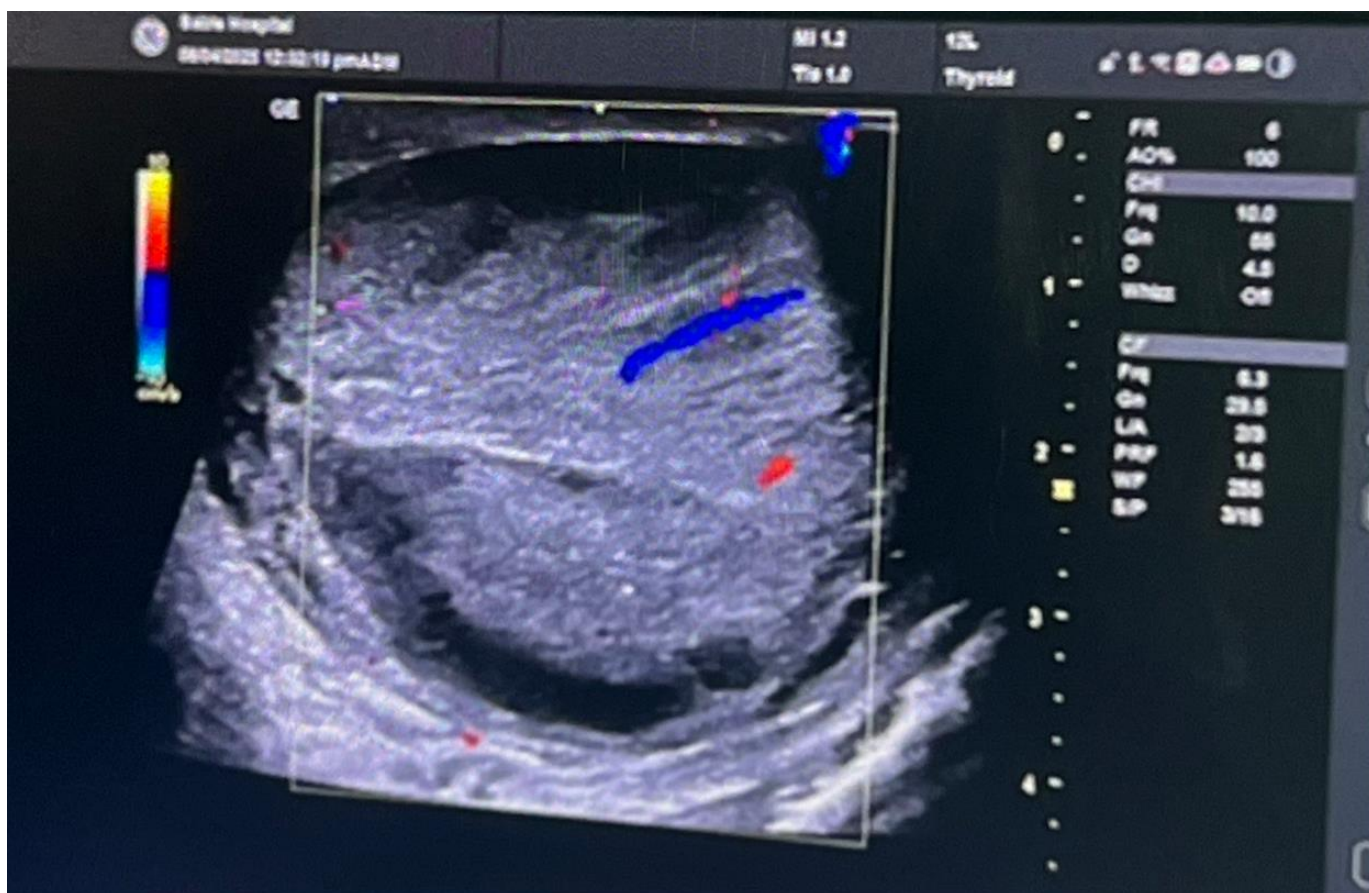
Investigations

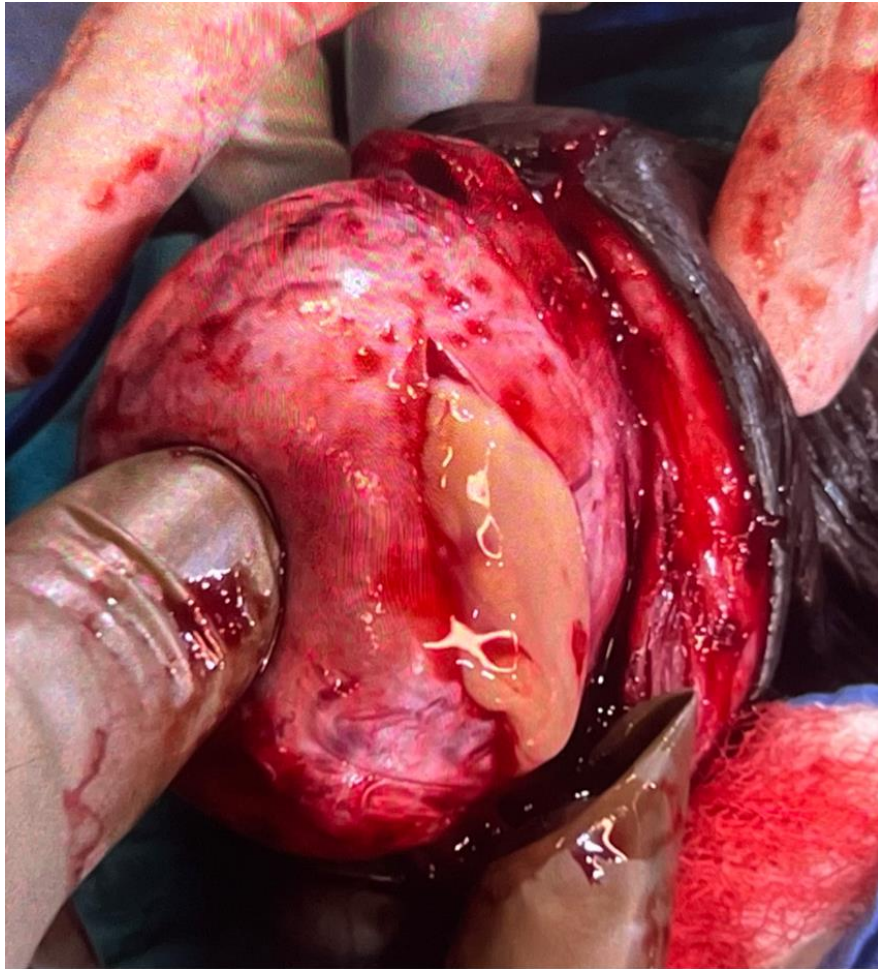
- Hemoglobin: 13.7
- TLC: 19.100
- Platelets: 243,000
- Creatinine: 0.84
- Urine Pus cells: 20-25
- Urine Culture & Sensitivity: E.Coli

Scrotal Doppler Findings

- Mild enlargement and edema of right testicle & epididymis
- Lesion: 21 x 13 x 7 mm posteriorly with increased vascularity
- Suggestive of: Acute right epididymo-orchitis
→ testicular abscess







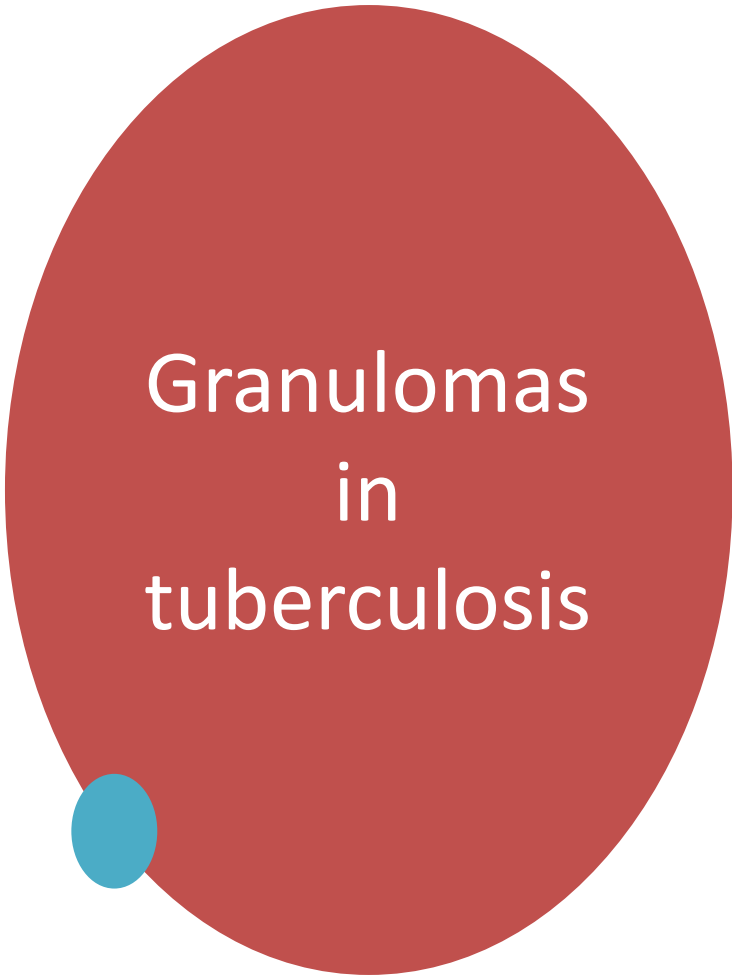





Intraoperative Findings

- Edematous right scrotal layers adherent to testis
- Pus drained from testes and sent for culture
- Signs of infarction noted
- Right orchidectomy performed
- Specimen sent for Histopathology

- Right testis shows granulomatous inflammation with abscess suggestive of KOCHs

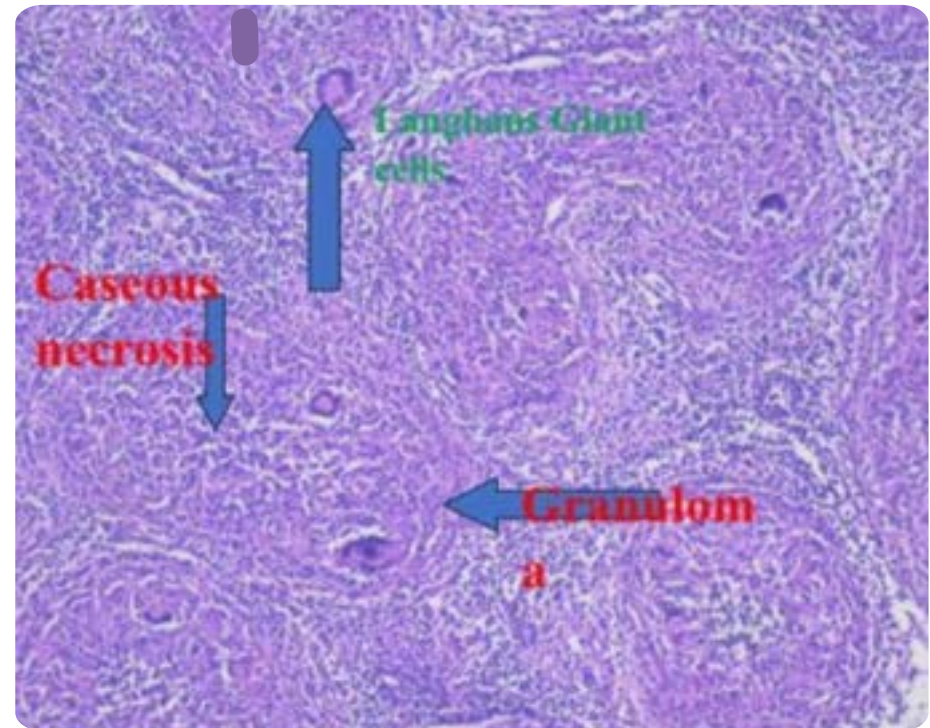


Granulomas in tuberculosis

- Gross Surgical specimen details: Received, already cut opened, right testis measuring 6x5x5 cm in size.
 - External surface is congested.
 - Cut surface is necrotic.
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Granulomas in tuberculosis

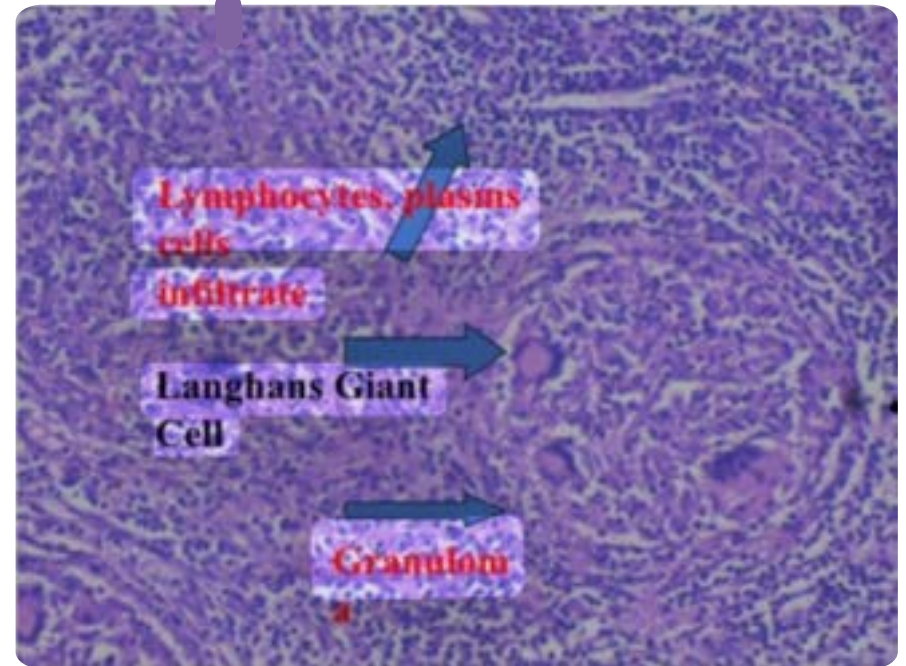
- SLIDE SHOWS - Shows testicular tissue with effaced architecture.
- Focal granulomas noted composed of caseous necrosis surrounded by epithelioid histiocytes, lymphocytes and multinucleate Langhan's type giant cells.
- Abscess formation noted.
- No evidence of atypia or malignancy.



Granulomas in tuberculosis

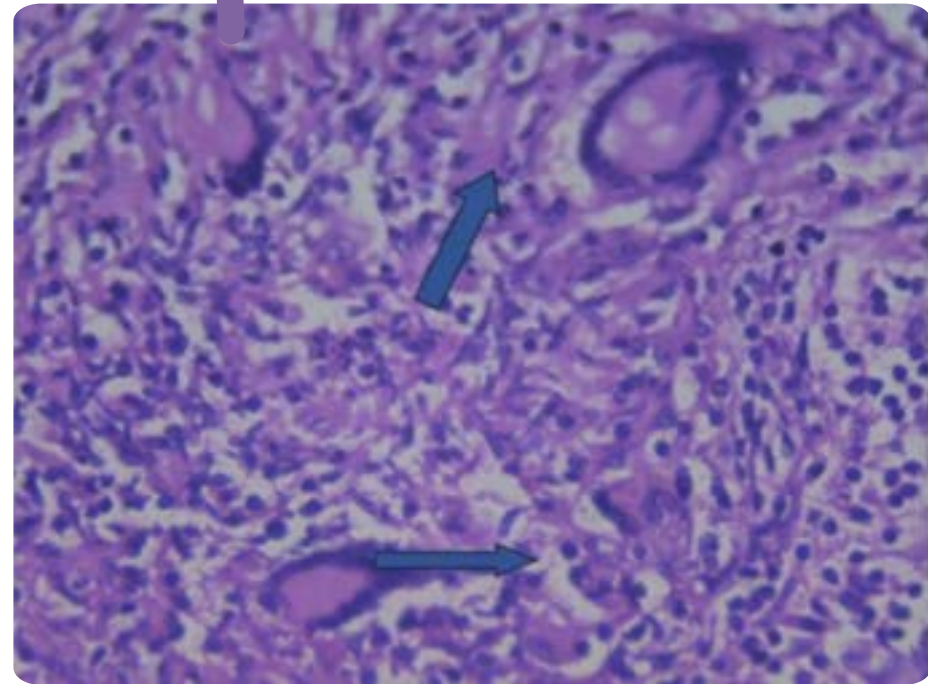
- Langhans giant cells arise from the fusion of several epithelioid cells (a type of macrophage) into a single, large cell with multiple nuclei.

These cells are a hallmark of granulomas, which are areas of chronic inflammation where the body attempts to wall off a pathogen or foreign material.



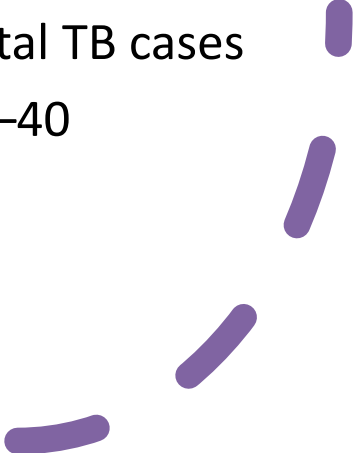
Granulomas in tuberculosis

- Langhans giant cells are multinucleated giant cells with a characteristic horseshoe-shaped nuclear arrangement, found within granulomas.



Introduction

– Testicular Tuberculosis

- Extrapulmonary TB accounts for ~15% of new TB cases
 - Common extrapulmonary sites: Pleura, lymph nodes, bones, joints, meninges, peritoneum, genitourinary system
 - In genitourinary tract: Affects kidneys, prostate, epididymis, seminal vesicles
 - Testicular TB is rare: ~3% of genital TB cases
 - Most common in males aged 20–40
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Discussion

- Isolated testicular TB is rare
- Usually part of diffuse genital tract TB
- Routes: Canalicular, Hematogenous (rare), Lymphatic
- Symptoms: Unilateral Testicular/scrotal swelling (painful or painless), Discharging sinus(advanced)
- Diagnosis: Scrotal ultrasound, Fine Needle Aspiration Cytology (FNAC)
- Biopsy in elderly patients to rule out malignancy



Ultrasonographic Classification

- USG patterns:
- Homogeneously hypoechoic
- Heterogeneously hypoechoic
- Miliary
- Nodular
- Helps differentiate from tumors and abscesses

Importance of Early Diagnosis

- Prevents unnecessary surgery
- Preserves fertility
- Fertility impacts: ↓ Sperm count & motility, Atrophy, Duct obstruction



Urinalysis: Shows sterile pyuria, hematuria, and proteinuria.

Urine culture for Mycobacterium tuberculosis (MTB):

3 consecutive early morning samples are recommended.

Use Lowenstein-Jensen medium or liquid culture (MGIT 960).

A solid egg-based culture medium used to isolate Mycobacterium tuberculosis.

Selective for mycobacteria due to the presence of malachite green, which inhibits contaminants.

Time-consuming: can take 4–8 weeks for results.

Advantages:

Gold standard for definitive diagnosis.

Can detect low numbers of bacteria (more sensitive than smear).

Allows drug sensitivity testing (though takes longer).

PCR for MTB DNA in urine: High sensitivity and specificity.

Tuberculin Skin Test (TST) or IGRA

Indicates exposure to TB but not diagnostic of active disease.

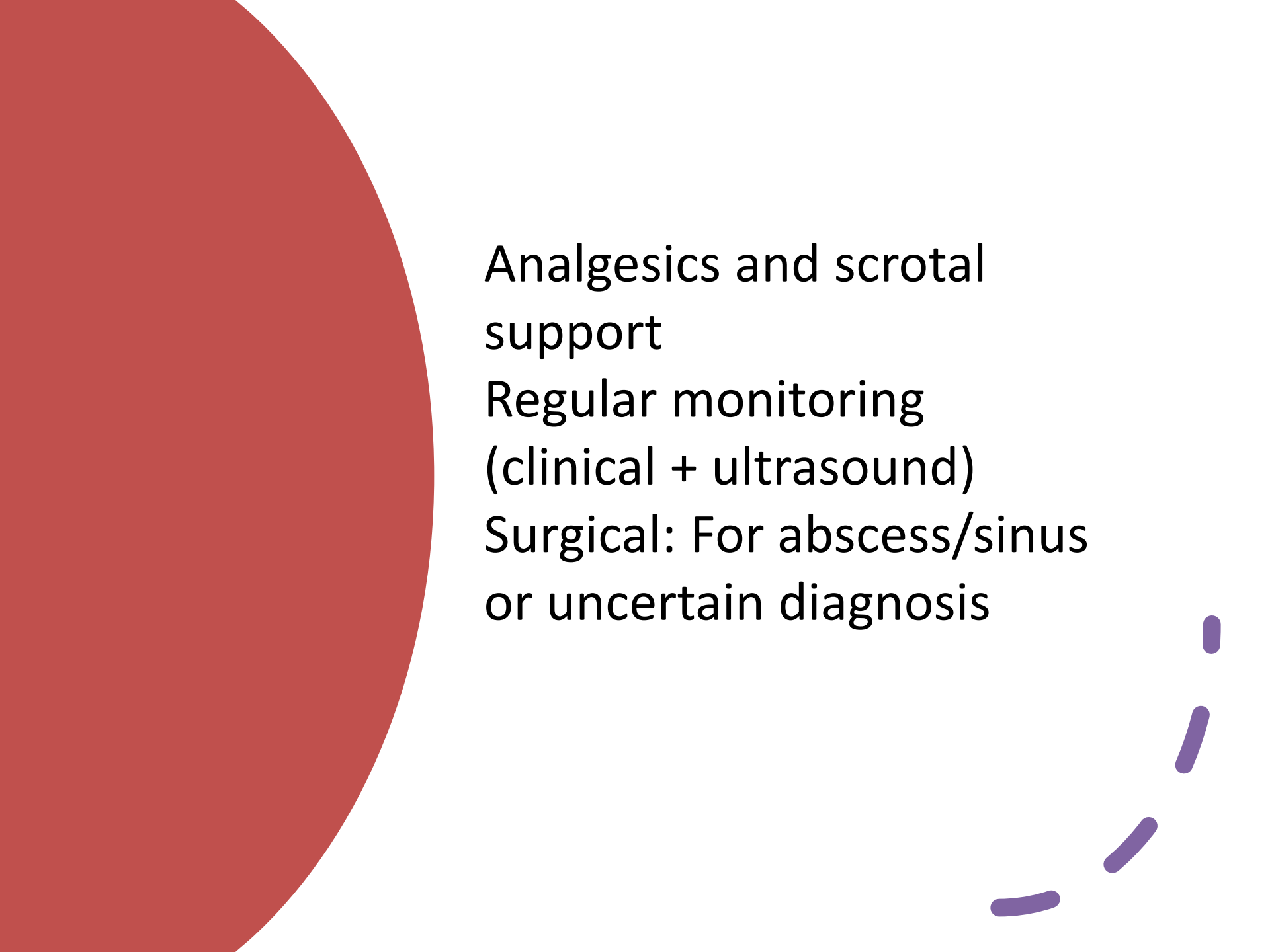


- BACTEC is a culture-based diagnostic system used to detect *Mycobacterium tuberculosis* and test for drug susceptibility (especially rifampicin and isoniazid).
- Uses liquid culture medium for faster TB detection compared to traditional solid culture.
- Positive result: usually within 7–14 days
- Advantages:
- Faster than conventional culture.
- More sensitive than smear microscopy.
- Can detect drug-resistant TB (multi-drug resistant TB / MDR-TB).

- Nucleic Acid Amplification Test (NAAT) for Tuberculosis (TB) is a molecular diagnostic technique used to detect the DNA or RNA of *Mycobacterium tuberculosis* (MTB), the bacterium that causes TB. NAATs offer rapid, sensitive, and specific identification of TB, often within a few hours.
- Detects TB DNA or RNA directly from clinical samples (e.g., sputum, urine, pus, tissue).
- Provides rapid results (within 2–6 hours) compared to culture methods (which take weeks).
- Can also detect rifampicin resistance (an important drug in TB treatment).
- GeneXpert MTB/RIF (most common)
- Detects *Mycobacterium tuberculosis* complex DNA.
- Simultaneously detects rifampicin resistance.
- Cartridge-based, automated, and widely used in India under RNTCP/NTEP.
- TrueNat
- Indian-developed portable PCR platform.
- Used in peripheral centers as a point-of-care test.
- Also detects rifampicin resistance (TrueNat MTB-RIF Dx).
- Line Probe Assay (LPA)
- Detects resistance to isoniazid and rifampicin.
- Used in drug-resistant TB cases

Treatment

- Medical (Category I ATT – DOTS Regimen):
 - - Intensive Phase (2 months): HRZE
 - - Continuation Phase (4 months): HR
- Extended (9–12 months): if delayed response, renal involvement, or complications.
- Drug-Resistant GUTB
- MDR-TB (Isoniazid + Rifampicin resistance)
- Levofloxacin
- Bedaquiline (first 6 months)
- Linezolid
- Clofazimine
- Cycloserine
- Duration: 9–20 months depending on type and severity



Analgesics and scrotal
support
Regular monitoring
(clinical + ultrasound)
Surgical: For abscess/sinus
or uncertain diagnosis



Thank
You

