A Report on 3 Cases of Tuberculous Injection Abscess

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Abstract
Presenting three cases of Tuberculous Injection Abscess.

Introduction
Mycobacteria are acid fast, weakly gram positive rods. The modified Runyon classification of mycobacteria is divided into Slow Growing Mycobacteria obligate human pathogen and facultative human pathogens. Rapidly Growing Mycobacteria facultative human pathogens.

Infections due to mycobacterium tuberculosis are classified according to the inoculation route. The inoculation can occur from an exogenous source, from an endogenous source or from haematogenous spread.

Both the general immunologic state of the host and the specific host immunity are factors to decide the lesion type that will develop from each type of inoculation.

Non-tuberculous mycobacteria unlike Mycobacteria tuberculosis are not usually transmitted from person to person. These opportunistic organisms are found in many types of water and soil, with entry most often from direct inoculation. Less commonly, infection occurs by inhalation or ingestion. What causes these organisms to become pathogenic is not known, although immunosuppression of the host plays a role in the ability of many of these organisms to produce infection.

Primary infection due to Mycobacteria tuberculosis and Non-tuberculous mycobacteria may occur in immunocompetent individuals, usually with resolution of infection but immunosuppression facilitates spread or dissemination of disease and may be what allows many Non-tuberculous organisms to become pathogenic.

Case Presentation
Case 1
Male Age 20 yrs
Came to Ortho OPD with:
- Swelling and pain in left gluteal region since 6 to 8 months.
- Pain while walking
- H/O injection at the site of swelling.

O/E (Locally) : Oedematous swelling in left gluteal region; Diffuse; No sign of inflammation; Tenderness on pressure.
G/E : Afebrile; Lean thin built; BP 130/80 mmHg; Pulse 80/min; RR 18/min.
- Systemic Examination RS
  CVS NAD
  GIT
  CNS
- Impression ? Antibioma
- Bursitis
- Investigation H/O Aspiration done NO significant pathology reported.

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CBC HB - 11.4, WBC - 9,800, N - 60, E - 2, L - 38
ESR - 48 mm/1hr
FBS - 80.8 mg%
HIV - Non-reactive
HBsAg - Negative
TBlgG - 245 units (NR = upto 225 units)
X-ray - Chest NAD
- Incision and drainage under GA
- Frank pus caseous material mixed with blood collected under asepsis.
- Chronic villous hyperplasia and inflammatory cells with huge capsule 6" x 4" extending around left hip joint capsule excised in toto.
- Histopathology : - Gross capsule cut open showing fibrinous exudative tags covered with necrotic yellowish material.
- Microscopically H and E stained section reveals proliferative fibroelastic connective tissue with infiltrating inflammatory cells viz. Lymphocytes, plasma cells, epitheloid cells, occasional multinucleated giant cells seen.
- Smear prepared from caseous material stained by modified ZNCF staining revealed AFB.

Case 2
Female Age - 14 yrs
Came to Ortho OPD with:
- Left gluteal abscess since 3 months. With sinus formation and oozing of cheesy material.
- H/O injection at the site of swelling 6 months back for fever (twice drained elsewhere).
- O/E (Locally) : Cystic swelling measuring 2 x 3 x 3 cms. With sinus discharge. Length of sinus measuring 6 cms. depth. No sign of inflammation; Tenderness on pressure.
- G/E : Afebrile; Average built; Pallor + Brittle nails; BP 100/70 mmHg; Pulse 78/min.; R 10/min.
- Systemic Examination RS
  CVS NAD
  GIT
  CNS
No Lymphoadenopathy
- Impression? Tuberculous sinus with abscess. Advice excision drainage.
- Investigation

CBC - Hb 10, WBC - 14,800, N - 40, E - 0, L - 60 (reactive)
ESR - 80 mm/1 hr
HIV - Non-reactive
HBsAg - Negative
TBlgG - 195 units (NR = upto 225 units)
X-ray - Chest - Healed lesion at right mid zone.
X-ray hip/spine - Normal
- Incision and drainage under GA
- Histopathology : Reveals non-specific inflammatory changes.
- Smear prepared from tissue shows AFB positive. (Modified Method)

Case 3
Female Age 70 yrs
Came to Shri Mumbadevi Homoeopathic Hospital Ortho OPD with:
- Left gluteal abscess since 8 months.
- Drained by surgeon.
- Started broad spectrum antibiotics.
- Non-healing
- Close irrigation of wound washing
- No improvement in healing.
- O/E injection at the site of swelling one year back.
- O/E (Locally) : Non-healing wound; unhealthy vascular oedematous margin with minimal induration measuring 3 x 2 x 2 cms.
- G/E : Afebrile; Stocky built; BP 140/100 mm Hg; Pulse 100/min.; RR 22/min.
- Systemic Examination RS
  CVS NAD
  GIT
  CNS
- Investigation
CBC Hb - 12.5, WBC - 12,800, N - 50, E - 0, L - 50
ESR - 100 mm/1hr
HIV - Non-reactive
HBsAg - Negative
TBlgG - 265 units (NR = upto 225 units)
X-ray chest - NAD
X-ray sacroiliac joints - Reveals lytic area at
sacroiliac joints showing changes of osteomyelitis at sacrum.

- Biopsy - Reveals characterised epitheloid granuloma with multinucleated giant cells.

Smear from the tissue revealed AFB on staining with modified ZNCF staining.

**Discussion**

Tuberculosis has also been described following subcutaneous or intra-muscular injection. Either the syringe, needle or fluid to be injected has been contaminated or the medical attendant has exhaled tubercle bacilli into the patient’s skin which are then introduced by the injection. A primary syringe transmitted infection of a muscle should be distinguished from secondary infection of a muscular haematoma with tuberculosis elsewhere in the body. As later cases often occur due to regular obligate pathogenic mycobacteria, while the former may be due to other mycobacteria which are facultative human pathogens.

There is a report of 102 children developing primary tuberculosis at the site of typhoid and para typhoid A + B (TAB) vaccination transmitted by a school vaccinator who was found to have active tuberculosis. Primary cutaneous tuberculosis has followed venepuncture, it may be difficult to differentiate primary tuberculosis of the skin from secondary. Perhaps in years to come the form of cutaneous primary complex may be commoner than pulmonary primary complex. Organisms probably disseminated during the course of primary pulmonary infection with scattered inactive tubercle bacilli.

Mycobacterium scrofulaceum and fortuitum are common pathogens distributed in nature are found in water and soil. Most cutaneous regions due to these have occurred post operatively after mammoplasty, catheter placement, and trauma in immunocompromised individual. The incubation

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Index : WBC Count Normal - 4,000 to 11,000/cu. mm; TB IgG (ELISA) Normal - 225 units; ESR Normal - Male 0 to 15 mm at the end of one hr; Female 0 to 20 mm at the end of one hr. (Westergren Method)

HIV (Immunocomb) HBsAg (Monozyme Hepstick Chromatographic technique, specificity 100%, sensitivity 0.5 ng/ml)
period for infection on an average is about 4 weeks to 6 weeks.\textsuperscript{6}

Histologically the hallmark of tuberculosis is well defined focus of epitheloid cells formed by an infiltration of other mononuclear cells frequently, however one does not find the typical tubercle but only epitheloid cells intertwined within an inflammatory infiltrate with or without necrosis. This variation is called “Tuberculoid infiltration”.\textsuperscript{7} There is significance of cellular immunity contributing to whether the predominant histologic pattern shows well defined tubercle with or without tuberculous infiltration.

Non-tuberculous mycobacterium show a histologic picture variable as the clinical finding. Early lesion often shows a non-specific inflammatory infiltrate of neutrophil, monocytes and macrophages. Later after several months a few epitheloid cell granuloma and multinucleated giant cells appear.\textsuperscript{8,9}

After 6 months or more a typical tuberculoid infiltrate usually occur with or without caseous necrosis. The presence or absence of Acid fast bacilli on histopathology is dependent on the tissue reaction.

However, whatever may be the histological type of picture or the aetiology they have to be considered as mycobacterial tubercle infection and treated accordingly. The importance of such abscess developing in the frequency lately should be indexed to avoid delay in diagnosis and treatment.

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**References**