TUBERCULAR
LYMPHADENITIS
INTRODUCTION

Also known as

- Scrofula
- Full neck sow
- King’s evil
INTRODUCTION

- Most common form of extra pulmonary TB
- Most common site - cervical lymph nodes
- Causative organisms
  - *Mycobacterium tuberculosis*
  - *M.bovis*
  - *M.africanum*
- NTM Lymphadenitis: Non tubercular Mycobacteria (*M.kansasii, M.scrofulaceum, M.avium-intracellulare*)
ANATOMY

Lymph node

- Oval/bean shaped
- Varying size: pinhead–lima bean
- Before lymph is returned to the blood stream, it passes through at least one lymph node
Distributed throughout the body along the lymphatic vessels

Two types of lymph vessels:
- Afferent
- Efferent

Snell S. Richard; Clinical anatomy for medical students, 1999;6:22
Functions

1. Filtering the lymph
2. Phagocytosis
3. Formation of Antibodies & Immunological defense
Lymphatic vessels:
- Return lymph to blood stream via:
  1. Right lymphatic duct
  2. Thoracic duct

Snell S. Richard; Clinical anatomy for medical students, 1999;6:22
Lymph Nodes Involved

1. Cervical
2. Axillary
3. Mediasternal
4. Inguinal

Axillary, mediasternal, inguinal node involvement in 14 - 30%
Anatomy of Cervical Lymph Nodes

Three main groups:

1. Upper horizontal chain of nodes
2. Lateral cervical nodes
3. Anterior cervical nodes
Anatomy of Cervical Lymph Nodes

Classification

- Upper horizontal chain of nodes:
  - 1. Submental
  - 2. Submandibular
  - 3. Parotid
  - 4. Postauricular
  - 5. Occipital

Dhingra P.L.; Diseases of EAR, NOSE and THROAT, 2004;3:447,448
Lateral cervical nodes

They include nodes, superficial and deep to sternocleidomastoid muscle and in the posterior triangle

a. Superficial external jugular group

b. Deep group:
   - Internal jugular chain (upper middle and lower groups)
   - Spinal accessory chain
   - Transverse cervical chain

Dhingra P.L.; Diseases of EAR, NOSE and THROAT, 2004;3:447,448
Anterior cervical nodes

a. Anterior jugular chain
b. Juxtavisceral chain
   1. Prelaryngeal
   2. Pretracheal
   3. Paratracheal

Dhingra P.L.; Diseases of EAR, NOSE and THROAT, 2004;3:447,448
Classification of Neck Nodes According to Levels

**Level I**  Submental (IA)
Submandibular (IB)

**Level II**  Upper jugular

**Level III**  Middle jugular

**Level IV**  Lower jugular

**Level V**  Post. Triangle grp

**Level VI**  Prelaryngeal
Pretracheal
Paratracheal

**Level VII**  Nodes of upper mediasternum

*Dhingra P.L.; Diseases of EAR, NOSE and THROAT, 2004;3:450*
Axillary Lymph nodes

1. Apical group
2. Anterior axillary
3. Central axillary
4. Lateral axillary
5. Posterior axillary

Chaurasia B. HUMAN ANATOMY. 1995;1:34
Inguinal Lymph nodes

1. Superficial inguinal group
2. Deep inguinal group
Inguinal Lymph nodes

- Primary inguinal node involvement very rare
- Usually associated with cutaneous TB, scrofuloderma or lupus vulgaris
- Common in Igbos ethnic group in Nigeria
- Male preponderance
Among the cervical group most commonly involved are in:

- Posterior triangle (spinal accessory group, transverse cervical chains)
- f/b Upper deep cervical
- f/b Submandibular nodes
- least affected – parotid, submental, lower deep cervical

EPIDEMIOLOGY

TUBERCULAR LYMPHADENITIS

- Age - common in 2\textsuperscript{nd} to 3\textsuperscript{rd} decade of life
- Sex - more common in females
- Race – Asians, African Americans, Hispanics
- Geographical variation - developing and underdeveloped countries
- Changing trends – south east England decline in TB lymphadenitis
- High frequency of disease in population from endemic areas of TB
EPIDEMIOLOGY

NON TUBERCULAR LYMPHADENITIS

- Age - more in children
- Sex - M = F
- Geographical variation - more in developed countries
EPIDEMIOLOGY

Tubercular lymphadenitis and HIV

- Infection with HIV a/w increase frequency of mycobacterial infection
- LN involvement particularly common in HIV pts
- Due to:
  1. Primary HIV induced pathology
  2. Associated diseases—TB LN, LAP d/t NTM, kaposi sarcoma, lymphoma
Tubercular lymphadenitis and HIV

- Cervical nodes most affected followed by axillary and inguinal nodes
- Multifocal lymphadenopathy very common
- Systemic symptoms very common
Study of TB LN in Northern Germany

- 60 pts with TB LN
- 30% (n=18) natives
- 70% (n=42) immigrants
  - Afghanistan (n=13)
  - India (n=9)
  - Pakistan (n=5)

Chest 2002;121:1179
Result:
- Cervical (63.3%)
- Mediasternal (26.7%)
- Axillary (8.3%)
- Inguinal (1.7%)

Chest 2002;121:1179
PATHOGENESIS

Local manifestation of a systemic disease

*M. tuberculosis* enters via respiratory tract

Lymphohematogenous dissemination

Hilar and mediastinal nodes

Via lymphatics to cervical lymph nodes
Peripheral adenitis may occur at time of:

- Initial infection
- Reinfection
- Reactivation
- Tonsils—important portal of entry → to the nearest cervical node
PATHOGENESIS

Host factors affecting clinical presentation:

1. Age
2. Sex
3. Race
4. Immunocompetence
PATHOGENESIS

Initially node is discrete and firm

Periadenitis resulting in matting & fixation

LN coalesce & softening d/t abscess formation
Perforate deep fascia forms collar stud abscess

Skin become indurated

Sinus

Healing (calcification & scarring)
PATHOGENESIS

Non tubercular lymphadenitis

Localized infection

Route of entry

- Oropharyngeal mucosa
- Conjunctiva
- Tonsils
- Gingiva
- Salivary glands
Non tubercular lymphadenitis

- Most common site – upper cervical nodes, salivary glands, surrounding nodes
- Lymph node enlargement may appear rapidly
All the best..