PATHOGENESIS OF LEPROMY
Pathogenesis:

M. Leprae enters transient bacillemia

Schwann cells, cooler places (Cutaneous nerves & Peripheral nerves trunks of limbs and face)

Strong immunological response

Weak immunological response

Nerves only: Pure Neural Leprosy

Escape to skin: Skin lesions appear

Lesions may heal spontaneously

M. Leprae multiply in Schwann cells or

Engulfed Histiocytes – wandering Macrophages

Affect other organs in the body
Pathogenesis contd

M. Leprae

Nerves
- Cutaneous nerves

Periph. Nerve Trunk

Skin

Other organs
- In MB leprosy

Loss of
- Sensation
- Secretions of Cutan. glands
- Vasomotor function
- Hair follicles

Sensory loss
- Weak/
- Paralysed Muscles
- Loss of sweating / hairs

Macule
- Papule
- Nodule
- Infiltration

Face
- Eyes
- Testes
- Kidney
- Bone
PRESENTATION OF LEPROSY
# Pathogenesis: Skin Lesions

### Leprosy Lesions

- One/ Few/ Many
- Small/ Large
- Hypo-pigmented / reddish/ pale / coppery
- Ill defined / well defined margins
- Dry/ wrinkled / granular to shiny soft succulent
- Sweating +/-
- Hairs – sparse/ fragile / absent
- Macule/ Papule/ nodular

### Exclude Leprosy

- Present since birth
- Black / dark red / De-pigmented
- Itches
- Appears disappears suddenly
- Painful
- Scaly
- Shows any seasonal variation
Skin lesions:
Skin lesions
Nerve involvement

Stage I
- Thickening of nerve trunk
- Pain & tingling along the nerve trunk
- Tenderness along the course of nerve trunk
- No evidence of loss of nerve function

Stage II
- Incomplete / complete paralysis of recent origin
- Loss of sweating
- Loss of sensibility
- Muscle weakness/ Paralysis

Stage III
- Complete Nerve Paralysis for 1 year/ more
- Recovery of Nerve function not possible
Commonly affected Nerves

- Facial nerve
- Median nerve
- Radial nerve
- Ulnar nerve
- Common peroneal nerve
- Posterior tibial nerve
Enlarged/ tender nerves with / without nerve function impairment

- Dorsal cut.
- Br of ulnar nerve
- Greater Auricular nerve
- Ulnar nerve
Other Manifestations of the disease: Eye

- Thinning of eyebrows
- Entropion
- Trichiasis
- Ciliary madarosis
- Scleritis
- Episcleritis
- Dacrocystitis
- Superficial punctate keratitis
- Interstitial keratitis
- Acute iridocyclitis
- Chronic iritis
- Iris atrophy
- Cataract
- Glaucoma
- Lagophthalmos
- LOWER eyelid
- Exposure Keratitis
- Impairment of vision
### Other Manifestations of the disease:

<table>
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<th>Anosmia</th>
<th>Leonine facies</th>
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<tr>
<td>Chronic blockage of nose</td>
<td>Bone cyst</td>
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<td>Crust formation</td>
<td>Medullary cavities</td>
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<td>Blood stained discharge</td>
<td>Periosteum, Charcot jts</td>
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<td>Ulcers may appear on nasal septum</td>
<td>Orchitis, Gynaecomastia</td>
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<td>Perforation of nasal septum</td>
<td>Loosening of upper central incisors</td>
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<td>Saddle nose deformity</td>
<td>Reticulo-endothelial Sys</td>
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<td>Hoarse cough &amp; husky voice</td>
<td>Glomerulonephritis</td>
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<tr>
<td>Dry, lusterless, shrunken narrowed and longitudinally ridged nails</td>
<td>Pyelonephritis</td>
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<td>Renal amyloidosis</td>
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</table>
Suspect Leprosy:

- Pale or reddish patch on the skin
- Shiny thick skin of face
- Swelling / nodules in the face and earlobes
- Reduced / loss of sensation in the skin patch
- Numbness or tingling of hands or feet
- Painful and tender / palpable nerves (esp. near elbow, wrist, knee, ankle)
- Weakness of hands, eyelids and feet
- Painless wounds or burns on the hands and feet
- Visible deformities of hands feet & eyes (claw hands and feet)
Suspect Leprosy: On Complaints

- Chronic blockage of nose due to Infiltration and crust formation
- Things tend to fall/slip out of the hand
- Things feel different while holding in the hand
- Hands or feet feel weak, slimmer with shiny skin, loss of hair
- Loss of sweating in an area
- Inability to retain chappal (footwear without back strap)

- Big toe coming in way while walking
- Recent Impairment of vision
- Red painful eye
- Recent/worsening of existing Lagophthalmos (Inability to close eye/s)
- Trichiasis
- Epiphora
- Epistaxis
- Hoarseness of voice
Leprosy during pregnancy and puerperium

Depression of Cell mediated immunity (CMI)

• Sub-clinical disease may become overt
• Established disease may worsens
• Deterioration of nerve function

Regaining of CMI - First six months of puerperium

• Increased incidence of lepra reaction

New born

• Weigh less than baby of healthy mothers
• High risk of getting infected with leprosy
Leprosy during HIV infection

HIV:

• No positive correlation for development of Leprosy

HIV with concurrent Leprosy:

• Higher incidence and severity of Lepra reactions
• Require higher doses of steroids.

Highly Active Anti Retroviral Therapy (HAART)

• May develop leprosy as such
• May present as a Lepra Reaction Type 1.