

PATHOGENESIS OF LEPROSY

Pathogenesis:

M. Leprae

Enters

Transient Bacilleamia

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

Strong Immunological Response

Weak immunological Response

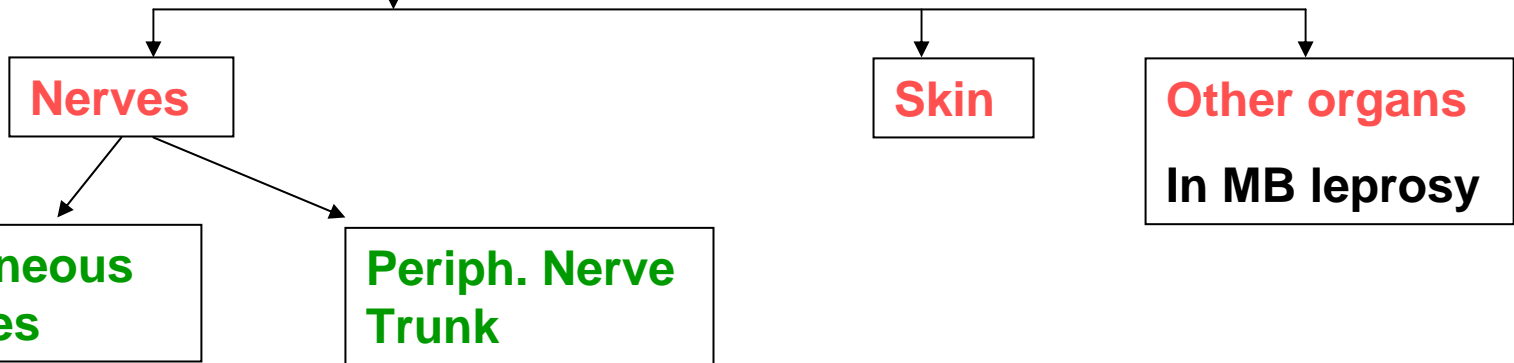
Nerves only: Pure Neural Leprosy
Escape to skin: Skin lesions appear
Lesions may heal spontaneously

M. Leprae multiply in Schwann cells or
Engulfed Histiocytes – wandering Macrophages
Affect other organs in the body



Pathogenesis contd

M. Leprae



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

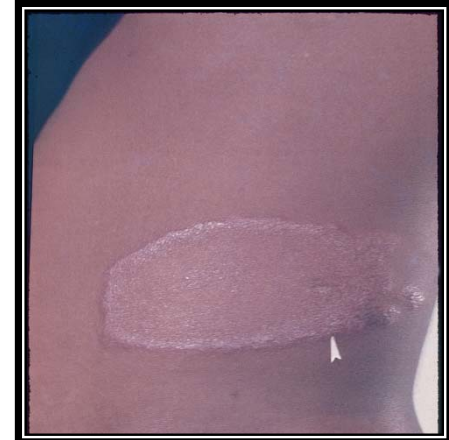
- **One/ Few/ Many**
- **Small/ Large**
- **Hypo- pigmented / reddish/ pale / coppery**
- **Ill defined / well defined margins**
- **Dry/ wrinkled / granular to shiny soft succulent**
- **Sweating +/-**
- **Hairs – sparse/ fragile / absent**
- **Macule/ Papule/ nodular**

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

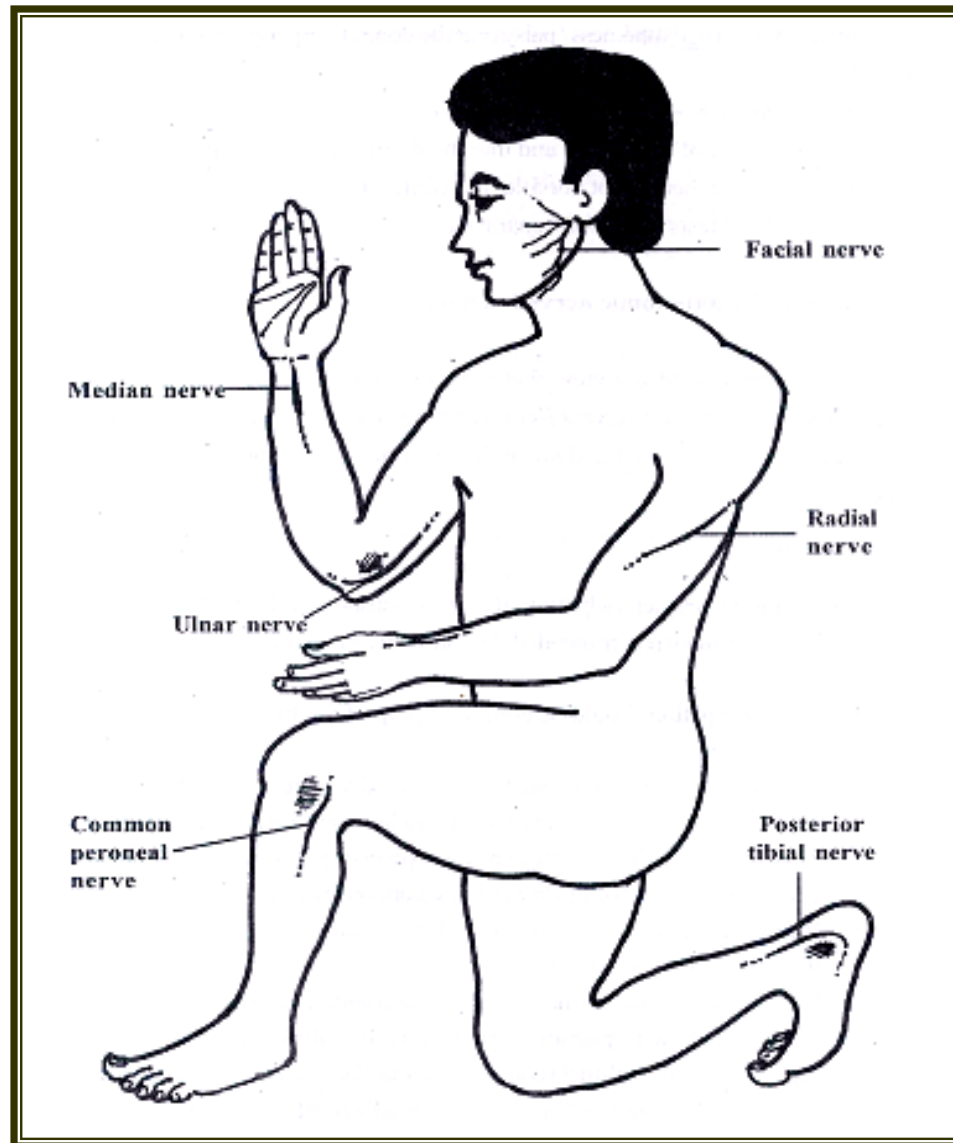
- Incomplete / complete paralysis of recent origin
- Loss of sweating
- Loss of sensibility
- Muscle weakness/ Paralysis

Stage III

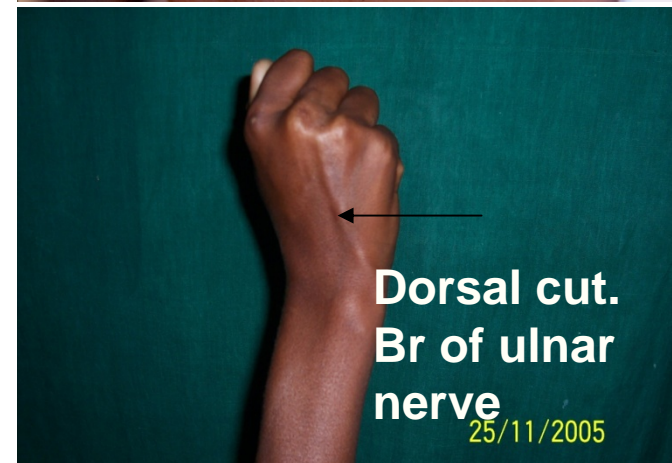
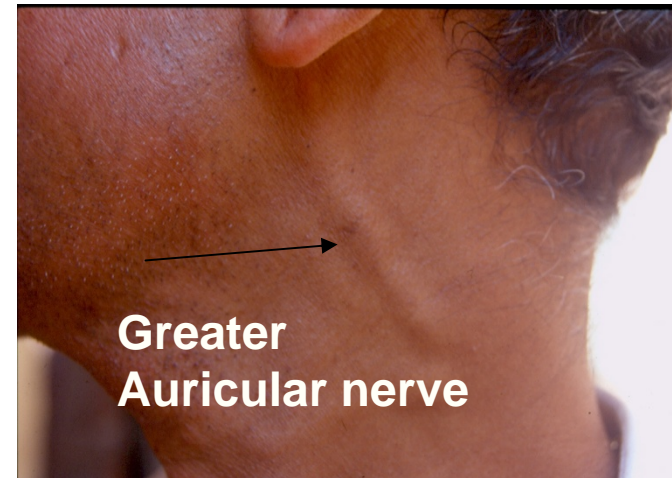
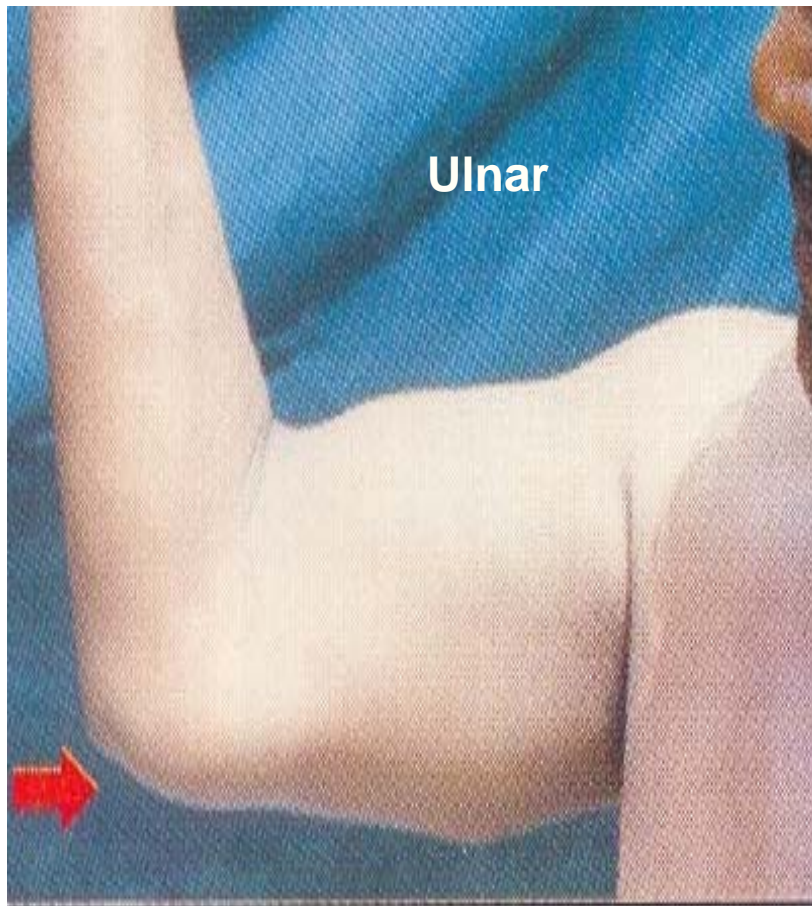
- Complete Nerve Paralysis for 1 year/ more
- Recovery of Nerve function not possible



Commonly affected Nerves



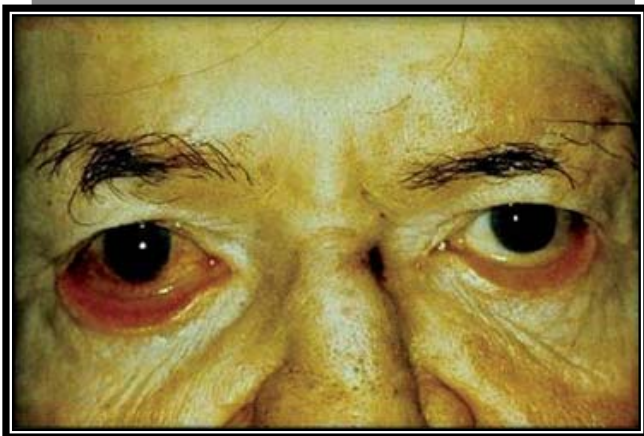
Enlarged/ tender nerves with / with out nerve function impairment



Disability & Deformities



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:

- Anosmia
- Chronic blockage of nose
- Crust formation
- Blood stained discharge
- Ulcers may appear on nasal
- Perforation of nasal septum
- Saddle nose deformity
- Hoarse cough & husky voice
- Dry, lusterless, shrunken narrowed and longitudinally ridged nails

- Leonine facies
- Bone cyst
- Medullary cavities
- Periosteum, Charcot jts
- Orchitis, Gynaecomastia
- Loosening of upper central incisors
- Reticulo-endothelial Sys
- Glomerulonephritis
- Pyelonephritis .
- Renal amyloidosis

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 (foot wear 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.**

