SKIN DISORDERS IN CHILDREN
DEFINITIONS

**Rash** is defined as the totality of skin lesion

**Lesion** is defined as any localised/ isolated skin pathology.

Lesions may be primary, secondary or special forms
PRIMARY SKIN LESIONS

• Primary lesions are physical changes in the skin considered to be caused directly by the disease process. Types of primary lesions are rarely specific to a single disease entity.
PRIMARY LESIONS MAY BE

- Macule
- Papule
- Patches
- Plaque
- Nodule
- Tumors
- Vesicles
- Bullae
- Pustule
- Petechial
- Purpura
MACULE

• A macule is a circumscribed alteration in the color of the skin. It is flat. If you were to close your eyes and run your fingers over the surface of a purely macular lesion, you would not detect it.

• A macule greater than 1 cm may be referred to as a *patch*.
PAPULE

- Superficial, elevated, solid lesion, <0.5 cm in diameter
- Most of it is elevated above the skin surface
- Palpable
  - e.g.- dome shaped: keratoacanthoma
  - Flat topped: lichen planus
  - Umbilicated: molluscum contagiosum.
PLAQUE

• A plaque is a solid, raised, flat-topped lesion greater than 2 cm. in diameter. It is analogous to the geological formation, the plateau.

• Simply put, the horizontal diameter is more than the vertical diameter.

• e.g.- Psoriasis, Parapsoriasis, Mycosis Fungoides.
• A nodule is a raised solid lesion more than 0.5 cm. and may be in the epidermis, dermis, or subcutaneous tissue.

e.g. Erythema nodosum, Rheumatoid nodules, Sarcoidosis
TUMOR

- A tumor is a solid mass of proliferation of a particular tissue.
- Normal or pathological material
- Inflammatory or non inflammatory
- Benign or malignant.
- Please bear in mind this definition does not mean that the lesion is a neoplasm.
VESICLE & BULLA

- Vesicle (<0.5 cm) or a bulla (>0.5 cm) is a circumscribed, elevated, superficial cavity containing clear fluid.

- Roof of a vesicle/bulla is so thin that it is transparent, and the serum or blood in the cavity can be seen.

- e.g. Herpes simplex, Herpes Zoster, Pemphigus Vulgaris, SJS/TEN
• Circumscribed, superficial cavity of the skin that contains a purulent exudate which may be white, yellow, greenish-yellow, or hemorrhagic.

• They are most commonly infected (as in folliculitis) but may be sterile (as in pustular psoriasis).
PETECHIAE

• Petechiae are circumscribed deposits of blood or blood pigments in the skin or mucosal surface.

• They are of 1-2 mm size and are associated with thrombocytopenia, platelet dysfunction, or locally increased intravascular pressure.
PURPURA & ECCHYMOSIS

• Purpura – slightly larger (> 3 mm) hemorrhages; associated with many of the same disorders that cause petechiae or secondary to trauma, vasculitis, or increased vascular fragility

• Ecchymoses – larger (> 1 to 2 cm) subcutaneous hematomas
ECCHYMOSIS AND HEMATOMA

Ecchymoses - larger (> 1 to 2 cm) subcutaneous hematomas; hemoglobin (red-blue color) is converted into bilirubin (blue-green color) and eventually into hemosiderin (gold-brown color)
SCLEROSIS

• This is a circumscribed or diffuse hardening or induration of the skin more easily felt than seen.

• e.g. Scleroderma
SECONDARY SKIN LESIONS

- Secondary lesions may evolve from primary lesions, or may be caused by external forces such as scratching, trauma, infection, or the healing process. The distinction between a primary and secondary lesion is not always clear.
SECONDARY SKIN LESIONS ARE

• Scales

• Crusts

• Excoriations

• Fissures

• Ulcers

• Scars

• Keloids

• Lichenification
SCALES

• Scales are flakes of stratum corneum
• They may be large (like membranes), tiny (like dust), pityriasisiform (bran like), adherent, or loose.
• A rash consisting of papules/nodules/plaques with scales is called a papulosquamous disorders.
CRUSTS

• Crusts develop when serum, blood, or purulent exudates dries on the skin surface. Crusts may be thin, delicate, and friable or thick and adherent.

• Crusts are yellow when formed from dried serum; green or yellow-green when formed from purulent exudates; brown, dark red, or black when formed from blood.
EXCORIATIONS

• Excoriations are break in the continuity of the skin caused by scratching or rubbing.
FISSURES

• A fissure is linear cleavage of skin with sharply defined walls which extends into the dermis.

• Ex: congenital syphilis, athlete’s foot.
ULCER

• Ulcers are irregularly sized and shaped excavations in the skin extending into the dermis or deeper. Examples: stasis ulcers of legs, tertiary syphilis.

• Ulcers always heal with scar formation.
**LICHENIFICATION**

- "Lichenification" refers to an area of the skin characterized by increased thickening of the skin, increase in the pigmentation, and exaggeration of normal skin lines.
- It is usually due to chronic rubbing or scratching of an lesion.
- e.g. : Atopic dermatitis or psoriasis lesions can be lichenified.
SPECIAL LESIONS

Some primary lesions, limited to a few skin diseases, can be called specialized lesions.

• Comedones or blackheads
• Target lesions
• Milia
• Telangectasia
• Burrows
• Sclerosis
• A comedone is a hair follicle infundibulum that is dilated and plugged by keratin and lipids.

• Usually seen in seborrheic areas.

• A comedone can be closed (blackhead) or open (whitehead).

• e.g. : Acne vulgaris, Nevus comedonicus
TARGET LESIONS

• Target-like, with at least three distinct zones
• Central dark zone sometimes is blistered
• Pale edematous zone
• Zone of erythema
• (e.g., erythema multiforme).
MILIA

- They are small superficial cysts with an epidermal lining.
- Occur on the face esp. periorbital region.
- Sometimes on blistered or damaged skin.
TELANGIECTASIA

• Telangiectasia are persistent dilatations of small capillaries in the superficial dermis that are visible as fine, bright, nonpulsatile red lines or net-like patterns on the skin.

• e.g. Rosacea, ataxia telangiectasia.
Shapes of lesions may be a clue for diagnosis

- Linear
- Annular or ring shaped
- Round or coin shaped
- Polycyclic
- Arcuate
- Figurate
LINEAR LESIONS

- Linear Contact Dermatitis
- Koebner Phenomenon
- Developmental Linear Lesions
- Linear Vascular or Lymphatic Lesions
- Linear Lesions of Childhood
- Linear lesions not otherwise specified.
LINEAR LESIONS (all ages)

- **Koebner Phenomenon**
  - Lichen planus
  - Eczema (active)
  - Psoriasis
  - Auto-inoculation: Verruca, Molluscum contagiosum, etc.

**Developmental Linear Lesions**
- Epidermal nevi
- Incontinentia pigmenti

**Vascular/ Lymphatic Lesions**
- Thrombophlebitis
- Sporotrichosis
- Coccidioidomycosis
ANNULAR & RING LESIONS

• Annular ring-shaped- implies that the edge of the lesion differs from the center, either by being raised, scaly, or differing in color (e.g., granuloma annulare, tinea corporis, erythema annulare centrifugum).

• Round/nummular/discoid /coin-shaped- usually a round to oval lesion with uniform morphology from the edges to the center (e.g., nummular eczema, plaque-type psoriasis, discoid lupus).
ANNULAR LESIONS

- Granuloma annulare
- Erythema annulare centrifugum
- Erythema annulare rheumatica
- Erythema chronicum migrans
- Erythema gyratum
- Erythema multiforme

Leprosy
Dermatophytosis - Tinea circinata
Psoriasis
Linear IgA Disease
Bullous Disease of Childhood
Lichen planus
Urticaria
POLYCYCLIC/ARCUATE

- **Polycyclic**: formed from coalescing circles, rings, or incomplete rings (e.g., urticaria, subacute cutaneous lupus erythematosus).

- **Arcuate**: arc-shaped; often a result of incomplete formation of an annular lesion (e.g., urticaria, subacute cutaneous lupus erythematosus).
FIGURATE ERYTHEMAS

- Erythema multiforme
- Erythema annulare centrifugum
- Erythema annulare rheumatica
- Erythema chronicum migrans
- Erythema marginatum
- Erythema gyratum repens
FEVER WITH RASH

• Acutely ill patients with fever with rash is a diagnostic challenge to physician.

• The distinctive appearance of lesion with the clinical syndrome may facilitate diagnosis.
CLASSIFICATION

1. Centrally distributed maculopapular rash
2. Peripheral eruptions
3. Confluent desquamative erythema
4. Vesciculobullous lesions
5. Urticarial eruptions
6. Nodular eruptions
7. Purpuric eruptions
8. Eruptions with ulcers/ eschars
<table>
<thead>
<tr>
<th>CENTRALLY DISTRIBUTED MACULOPAPULAR RASH</th>
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<tbody>
<tr>
<td>• Measles</td>
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<tr>
<td>• Rubella</td>
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<tr>
<td>• Erythema infectiosum</td>
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<tr>
<td>• Exanthem subitum</td>
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<td>• Primary HIV infection</td>
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<td>• IMN</td>
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<td>• SLE</td>
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<td>Epidemic typhus</td>
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<td>Endemic typhus</td>
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<td>Scrub typhus</td>
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<td>Rickettsial spotted fever</td>
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<td>Leptospirosis</td>
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<tr>
<td>Lyme disease</td>
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<td>Typhoid</td>
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PERIPHERAL ERUPTIONS

- Hand foot mouth disease
- Atypical measles
- Rocky mountain spotted fever
- Secondary syphilis
- Erythema multiforme
- Infective endocarditis
- Rat bite fever
CONFLUENT DESQUAMATIVE ERYTHEMA

• Scarlet fever
• Kawasaki disease
• Streptococcal toxic shock syndrome
• Staphylococcal toxic shock syndrome
• Staphylococcal scalded skin syndrome
• Exfoliative erythroderma syndrome
• Toxic epidermal necrolysis
VESCICULOBULLOUS LESIONS

- HFMD
- SSSS
- Varicella
- Disseminated herpes virus infection
- Rickettsial pox
- Ecthyma gangrenosum
URTICARIAL ERUPTIONS

• Urticarial vasculitis: It may be due to
  - serum sickness
  - drugs (penicillin, sulphur, salicylates, barbiturates)
  - connective tissue disease
  - idiopathic
NODULAR ERUPTIONS

• Dissiminated infections
• Erythema nodosum
• Sweet’s syndrome
• Bacillary angiomatosis
PURPURIC ERUPTIONS

- Acute meningococcemia
- Purpura fulminance
- Chronic meningococcemia
- Disseminated gonococcal infection
- Viral hemorrhagic fever
- Thrombotic thromocytopenic purpura
- Enteroviral infection
ERUPTIONS WITH ULCERS/ ESCHARS

- Scrub typhus
- Rickettsial spotted fever
- Rat bite fever
- Tuleraemia
- Anthrax
Thank You