Lecture 3

SKIN ASSESSMENT TECHNIQUES

Learning Objectives

- Obtain a focused dermatological history.
- Perform a systematic examination of the skin, hair, nails and mucous membranes.
- Identify and describe primary and secondary skin lesions.
- Assess morphology, color, shape, configuration and distribution.
- Perform selected bedside diagnostic procedures.
- Formulate a differential diagnosis and select appropriate investigations.

Principles of Dermatological Diagnosis

- Diagnosis integrates three components: history, clinical examination, and additional investigations when indicated.
- **History** establishes onset, progression, symptoms, exposures and treatment response.
- **Examination** evaluates morphology, distribution, color, texture and associated findings.
- **Investigations** should be selected to answer a specific diagnostic question.

1. Dermatological History

- Presenting complaint: site of onset, duration, progression, evolution and previous episodes.

- Associated symptoms: pruritus, pain, tenderness, burning, stinging and systemic symptoms when relevant.
- Relevant background: previous skin disease, current and recent medications, topical products, cosmetic procedures, occupational exposures, allergies and family history.
- Previous treatment: document medication, duration, response, adverse effects and adherence.

2. Systematic Skin Examination

- Inspect the affected area and examine other skin sites for associated lesions.
- Assess distribution and symmetry of the eruption.
- Examine hair and nails; inspect accessible mucous membranes when indicated.
- Palpate lesions where appropriate and assess lymph nodes or perform systemic examination when clinically relevant.
- Use adequate lighting, appropriate exposure, consent and privacy.

Primary Skin Lesions

- Macule: circumscribed color change without elevation or depression, conventionally 1 cm or less.
- Patch: a larger flat area of color change.
- Papule: a small, solid, elevated lesion, conventionally 1 cm or less.
- Plaque: an elevated lesion with a broad, plateau-like surface, usually larger than a papule.
- Vesicle: a small fluid-filled blister, conventionally 1 cm or less; bulla: a larger fluid-filled blister.
- Pustule: a circumscribed lesion containing purulent material.
- Other primary lesions include nodules, wheals and cysts.



Secondary Skin Lesions

- Scale: flakes or plates of accumulated stratum corneum.
- Crust: dried serum, blood or purulent material.
- Erosion: superficial loss of epidermis.
- Ulcer: loss of epidermis extending into the dermis or deeper tissue.
- Excoriation: traumatic superficial skin injury, often due to scratching.
- Fissure: linear crack in the skin.
- Lichenification: thickened skin with accentuated skin markings.
- Atrophy: thinning of the skin or its components.
- Scar: fibrous tissue replacing normal tissue after injury.



Describing Lesion Morphology

- Type: macule, papule, plaque, vesicle, pustule, nodule or another lesion.
- Size: measure in millimeters or centimeters.
- Shape: round, oval, annular, linear, targetoid or irregular.
- Border: well-defined or ill-defined.

- Surface: smooth, scaly, verrucous, crusted or eroded.
- Color: erythematous, brown, violaceous, hypopigmented or other.
- Consistency and depth: soft, firm, indurated, fluctuant, superficial or deep when assessable.

Configuration and Arrangement

- Annular: ring-shaped lesions, sometimes with central clearing.
- Grouped: several lesions clustered together, as may occur in herpes simplex.
- Linear: lesions arranged in a line, sometimes reflecting external contact or trauma.

Distribution of Skin Lesions

- Document whether lesions are localized or generalized, symmetrical or asymmetrical, unilateral or bilateral.
- Identify flexural, extensor, acral, truncal, photo-distributed, dermatomal, follicular or intertriginous patterns.

Assessment of Skin Color

- Erythema: redness associated with increased cutaneous blood flow or inflammation.
- Purpura: extravasated blood that does not blanch with pressure.
- Hyperpigmentation: increased visible pigmentation; hypopigmentation: reduced pigmentation.
- Depigmentation: loss of normal pigment, as in vitiligo.
- Cyanosis: bluish discoloration that may reflect systemic disease.
- Erythema may be less conspicuous in deeply pigmented skin; warmth, edema, texture and associated findings may be informative.



Palpation and Special Clinical Signs

- Assess temperature, tenderness, consistency, induration, thickness, mobility, fixation and fluctuation.
- Blanching: pressure-induced disappearance of vascular redness.
- Dermatographism: development of a wheal following stroking or scratching in susceptible patients.

Bedside Diagnostic Techniques

- Wood's lamp examination can assist assessment of selected pigmentary and infectious disorders.
- KOH microscopy helps identify fungal elements in skin, hair or nail specimens.
- Dermoscopy magnifies superficial structures to support diagnosis of selected skin and hair disorders.
- Skin scraping provides material for microscopy or other laboratory testing.
- Swab or culture may be indicated when microbial infection is suspected.



Dermoscopy

- Dermoscopy is a non-invasive technique using magnification and specialized illumination.
- Applications include pigmented lesions, selected inflammatory dermatoses, scabies assessment and hair/scalp evaluation (trichoscopy).
- Interpret findings alongside history and clinical morphology.

- Dermoscopy does not replace histopathology when biopsy is indicated.

Additional Investigations

- Microbiology: KOH preparation, fungal culture, bacterial culture or selected molecular tests.
- Histopathology: skin biopsy for routine histology.
- Direct immunofluorescence: selected suspected immunobullous or inflammatory disorders.
- Laboratory investigations: choose blood tests, autoantibodies or other tests according to the suspected diagnosis.
- Patch testing may be used for suspected allergic contact dermatitis.
- Investigations should answer a specific clinical question rather than be ordered indiscriminately.