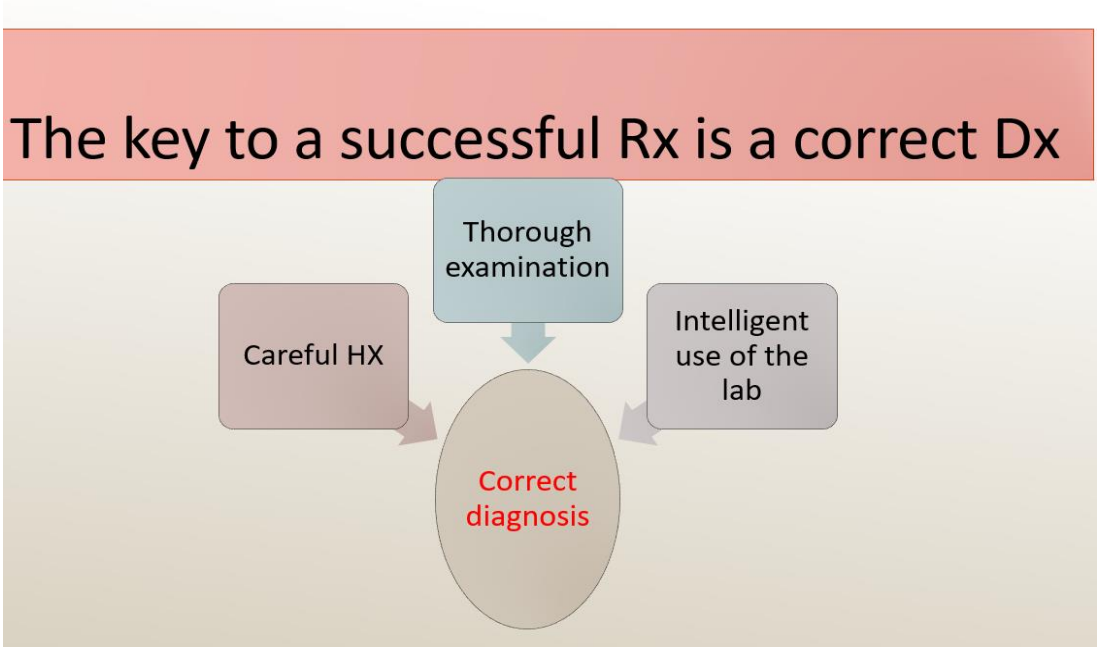
Learning objectives

By end of this lecture, the student should be able to:

- Identify the most common morphological presentations of skin lesions (primary & secondary lesions).
- Be able to fully describe any skin lesion based on:
  - Shape
  - Arrangement
  - Color
  - Distribution
  - Morphology

- Be familiar with the most important tools for investigations in dermatology



How to bring order to confusion:

- ✓ What component is mainly affected? (dermis, epidermis, subcutaneous fat, blood vessels)
- ✓ What is the primary change and what is secondary?
- ✓ Next assess the lesions by type, shape, arrangement, and distribution.
- ✓ Finally, how did the changes evolve over time?

Types of lesions

- Primary lesions
- Secondary lesions
- Special phenomena

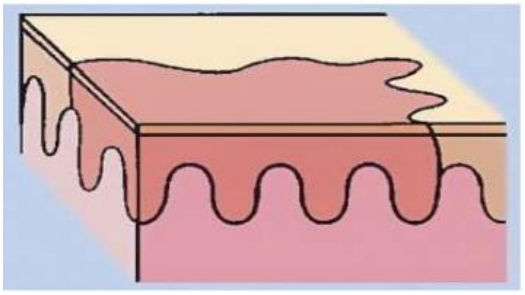
Primary skin lesions

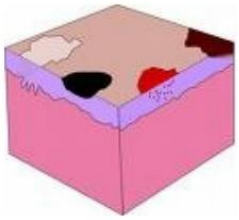
They are the basic lesions with which the skin disease starts

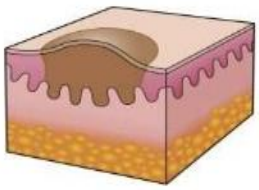
1-*Macule*: flat circumscribed skin discoloration less than 1 cm in diameter

A larger MACULE more than 1 cm in diameter is called A **PATCH**

They can be red, blue, white, brown







Formed by

1)hyperplasia of epidermis , dermis or both

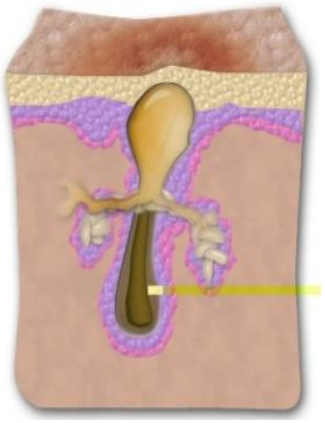
E.g : verruca vulgaris

2)Metabolic deposits or cellular infiltrates

E.g : xanthelasma

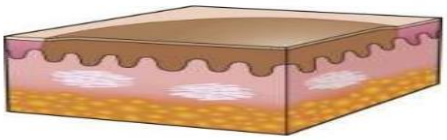
Papule

- A small, solid lesion, <0.5 cm in diameter, raised above the surface of surrounding skin & hence palpable.
- Papules may be of various colors.



Plaque

•Elevated well circumscribed more than 1 cm in diameter ,occupying relatively large surface area in comparison with its height above the skin surface



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Types

Scaly Plaque : Psoriasis , P.Rosea

- Lichenified plaque : Lichen Simplex Chronicus

- Erythematous plaque : Tuberculoid leprosy

4- Nodule : A larger & deeper lesion than a papule, e.g., erythema nodosum

Examples of nodule

Basal cell carcinoma

Hemangioma

Prurigo nodularis

neurofibromatosis

5- Blisters

A circumscribed elevation of the skin containing fluid, of 2 types:

A) vesicle: less than 0.5 cm. in diameter e.g. acute dermatitis.

B) Bulla: larger than 0.5 cm, e.g. pemphigoid .

Examples of bulla

Bullous pemphigoid

Fixed drug reaction

6- pustule: A visible accumulation of pus, as in folliculitis.

Acne

Pustular psoriasis

Folliculitis

Scabies

7- Wheal

- It is a transient swelling of skin disappearing within 24 hrs.
- It is formed due to sudden extravasation of fluid in the dermis.
- Eg: urticaria

Urticaria

dermographism

8- *Purpura*

Visible, blood filled lesions in the skin, they are either:

a) petechiae: pinhead sized macules of blood in the skin.

b) Ecchymosis: larger extravasations of blood into the skin, as in many bleeding disorders.

E.g. of petechiae & ecchymosis

9-

Abscess

- A localized collection of pus deep in dermis or subcutaneous tissue
- Due to deep seated location pus may not be visible on skin surface but would show sign of inflammation.

10

Cyst

- It is a spherical or oval sac or an encapsulated cavity containing fluid or semi solid material.
- It is lined with true epithelium.
- Eg:- mucous retention cyst

11- Telangectasia : Permanent visible dilation of superficial blood vessels in the skin as in rosacea

12- Comedo: A plug of keratin & sebum wedged in a dilated pilo-sebaceous follicle, there are 2 types; open (black heads) & closed (white heads), as in acne vulgaris.

Secondary skin lesions

These evolve from primary lesions during the natural progress of the disease, or may be created by events such as scratching or infection.

They include:

2) *Crust*: A collection of dried serum & cellular debris as in impetigo.

3-*Erosion*:

A focal loss of the epidermis, which does not penetrate deeper than the dermo- epidermal junction, & so heals ***without*** scarring as in pemphigus.

4-*Ulcer*

5-*fissure*:

A linear slit in the skin with nearly vertical walls as in finger tip eczema

6-*Sinus:*

A cavity or channel that permits the escape of pus or fluid as in pilo-nidal sinus.

7-*Excoriation*

An ulcer or erosion, often linear caused by scratching, as in neurotic excoriations

8-*Atrophy*:

A depression in the skin resulting from thinning of the epidermis or dermis e.g. as a side effect of topical or intra-lesional steroids.

9-*Scar*:

A result of healing where normal structures are permanently replaced by fibrous tissue, e.g. burn.

10-*Lichenification*

An area of thickened epidermis induced by scratching, the skin looks hyper pigmented ,thickened, with accentuation of skin markings, e.g. lichen simplex chronicus.

Special Phenomena in Dermatology

Koebner's phenomenon

The tendency of the rash to appear at sites of trauma, as in

- Psoriasis
- lichen planus
- plane warts
- acute eczema
- vitiligo.

Nikolsky's sign

Sheet-like separation of the epidermis by gentle traction as in ***pemphigus.***

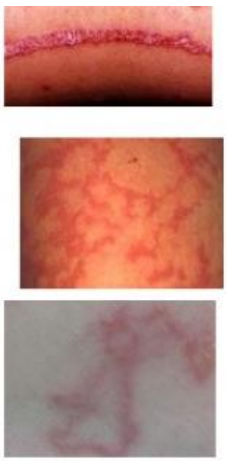
Auspitz's sign:

Appearance of pin point dots of blood when scales are forcibly removed in a psoriatic plaque.

Configuration of lesions

- Annular- T. corporis, granuloma annulare.
- Round/ discoid- nummular eczema, discoid lupus.
- Polycyclic- urticaria, SCLE.
- Arcuate- urticaria.

- Linear- scabies burrow, lichen nitidus. Kobners phenomenon.
- Reticular- livedo reticularis.
- Serpiginous- cutaneous larva migrans.
- Targetoid lesions- with 3 distinct zones. Erythema multiforme.



ARRANGEMENT OF LESIONS

- Grouped/ herpetiform- HSV-1
- Scattered

OTHER AIDS TO DIAGNOSIS

1- DIASCOPY:

To differentiate erythema from telangectasia; press a slide firmly on the skin lesion, if a red lesion blanches then it is due to vasodilation(blood inside the blood vessels), if not; it is purpura (blood outside the vessels).

In TB of the skin diascopy reveals an appearance called apple- jelly nodules.

2- Dermoscopy

The lesion is covered by mineral oil or water, & observed by a hand held dermoscope, the fluid eliminates surface reflection & make the epidermis translucent , used especially for pigmented lesions as malignant melanoma ,also to identify scabies mites in their burrows.

3- Wood's lamp

A long-wave ultra violet light (360nm), a high pressure mercury lamp with a nickel-oxide & silica filter, the patient should be put in a darkened room, & a special fluorescence occurs in certain conditions which aids in their diagnosis:

Uses of WOOD'S lamp

1-ring worm of scalp: greenish fluorescence.

b) Erythrasma: coral red fluorescence in the flexures.

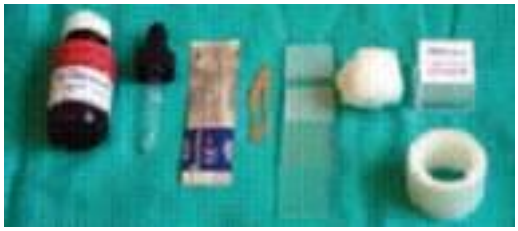
c) Porphyria : pinkish fluorescence of the teeth & urine of patients with porphyria cutanea tarda

d) Pityriasis versicolor: Yellowish fluorescence.

e) Pigmentary disorders: Both in hypo & hyperpigmentation there is increased contrast, as in vitiligo where areas of subtle depigmentation are more easily seen.

4- MYCOLOGY SAMPLES

For fungal infection of skin, hair & nail

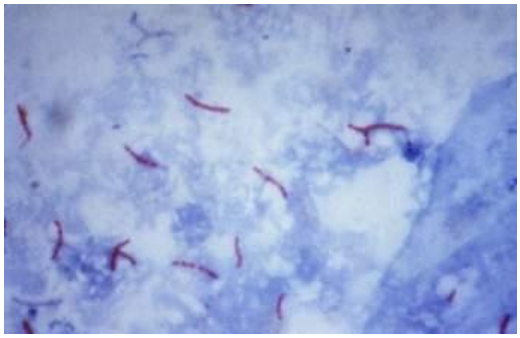


5- LAB. INVESTIGATIONS :

As hematological, biochemical, & serological Tests, together with Gram's stain & culture for bacteria

6- CYTOLOGY (Tzanck's smear):

Useful in blistering diseases, viral infections as herpes simplex & zoster, & in pemphigus vulgaris



7- PATCH TESTS:

To document the presence of allergic contact sensitization (delayed hypersensitivity reaction) & to identify the causative agents, in 24-48 hours eczematous reaction.

8- PRICK TESTS:

Used to detect type I (immediate) hypersensitivity reaction to various antigens as pollen, house dust mite, or dander, in10 minutes. ⇒ Wheal & flare

9- HISTOLOGY & IMMUNOFLUORESCNCE:

Ordinary H & E staining

In tumor cases, immunohistochemistry

Direct & indirect immunofluorescence in auto immune diseases