

Dermatology for Nurses

By

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Some Fundamental Facts

Knowledge of fundamental facts about a subject essentially precedes finer details; this is equally true of Dermatology. For the sake of convenience, I intend to discuss the subject with you under four headings of Anatomy, Physiology, Clinical Features and Case Examination.

Anatomy.

The skin is an important living organ of the body which it externally covers. At the body openings like the mouth, nose, eyes, anus and external genitalia, it joins the mucous membranes. It is composed of three layers—Epidermis, Dermis and Subcutaneous tissue. The Epidermis is the external nonvascular protective covering composed of stratified squamous epithelium; the superficial part of which is Keratinised and is constantly shed. In between the basal cells of the epidermis, are interspersed pigment forming cells, Melanoblasts. The whole epidermis germinates from the basal layer; injury to the skin at the basal layer or underneath will produce scarring.

Dermis is composed of dense fibrous tissue with strands of elastic tissue. It contains the blood vessels, lymphatics, nerves, touch corpuscles, sebaceous and sweat glands and the hair follicles. The upper part of the dermis consists of finger-like processes—papillae,—which fit into the irregularities of the epidermis—inter-papillary processes. Sebaceous glands secrete sebum which is responsible for the lubrication of the integument. Sweat glands produce sweat; these

glands are larger in the axillae, genitalia and breast. Their secretion is odoriferous hence they are called cutaneous sex glands. Hair distribution on the body is controlled by male, female and pituitary hormones. Hair consists of a shaft, root and bulb. The latter is concave below and in its concavity is situated the vascular papilla providing nourishment to the hair. The hair root lies in an invagination of the epidermis called the hair follicle.

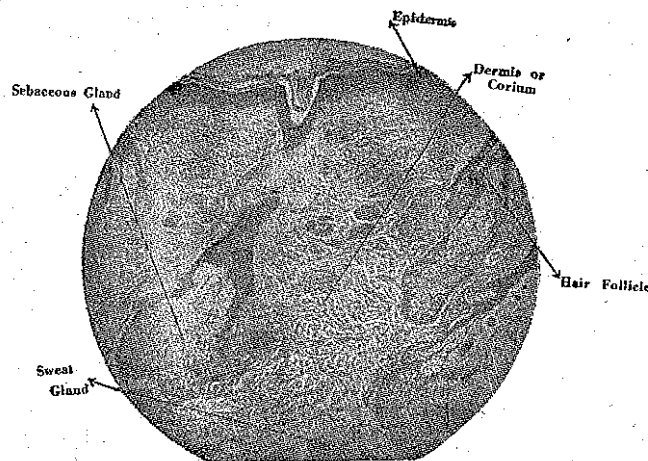


Fig. 1.

Microscopic Section of Skin.

Nails are an appendage of the skin and are composed of hard keratinised material. A nail is developed from the nail fold and lies on the nail bed.

Subcutaneous tissue is the fatty cushion-like support under the skin. To a great extent it is responsible for fat storage in the body, and giving contours to the figure.

Physiology.

The integument or skin has a variety of functions to perform like

any other organ of the body. It protects the underlying tissues and also protects itself by its integrity, acidic reaction, sweat and sebum secretion, horny layer of the epidermis and pigment. One is familiar with thickening of skin of the palms of hands in manual workers, and increased pigmentation on exposure to the sun; thus nature has been kind enough to provide the skin with all the necessary protective equipment. Interference with any of these reduces its vitality; thus predisposing the skin to disease processes. Integument is the largest sensory organ of the body; through it a human being appreciates the touch, pain and temperature sensations and learns how to deal with them, consciously and sub-consciously.

The skin regulates the heat of the body through constriction and dilation of blood vessels and sweating. It excretes water and waste products from the body in the form of sweat. It is the seat of manufacture of Vitamin 'D' from irradiation of ergosterol under the influence of light. Sweat, sebum and keratin form an acidic mantle containing useful enzymes, protecting it from ordinary bacteria present on the surface and invasion by organisms. In malnourished individuals, dry skins and diseased states, this protective barrier is disorganised thereby encouraging infections of the skin. The use of too much or too alkaline soap has the same disadvantage.

Any upset in the functions of the skin is reflected in its appearance. Integument acts as a mirror of the body. Every nurse should be well acquainted with the knowledge of reading the images in the body's mirror. Besides it is helpful in diagnosing such systemic conditions as dehydration, cyanosis, anaemia, pigmentary, endocrine and metabolic disorders.

Clinical Features of Cutaneous Diseases :

Cutaneous lesions are basically of two types :

1. Primary.

2. Secondary.

In case taking, primary lesions are the important ones. The whole diagnosis centres around them. The nurse, under the guidance of a clinician, must look for the primary lesions in the most recent eruption; an intelligent patient will be of great help to the nurse. With the passage of time, primary lesions either involute or transform, or become modified by super-added conditions into secondary lesions.

Various primary lesions are :

1. **Macules**—They are of two types :

- (a) Pigmentary.
- (b) Erythematous.

Macule is a small non-raised circumscribed lesion with the alteration of colour. When extensive it is called a patch or plaque of erythema or pigmentation, e.g., birthmark syphilitic macules, rashes of scarlet fever and measles.

2. **Papule** : It is a solid raised lesion of the size of a split pea or smaller e.g., lichen planus, warts etc.

3. **Vesicle** : It is a circumscribed swelling of the skin, containing serum or plasma. The size is smaller than a pea. Typical example is Eczema (Chambal). When the top of the vesicle gets rubbed off, a pit is left behind.

4. **Nodule** : Solid raised enlargement of skin bigger than a papule but smaller than the size of a hazel nut—e.g., infective granuloma like Oriental Sore Tuberculous skin, Rodent ulcer, Neurofibroma.

5. **Tumour** : is a solid raised enlargement of the skin bigger than a nodule e.g., Epithelioma (skin cancer).

6. **Bullae** are circumscribed swellings of the skin larger than vesicles. They contain serum or plasma e.g., Pemphigus.

7. **Wheal** is a circumscribed swell-

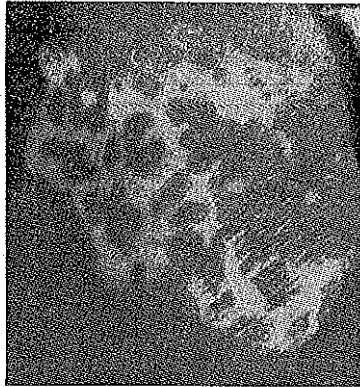


Fig. 2.
Example of depigmented Macules
—Case of Leucoderma—improving
with Meladinin.



Fig. 3.
Example of Vesicles
—Case of Herpes Zoster.

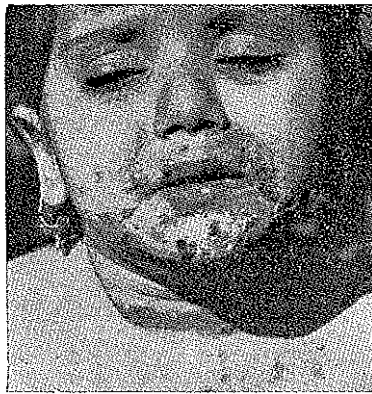


Fig. 4.
Example of Bulla
—Case of Bullous Impetigo.



Fig. 5.
Example of Vesicles and Scaling
—Case of Eczema treated with 1 p.c.
Silver Nitrate Paint.

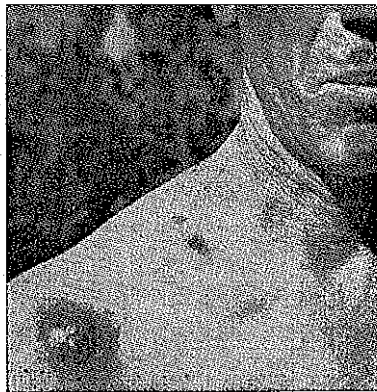


Fig. 6.
Example of Carbuncle.

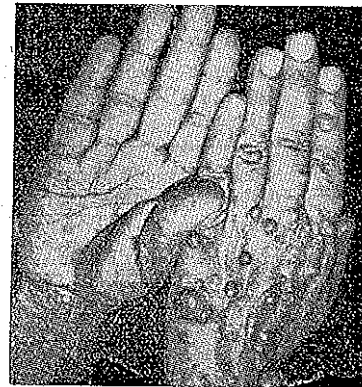


Fig. 7.
Example of Papules, Nodules and Tumour
—Case of Neurofibromatosis.

ing of the skin caused by redness and odema *e.g.*, urticaria, hives.

8. **Pustules** are swellings of the skin containing pus. If follicular they are termed folliculitis. When there is deeper destruction of hair follicle and hair root comes out as a core, it is termed furuncle or a boil. If the pus is localised in a nodule in the dermis, it is called an abscess. **Abscess** with multiple holes is termed a **Carbuncle**.

Secondary lesions.

1. **Scales or Squamæ** : They are dry exfoliations of the skin *e.g.* Psoriasis.

2. **Crusts or Scabs** : They represent dried masses of oozing and other products of inflammatory tissue, *e.g.* impetigo, eczema.

3. **Excoriations** : are superficial lesions characterised by removal of the epidermis as in abrasions or scratching.

4. **Fissures** are linear cracks in the surface of the skin, reaching down to the papillae *e.g.*, in chapping of hands or chronic eczema.

5. **Ulcers** are circumscribed lesions representing loss of epidermis and dermis. The clinician should study the base, edges and surrounding area of skin of ulcers.

6. **Scars** represent healed dermal lesions. They may become hypertrophic or keloidal.

7. **Stains** are local discolorations of skin from bruising, inflammation, or external application of medicaments like Tincture Iodine.

8. **Atrophy** represents wasting of skin. It shows itself by thinness, loss of elasticity and wrinkling. All disease processes of the corium leave behind atrophy or scar.

In certain skin diseases, primary and secondary lesions are combined with the result that a double name is given to the eruption as Erythematous Squamous (Erythema & Scaling); Erythrodermia (Erythema & thickening

of skin due to infiltration by cells in the dermis).

Case Examination :

Ordinarily it is very seldom that a nurse is required to examine a patient with a skin disease and to have to depend on her own judgment for diagnosis and treatment. In India, conditions, being what they are at the present juncture, there is a great shortage of doctors and considerably more of properly trained dermatologists. Nurses, especially so in the villages which contain 75% of the population, will be expected, or rather forced, to rely on their own resources in a great percentage of cases. Therefore, they should know how to proceed with an examination, separate the serious from the non-serious, infectious from the non-infectious, and ask for the specialist's help in difficult cases.

In case-taking, emphasis must be laid on duration of lesion, site of onset, manner of spread, itching or non-itching, treatment already tried and with what effect; and family and personal history of skin diseases and general health. Examination must include the whole of the integument from head to foot and also the mucous membranes of the mouth, anus and external genitalia (the latter only in special cases). Nature of lesions (primary or secondary) with distribution must be determined in the first instance. Temperature and pulse must be taken in every case. Last of all, a general systemic survey should be made.

It is important that a case is examined in natural light, as far as possible. In cases of suspected venereal disease and contagious diseases, gloves should be worn.

Precise examination and acute observation are essential for deduction and correct diagnosis. Gentle and tactful case taking wins the co-operation of the patient, and his faith which is half the battle in treating him.

(To be continued.)