PRINCIPLES AND PRACTICE OF DERMATOLOGY

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INTRODUCTION

Medical schools and textbooks teach us dermatology by subjects such as eczema and psoriasis. This is useful only for students who are new to dermatology. However, it has no use to the practicing physician. Patient don't come to you with a diagnosis but they come with a problem of an unknown rash.

MORPHOLOGY OF SKIN LESION

Characteristics morphology, pattern of arrangement and lesions found in a particular anatomical location can strongly suggest a certain dermatological diagnosis. For example, group vesicles on the penis strongly suggest a diagnosis of herpes simplex infection. A concise summation of clinical features, including morphology of skin lesions, pattern of any eruption as well as symptoms (e.g. itch), is helpful in arriving at a diagnosis. Consulting a good picture atlas of skin disease also aids clinical diagnosis.

Lesions can be grouped into four distinct patterns: linear, annular, group and reticular.

Some disorders by virtue of their etiology are localized to or limited to a particular area. Herpes zoster occur in dermatomal pattern because the virus travel along the sensory nerve to the skin. Hidradenitis affects the axillae and groin because it is a disorder of apocrine gland and the glands are located densely in these areas. Photosensitive dermatoses frequently affects the head, neck and forearms since these areas are the sites of most intense sun exposure. Some disorders favour sites of skin trauma, e.g. Vitiligo and psoriasis.

The table on the next page serves as an aid to diagnosis when certain sites are involved.

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DIAGNOSIS

The diagnosis of skin lesion is made by following the same general principle as in any branch of medicine. The process begins by taking a history, followed by a physical examination and if the diagnosis is not made at this stage, further investigations can be carried out.

HISTORY

- Duration
- Relationship to physical agents: sun exposure, occupation, and medication
- Puritis
- Size and colour change
- Family history
- Previous treatment

When describing skin lesion, the following should be identified in turn:

- Site and distribution: symmetrical, asymmetrical
- Erythematous and non-erythematous
- Surface characteristics: smooth, scaly, warty
- Types of lesions: primary lesion – macule, papule, nodule, vesicle; secondary lesion – erosions, ulcer, excoriation
- Colour: pink, white, brown, yellow
- Borders and shape: well-defined, raised borders, round, pedunculated
- Arrangement of lesions: linear, annular, group, generalized, single
- Special site: scalp, nails, mouth

The acronyms below can be used to aid diagnosis of an unknown skin lesion in clinical practice:

D : distribution
A : associated features
M : morphology
N : nature – special nature or character such as pain, pruritis, duration

Region	Common	Uncommon
Face Erythematous patches	Extensive actinic keratoses Seborrhoeic dermatitis Atopic dermatitis	Contact dermatitis Lupus erythematosus Photodermatosis Fixed drug eruption
Pustular	Acne vulgaris Acne rosacea Perioral dermatitis	Tinea facicei
Butterfly rash	Seborrhoeic dermatitis Rosacea	Lupus erythematosus
Eyelids	Seborrhoeic dermatitis Atopic dermatitis Contact dermatitis Rosacea	Psoriasis Periorbital dermatitis Angio-oedema
Scalp - erythematosquamous	Seborrhoeic dermatitis Psoriasis Actinic keratoses	Discoid lupus erythematosus Tinea capitis
- vesicular/pustular	Staphylococcal folliculitis Seborrhoeic dermatitis Infection	Acne vulgaris Herpes zoster Dermatitis herpetiformis
Trunk	Drug exanthem Pityriasis vesicolor Seborrhoeic dermatitis Guttate psoriasis Scabies	Pityriais rosea Tinea corporis Mycosis fungoides
Inguinal	Intertrigo Seborrhoeic dermatitis Candidiasis Tinea curis	Contact dermatitis
Axillae	Intertrigo Seborrhoeic dermatitis Contact dermatitis	Candidiasis Acantosis nigricans tinea
Upper limbs	Atopic dermatitis Contact dermatitis Psoriasis Actinic keratosis Photodermatitis	Polymorphous light eruption Lichen planus
Hands	Actinic keratosis Pompholyx Scabies Granuloma annulare Contact dermatitis	Lichen planus Tinea Palmar pustulosis Erythema multiformae

Nails	Psoriasis Tinea unguim Paronychia Dermatitis	
Genitalia	Seborrhoeic dermatitis Scabies Candidiasis Psoriasis	Lichen planus Fixed drug eruption Secondary syphilis Contact dermatitis
Natal cleft	Intertrigo Candidiasis Tinea Seborrhoeic dermatitis Psoriasis Scabies	
Submammary	Intertrigo Candidiasis Seborrhoeic dermatitis	Psoriasis
Lower legs	Stasis dermatitis Contact dermatitis Folliculitis Psoriasis Atopic dermatitis Lichen simplex chronicus	Vasculitis Necrobiosis lipoidica
Feet	Tinea Psoriasis Pompholyx Contact dermatitis	
Generalized rash	Atopic dermatitis Drug eruption Exanthem	Psoriasis Erythroderma of other causes

COMMON SKIN CONDITIONS

To be diagnosed at first visit.

To be diagnosed by primary care physician.

1. Eczema/Dermatitis: atopic eczema, seborrhoeic eczema, discoid eczema, xerotic eczema, stasis eczema, lichen simplex chronicus, irritant contact dermatitis, allergic contact dermatitis, photodermatitis, airborne contact dermatitis.
2. Acne: comedonal, inflammatory, cystic
3. Urticaria; acute, chronic, anaphylaxis
4. Viral infections – common: herpes simplex infection, herpes zoster, chicken pox, viral warts, molluscum
5. Bacterial infections – common: folliculitis, furuncle, carbuncle, impertigo, ecthyma, cellulitis eryspalis, necrotising faciatis
6. Psoriasis: guttate, plaque, erythrodemic, pustular

7. Fungal infection: tinea versicolor, dermatophytosis (skin, hair, nail), candidiasis (skin, nails)
8. Parasitic infections: scabies, pediculosis (capitis, corporis, pubic), cutaneous larva migrans
9. Antropod bite reactions
10. Drug eruptions: localized (fixed drug eruption), generalized (exantham), Blistering, urticaria

Associated Systemic Symptoms – Signs and symptoms

Common urgent	Common Non Urgent
Acute Dermatitis	Chronic dermatitis
Cystic Acne	Mild Acne
Urticaria – angioedema	
Viral Herpes Zoster Herpes simplex Chicken pox	Warts
Bacterial – all	Folliculitis
Parasitic – all	Fungal
Erythrodemic Psoriasis Pustular Psoriasis	Plaque Psoriasis
Drug Eruption	Anthropod Bite

Uncommon Urgent / Important

1. Blistering conditions – TEN, EM, Pemphigus, Phemhigoid
2. Oral Ulcers – Acute
3. Photodermatitis
4. Purpuric Painful lesion – vasculitic
5. Cancers – Melanoma, Squamous cell ca
6. Rash with fever
7. Leprosy

THERAPEUTICS

The aims of treatment in any skin lesion are:

1. Clear symptoms
2. Prevent spread
3. Clear the lesions
4. Prevent relapse
5. Prevent complications

The mainstay of dermatological treatment is TOPICAL THERAPY. It is employed to deliver active ingredients to the skin, either at the stratum corneum or via percutaneous absorption into the dermis and appendage areas, to provide a protective barrier, or hydrate and moisturized.

Ingredients such as powders: zinc oxide, starch, calamine; liquids: water, alcohol, glycol; oils, greases or waxes are combined to produced ointments, gels creams, powder, lotions, tintures and pastes. These vehicles are used to deliver drugs in topical therapy.

The vehicle is the key factor in the effectiveness of therapy. Factors that influence the therapeutic outcome are water/lipid miscibility, occlusive properties and durability. Water soluble drugs are delivered more effectively by aqueous vehicles such as aqueous creams, gels and lotions. Similarly, lipid soluble drugs are best delivered by oily creams and ointments. Pastes and ointments are occlusive, increasing the temperature of the skin and thus increasing the percutaneous absorption of the active ingredients. Gels, ointments and pastes are more durable than creams and lotions and hence, their duration of action is longer.

In general, CREAMS (an emulsion of ointment and water) with an aid of an emulsifying agent, are generally used on normal or moist skin. They are cosmetically acceptable to used on the face, for use in the flexures and for application to large areas. However, some creams can be drying if the skin is already very dry. Preservatives used in creams can cause contact dermatitis in some patients.

OINTMENTS consist of organic hydrocarbons, alcohol and acids with little or no water, are used when the skin is dry and when enhanced absorption is required. Ointments are generally more effective than creams.

LOTIONS are used on wet surfaces e.g. wet rashes (soaks or wet dressings), on hairy areas (scalp, axillae and pubic area) and oral mucosa (mouthwashes).

GELS are used as an alternative to lotions in hairy areas and where a drying effect is beneficial, especially gels with an alcoholic base e.g. in acne. Gels and lotions with alcohol should not be applied to excoriated or abraded skin, as they will sting.

PASTES are used for occlusions and protection, and where substantiative effects are required, allowing the drug to stay in contact with the skin for prolong periods. They are also used in the application of an irritant drug to a limited area of skin, e.g. dithranol, high concentration of salicylic acid.

PAINTS are liquid preparations that dry rapidly once applied to the skin. They are useful for application to small localized areas of the skin and for rapidly delivering the active ingredient to areas with skin folds such as between toes, the groin and under the breasts.

DUSTING POWDERS consist of powders such as talcum, zinc oxide and starch. They are useful in intertriginous areas to separate apposed skin surfaces and enhanced evaporation. However, they may not be as effective as other bases in delivering the active ingredient to the site of action.

TOPICAL STEROIDS

Topical steroids are the most effective medications for treating inflammatory skin disease. They are safe when used properly. All steroid preparations have similar properties and differ only in strength, base and cost. They are divided into seven classes (Class 1: most potent – Class 7: mild), depending on their ability to induce vasoconstriction of the small vessels in the upper dermis. In practice, however, it is impossible and impractical to remember such a classification. It is more convenient and practical to divide it just into three classes:

1. Strong: Dermovate, Diprocel
2. Normal: Cutivate, betnovate, celestoderm
3. Mild: Eumovate, hydrocortisone

For the same steroid ingredient, the formulation and the strength of the pharmacological agent can also influence its ability to induce vasoconstriction and hence its classification. E.g. ¼ strength celestoderm can be considered a weak steroid.

CHOICE OF TREATMENT

1. Effectiveness/efficacy
2. Safety
3. Cost
4. Convenience.

FAILURE OF TREATMENT

Why patient did not get better?

1. Inadequate clearance: poor understanding of topical treatment
2. Failure to identify and remove irritants and aggravating factor
3. Lack of social, economic and psychological support.