Fundamentals of Dermatology

Describing Rashes and Lesions

History remains ESSENTIAL to establish diagnosis – duration, treatments, prior history of skin conditions, drug use, systemic illness, etc., etc. Historical characteristics of lesions and rashes are also key elements of the description. Painful vs. painless? Pruritic? Burning sensation?

Key descriptive elements – 1- definition and morphology of the lesion, 2- location and the extent of the disease.

DEFINITIONS:

Atrophy: Thinning of the epidermis and/or dermis causing a shiny appearance or fine wrinkling and/or depression of the skin (common causes: steroids, sudden weight gain, “stretch marks”)

Bulla: Circumscribed superficial collection of fluid below or within the epidermis > 5mm (if <5mm → vesicle), may be formed by the coalescence of vesicles (blister)

Burrow: A linear, “threadlike” elevation of the skin, typically a few millimeters long. (scabies)

Comedo: A plugged sebaceous follicle, such as closed (whitehead) & open comedones (blackhead) in acne

Crust: Dried residue of serum, blood or pus (scab)

Cyst: A circumscribed, usually slightly compressible, round, walled lesion, below the epidermis, may be filled with fluid or semi-solid material (sebaceous cyst, cystic acne)

Dermatitis: nonspecific term for inflammation of the skin (many possible causes); may be a specific condition, e.g. atopic dermatitis

Eczema: a generic term for acute or chronic inflammatory conditions of the skin. Typically appears erythematous, edematous, papular, vesicular, and crusted. When chronic it leads to lichenification and sometimes hyperpigmentation. Usually itches and burns. May be specific condition; e.g., “nummular eczema”, or nonspecific term “eczematous eruption” or “hand eczema”

Erosion: Loss of portion of the epidermis, superficial and non-scarring (area after a vesicle or bulla ruptures); also see ulcer

Eruption: a “breaking out” of the skin or rapidly developing dermatosis

Erythematous: a 5 syllable word for “red”

Exanthem: a skin eruption typically due to a viral (or some bacterial) systemic disease

Excoriation: similar to erosion, but from self-inflicted removal of some or all of the epidermis (scratch)

Fissure: Vertical “cut” extending into the dermis. (anal fissure, “cracked skin” from T. pedis)

Hive: (see wheal)

Hyperkeratotic: Localized thickening of the epidermis (stratum corneum layer), (wart, callous)

Keloid: Abnormally hypertrophied scar

Lichenification: Leathery induration and thickening of the skin with hyperkeratosis due to long standing scratching or irritation, marked prominence of normal skin lines (many chronic dermatoses)

Macule: Flat, nonpalpable lesion with color change (hyper- or hypopigmented, erythematous) less than 5-10mm (larger than 5-10mm → patch) (freckles, flat nevi)

Morphology: Shape of the primary lesion, e.g. linear, round.

Nodule: A solid lesion (5-20mm) with an appreciable deep (dermal and/or subcutaneous) component, (lipoma, dermatofibroma)
Papule: Raised lesion less than 5-10 mm (larger than 10mm → plaque or nodule) *(wart, actinic keratosis)*

**Patch:** a larger flat, nonpalpable lesion – or macule that is > 1cm, (some will still call these macules)

**Petechiae:** small (< 5mm) hemorrhagic (red-purple) non-blanchable discolorations (>5mm → purpura) *(meningococcemia, Rocky Mountain Spotted Fever, DIC, viral exanthem)*

**Plaque:** A flat topped, elevated area of the skin larger than 5-10mm, may be formed from coalescence of papules, *(psoriasis, seborrheic keratosis)*

**Primary skin lesions:** the initial recognizable skin lesion or basic skin changes (macule, papule, patch, plaque, vesicle, bulla, nodule, tumor, pustule, wheal, cyst, telangiectasia)

**Purpura:** larger (>5mm) hemorrhagic (red-purple) non-blanchable discolorations (<5mm → petechiae) *(vasculitis, Henoch Schonlein purpura)*

**Pustule:** Circumscribed lesion filled with purulent material *(acne, folliculitis)*

**Scale:** Surface alteration resulting in a “flaky” surface, due to abnormal proliferation of the outermost epidermal layer, the stratum corneum, may be fine, or thick and greasy, or loose or adherent. *(seborrheic dermatitis, psoriasis)*

**Secondary skin lesions:** Changes which occur as a result of the natural development of, or due to external manipulation of the primary lesion. *(sometimes the secondary changes make it impossible to see and describe the primary lesion)* (scale, lichenification, keloid, excoriation, fissure, erosion, ulcer, atrophy, crust, hyperkeratosis)

**Telangiectasia:** dilated superficial capillary/venule; may be linear, spiderlike, or matlike. *(rosacea, BCC)*

**Tumor:** A large solid lesion (> about 2 cm), with deeper dermal or subcutaneous thickness (a large nodule)

**Ulcer:** Loss of skin extending into the dermis, scarring (any loss that penetrates the dermal-epidermal junction scars), see also erosion

**Urticarial:** A well defined, localized area of edema - a wheal, often intensely pruritic.

**Vesicle:** Well circumscribed fluid-filled lesion up to 5-10mm. (>10mm → bulla) *(herpes, varicella)*

**Wheal or hive:** A localized edematous plaque-like lesion, somewhat irregular and transient.

**Remember:**

<table>
<thead>
<tr>
<th>Changes with size</th>
<th>Changes with depth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Macules → patches</td>
<td>Erosion → ulcer</td>
</tr>
<tr>
<td>Papules → plaques (or nodules)</td>
<td></td>
</tr>
<tr>
<td>Vesicles → bullae</td>
<td></td>
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</tbody>
</table>

“Maculo-papular” should be about 50-50 of both
Morphologic Characteristics

Shape/arrangement

<table>
<thead>
<tr>
<th>Shape/arrangement</th>
<th>Description</th>
<th>Condition(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Round/discoid</td>
<td>coin shaped, no central clearing</td>
<td>nummular eczema</td>
</tr>
<tr>
<td>Oval</td>
<td>ovoid</td>
<td>pityriasis rosea</td>
</tr>
<tr>
<td>Annular</td>
<td>round, with active margin and central clearing</td>
<td>tinea corporis</td>
</tr>
<tr>
<td>Reticular</td>
<td>net-like or lacy</td>
<td>lichen planus</td>
</tr>
<tr>
<td>Linear</td>
<td>in a line</td>
<td>contact dermatitis</td>
</tr>
<tr>
<td>Iris/target</td>
<td>purple papule in the center of pink macule</td>
<td>erythema multiforme</td>
</tr>
<tr>
<td>Serpiginous</td>
<td>snakelike or wavy line track</td>
<td>cutaneous larval migrans</td>
</tr>
<tr>
<td>Polycyclic</td>
<td>interlocking or coalesced circles</td>
<td>psoriasis</td>
</tr>
<tr>
<td>Morbilliform</td>
<td>measles-like; maculo-papular lesions with confluence on the face and body</td>
<td>roseola, mononucleosis</td>
</tr>
</tbody>
</table>

Border/Margin

Discrete (psoriasis) or indistinct (many types of eczema) or irregular (malignant melanoma)

Feel

Indurated (SCC), hard (dermatofibroma), soft (skin tag), sclerotic (venous stasis ulcers)

Color changes

- Erythema - pink (genital warts, roseola), salmon-colored (pityriasis rosea), brawny (candidiasis)
- Violaceous – Kaposi’s sarcoma, lichen planus
- Yellow – xanthoma, psoriatic nails
- Tan-brown – most benign nevi
- Black – malignant melanoma
- Pearly – basal cell carcinoma
- Honey-colored crusts – impetigo

Other changes/aspects

- Desquamation – dyshidrotic eczema, toxic shock syndrome
- Hyperkeratotic – (hypertrophic stratum corneum) AK’s, calluses, warts
- Central umbilication or punctuation – molluscum contagiosum, BCC
- Verrucous – wartlike, seborrheic keratosis and warts
- Satellite lesions – candidiasis, impetigo
- Macerated – chronically wet – interdigital tinea pedis
- Weeping/oozing – acutely inflamed contact dermatitis
- Guttate – drop-like (guttate psoriasis)
Location and distribution

Localized, regional, or generalized
Dermatomal – herpes zoster
Sun-exposed areas – sunburn, SLE, porphyria, photosensitivity to drugs
Clothing covered area – contact dermatitis, miliaria
Flexural areas – atopic dermatitis, intertrigo, candidiasis, tinea cruris
Extensor areas – psoriasis, atopic dermatitis in infants, eruptive xanthomas
Truncal – pityriasis rosea, drug eruptions

(Description terminology is from Mosby’s Guide to Physical Examination, Bates Guide to Physical Exam and History Taking and Dermatology texts listed below)

Dermatology textbooks – (I am frequently asked which dermatology texts I recommend and use, while there are many excellent texts out there, these three are my personal favorites and are used often in my office.)

- Preferred texts –

Websites

- EXCELLENT Tutorial for describing skin conditions – Interactive Dermatology Tutorial: http://www.logicalimages.com/morphology/morphology3_content.html
- Dermatologic Image Database from University of Iowa - http://www.healthcare.uiowa.edu/dermatology/DermImag.htm
- Dermatology Information System – comprehensive online derm info - www.dermis.net

If your charts do not routinely include words like macules, papules, plaques, nodules, ulcers, petechiae, etc. – then review this tonight to avoid confusion over next few days.