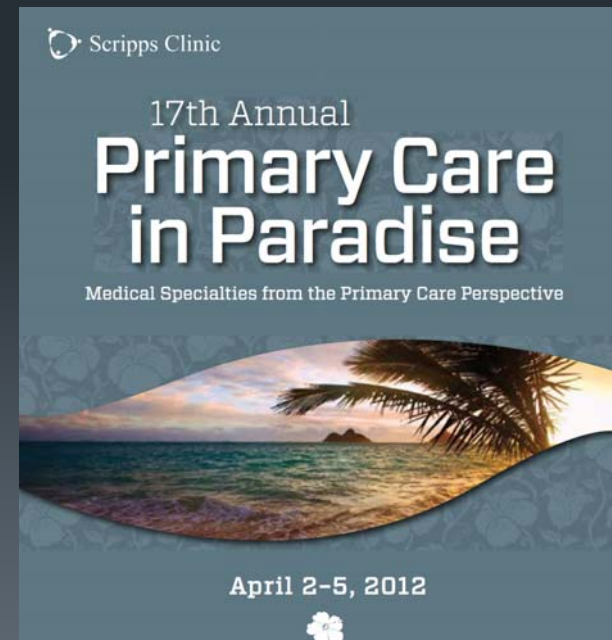


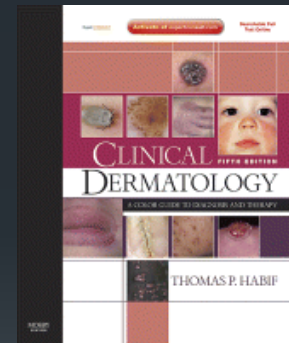
Description, Definition and Diagnosis of Common Skin Rashes

Daniel Zelac, MD
Scripps Clinic



Acknowledgements

- Conflicts of Interest – None
- Many of the photographs and diagrams contained in this talk can be referenced in Clinical Dermatology, 5th Edition By Thomas P. Habif, MD
- Please do not further duplicate these images
- (referenced in talk as “Habif 5th”)





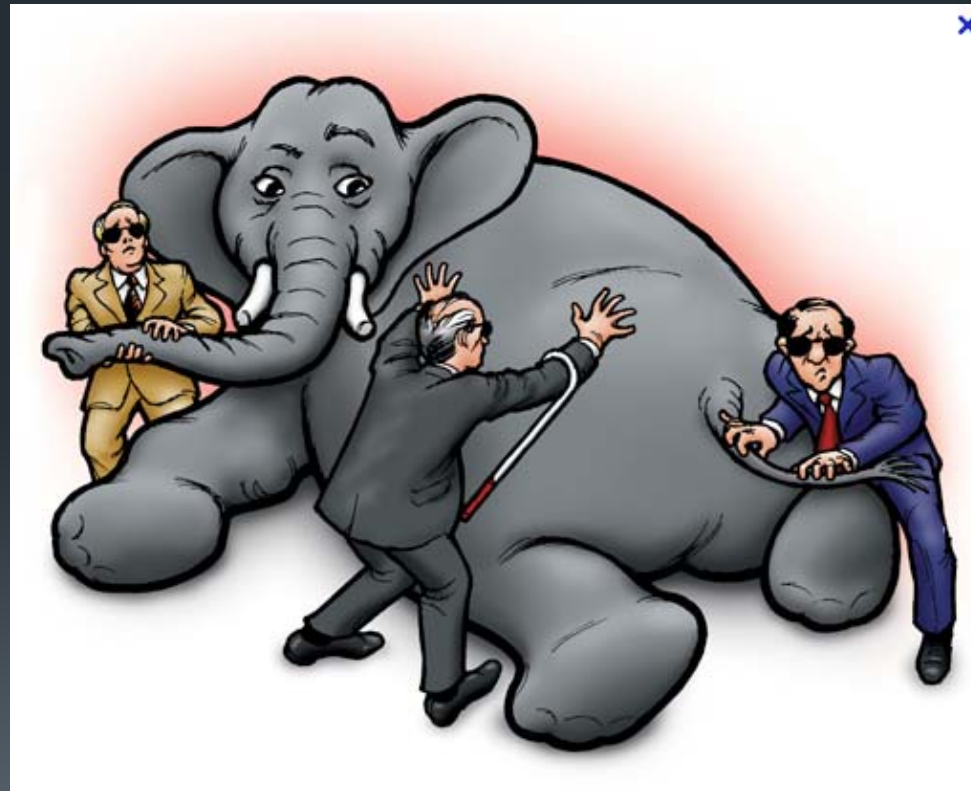
What is a rash?

- Definition by Webster's – an eruption of the body

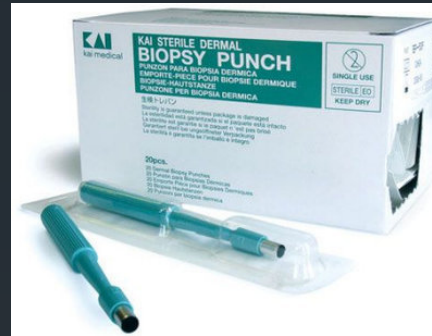
- Definition - The popular term for a group of spots or red, inflamed skin that is usually a symptom of an underlying condition or disorder. Often temporary, a rash is only rarely a sign of a serious problem.

- *The Free Dictionary by Farlex*
- <http://medical-dictionary.thefreedictionary.com/Rashes>

Can we make the diagnosis based solely on one finding?



Finding the clues to diagnosis



Lesion Types



- **Primary Lesion** - Typically the earliest representative physical finding related to a disease or a condition
- **Secondary Lesion** – A physical finding that develops during the evolution of a disease or condition and can often be affected by the interaction with the patient or others



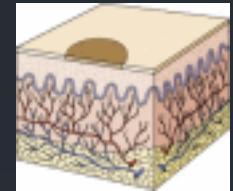
Distribution

- Symmetry
- Sun-exposed
- Accessible
- Palmar/Plantar
- Inguinal/Intertriginous
- Hair-bearing
- Mucosal
- Dermatome
- Linear
- Geographic
- Serpiginous
- Annular



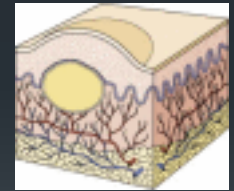
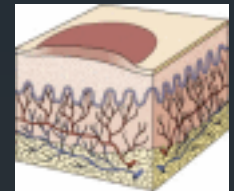
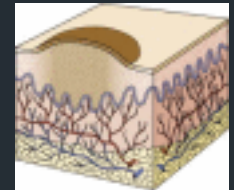
Primary Lesions

- **Macule** - Flat circumscribed skin demonstrating a variation in color from surrounding skin <1cm diameter
- **Patch** – Large macule ≥ 1 cm diameter



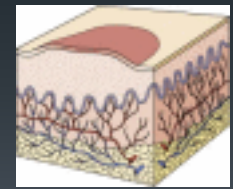
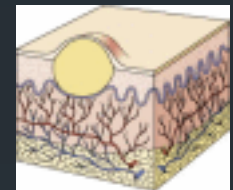
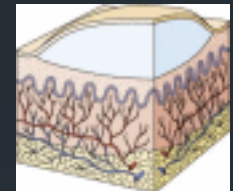
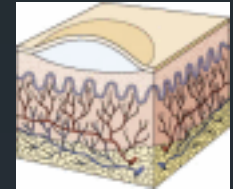
Primary Lesions

- **Papule** – Solid palpable lesion < 0.5cm diameter
- **Plaque**- a broad papule demonstrating elevation from the surrounding skin >0.5 cm diameter, appear relatively flat with no, or limited deep component
- **Nodule**- a larger palpable solid elevation >0.5 cm diameter, often with a deep component



Primary Lesions

- **Vesicle** – circumscribed elevated lesion containing fluid
< 0.5 cm diameter
- **Bulla** – a large vesicle >0.5 cm diameter
- **Pustule** – a circumscribed elevation that contains a purulent exudate
- **Wheal** – Evanescent, edematous plaque



Primary Lesions

- **Cyst** – Circumscribed papule or nodule that contains fluid or other material (not predominantly purulent) within a defined cavity



Plasticsurgerynotes.net



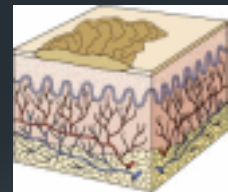
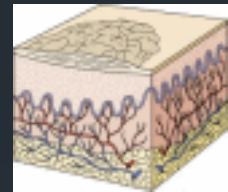
Your-doctor.net



Wecareindia.com

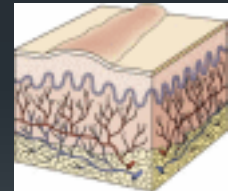
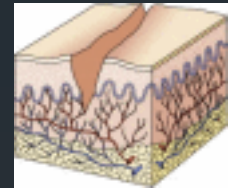
Secondary Lesions

- **Scale** - Thick stratum corneum resulting from hyperproliferation or increased cohesion
- **Crust** - Collection of dry debris, dried sebum, serum, exudate, or blood



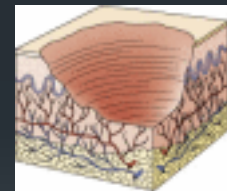
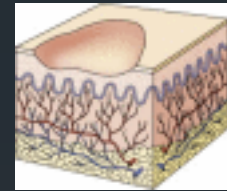
Secondary Lesions

- Excoriations, Abrasions – linear erosions caused by mechanical means
- Fissures- Linear cleft into the epidermis or dermis



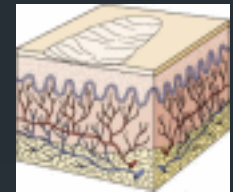
Secondary Lesions

- Erosions- Loss of epidermis
- Ulcer- Loss of epidermis and portions of dermis



Secondary Lesions

- Lichenification- Hyperplasia of the epidermis
- Atrophy – thinning of the epidermis or dermis



Additional descriptors/structural attributes

- Hematoma – Extravasation of blood typically forming creating its own space
- Petechia – Pinpoint red lesion representing extravasated blood
- Telangectasia- Superficial cutaneous blood vessels
- Tattoo – deposition of pigmented material within the skin



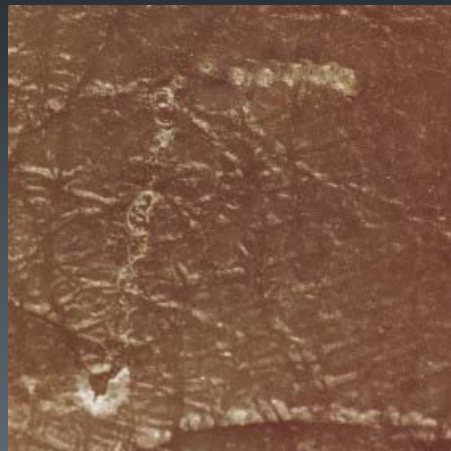
Additional descriptors/structural attributes

- Abscess- Collection of purulent material typically located in the dermis or subcutaneous fat (large loculated variant – Furuncle)
- Comedome – A dilated follicular opening containing keratin, sebum and epithelial debris



Additional descriptors/structural attributes

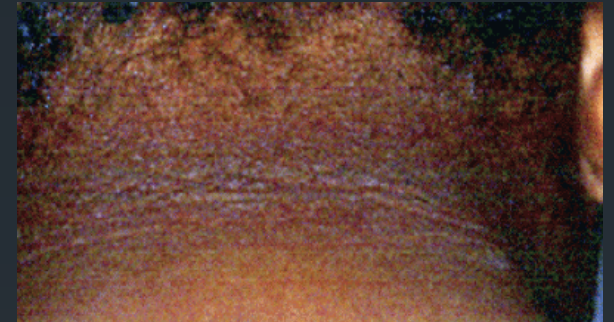
- Burrow – Tunnel in the skin
- Fistula – Channel communication between two surfaces
- Sinus – Elongated tunnel
- Puncta- opening to the surface, typically epithelialized



Flexural lichenification and Hyperpigmentation

■ Acanthosis Nigricans

-
- Noted for a 'velvety' thickened plaque typically symmetric distribution in areas of skin folds
- Associated with obesity, genetics medication (Nicotinic acid), malignancy (adenocarcinoma, lymphoma)
- Hyper-insulin states
- Treatment – weight loss, resolution of cause



www.medfacts.com



www.Everydayhealth.com

Pink-red Plaques on the Trunk

- Psoriasis
- Pityriasis Rosea
- Nummular Dermatitis
- Tinea corporis
- Cutaneous T-Cell Lymphoma(CTCL)



Psoriasis

- Hereditary disease(Dominant with variable penetrance) is chronic and recurrent.
- Basic Pathogenesis - change in keratinocyte cycling and dysregulated inflammation
- Much of this cycling is activated by T-cell stimulation TNF alpha, Interferon Gamma and Interleukin 12/23
- Exhibits koebnerization
- Plaques bleed when removed
- Affects 1-3% of Western populations
- Variants include:
 - Plaque Psoriasis
 - Guttate Psoriasis
 - Pustular Psoriasis
- Significant psychosocial implications of the disease



Psoriasis – PASI Score

- Psoriasis Area and Severity Index (PASI) –
- 3 items evaluated Redness, Scaling, Thickness (0-4)
- Body surface area – extent of involvement (0-6)
- Range of scores (0-72)

- Drug effectiveness determined by % of tested population reaching a PASI reduction of 75% over a 12 week period

Pityriasis Rosea

- Very Common maculopapular erythematous (salmon colored) eruption noted for its trailing scale
- 'Herald Patch' is the sentinel lesion, first occurring
- Most often presents during Fall and Winter
- Associated with human herpesvirus 6 (HHV-6)
- Most pt's are young (age 10-35)
- Occasionally recurrent
- No treatment is required although antihistamines may be used for pruritus

- DDX includes 2ndary syphilis, guttate psoriasis, other viral exanthams, nummular eczema and drug eruptions



Nummular Dermatitis



- “Coin-Shaped” Lesions ; plaques made up of grouped small papules with erythematous base
- Chronic pruritic inflammatory dermatitis
- Seasonal – typically winter months
- Treatment- Emollients, Topical steroidal preparations

Tinea Corporis

A superficial fungal infection of the body.

Most common organism is *Trichophyton rubrum*

Treatment- Topical antifungal preparations

Specific variations of infections include Tinea capitis, onychomycosis, Tinea incognito (Majocchi granuloma) and represents the dermatophytes predilection to infect the non-viable keratinized tissues, i.e. stratum corneum, nails, hair



Annular Plaques

- Tinea Imbricata
- Tinea Circinata



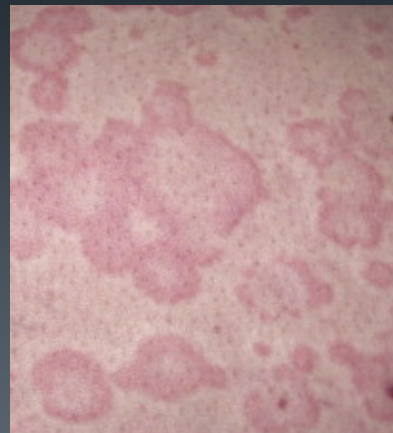
Cutaneous T-Cell Lymphoma (CTCL)

- T-cell lymphoma that localizes initially to the skin
- Predominantly CD4+
- May progress to Sezary syndrome or Mycosis Fungoides
- Can present with eczema-like lesions, pruritis, alopecia, pigmentary changes,
- Staged as patch, plaque, or tumor stages



Annular Plaques

- Erythema Annulare Centrifigum
- Erythema Multiforme
- Granuloma Annulare
- Neonatal Lupus
- Discoid Lupus
- Tinea Corporis
- Urticaria





Erythema Annulare Centrifigum(EAC)

- Figurate or gyrate erythema
- Non-pruritic, Scale+/-, annular or arcuate eruption
- Lesions evolve with central clearing
- Cause- predominantly idiopathic probably hypersensitivity rxn

Erythema Multiforme

- Primary lesion 'targetoid' bullseye,.. May become vesicular or bullous dull red faded color
- Distribution – palms and soles, mucous membranes
- Benign course
- May be related to HSV, sulfonamides, phenytoin, barbiturates, phenybutazone, penicillin, allopurinol...



Granuloma Annulare

- Collection of small firm papules flesh tone- pink that are arranged in a ring or arcuate arrangement
- Often found on the hands and feet
- Localized and Generalized variants
- Generalized has been associated with diabetes mellitus and HIV
- Spontaneous resolution is more common than response to treatment
- Other Variants-
 - Perforating GA that shows a transepithelial elimination of degenerating collagen fibers
 - Subcutaneous GA , children



Discoid Lupus(Chronic cutaneous Lupus erythematosis

- Localized disease
- F>M peaks in 4th decade
- Sharply demarcated, possibly round plaque lesions
- Face and Scalp most common areas
- Asymmetric distribution
- “carpet tack” scale is pathopneumonic
- Often demonstrated in conchal bowl
- Disease is noted for hypertrophy and atrophy
- More common in darker skin individuals
- Anti-ssDNA is present with active disease



r - Bologna, Jorizzo and Rapini: Dermatology - www.d



Urticaria

- Denoted by wheals
- Presents as Chronic or Acute(<30 days)
- 15%-23% demonstrate acute during lifetime
- 25% of patients demonstrating acute will develop chronic during lifetime

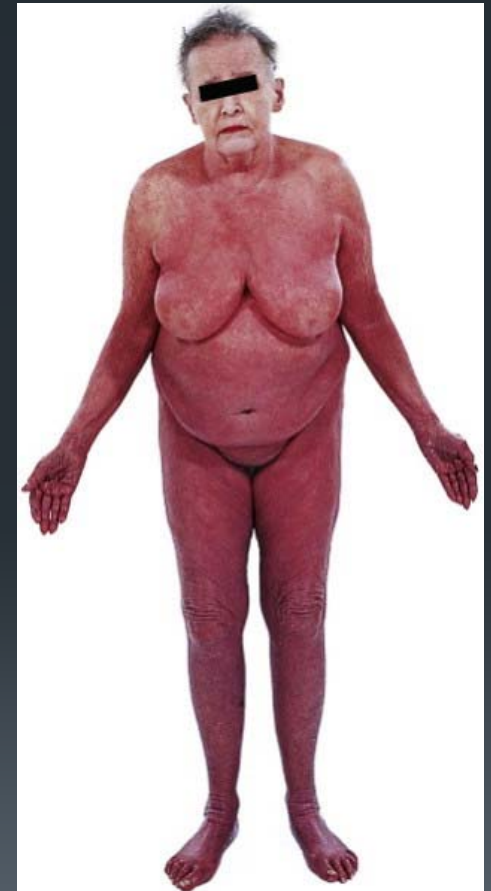


Erythrodermic Conditions

- CTCL Sezary Syndrome
- Medication related
- Psoriasis

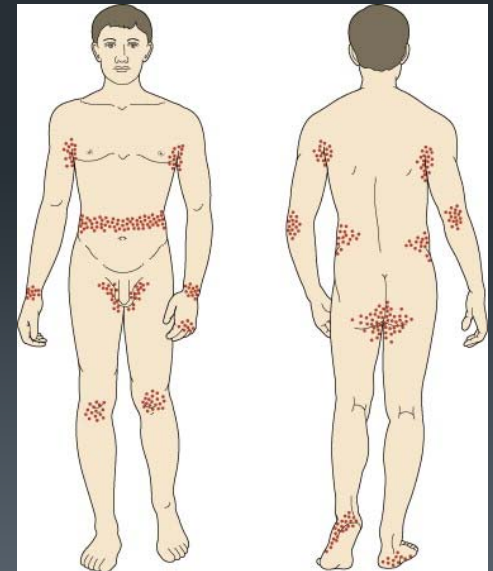


© Mayo Foundation for Medical Education and Research. All rights reserved.



Pruritic Papular Eruption of the Trunk

- Grover's Disease(transient acantholytic dermatitis), Swimmer's Itch(freshwater), Seabather's eruption, Hot tub Dermatitis, Scabies, Grover's Disease(transient acantholytic dermatitis)



Grover's Disease

- Men over 60 in the winter
- Most common distribution-
Trunk/ inframammary
- Reddish brown papules
- Extremely pruritic
- Lesions do not congregate

- Transient and self-remitting



Ascending Papules/Nodules of the Extremities

- Sporotrichosis
- Cat Scratch Disease
- Atypical Mycobacteria
- Bacterial lymphangitis
- Metastatic lesions
- Flat warts
- Molluscum contagiosum
- Porokeratosis
- Lichen Planus



Sporotrichosis

- Cutaneous Infection with *Sporothrix schenckii*, a plant fungus, most associated with Roses
- Follows inoculation of the skin
- Sentinel nodule typically ulcerates
- Linear distribution relates to ascending lymphangitis
- Risks for Localized form – Diabetes, alcohol abuse
- Risks for Disseminated form – Immunosuppression, i.e. HIV, iatrogenic, lymphoproliferative disease
- Therapy – Oral antifungal meds, i.e. Itraconazole, Fluconazole, Ketoconazole, Terbinafine, Saturated Potassium solution



Atypical Mycobacteria

- *Mycobacterium Marinum*
 - Most common contact is through fish tanks
- *Mycobacterium fortuitum*
noted for outbreak listed
by CDC in Northern
california nail salon



Bacterial Lymphangitis

Migratory Inflammation of the lymphatics due to distal bacterial infection

Most commonly *Streptococcus pyogenes*



Metastatic Lesions



Flat Warts



Molluscum contagiosum

- Pox virus
- Often spread and can be tracked



Porokeratosis



Most common presentation is in Disseminated Superficial Actinic Porokeratosis

Uniform small flat 2-5 mm centrally atrophic papules

Predominantly in sun-exposed distribution, generally symmetric

Unknown cause

Rarely a precondition to actinic keratoses or SCC

Autosomal Dominant

Treatment- 5-FU, retinoids, imiquimod



Lichen Planus

- Idiopathic disorders characterized by 5 'P's':
 - Purple
 - Polygonal
 - Pruritic
 - Papules
 - Penis
- Oral mucosa, flexural forearms, lower legs, sacrum, nails
- Lesions are 'flat-topped,' may have Wickman's striae: lacy white scale
- + Koebner phenomenon
- Assoc: Hepatitis C infection
- Treatment: topical, intralesional steroids
 - oral steroids, retinoids, cyclosporine
 -



© 2003 Elsevier - Bologna, Jorizzo and Rapini: Dermatology - www.dermtext.com



Serpingenous Lesions

- Tinea Corporis
- Cutaneous larva migrans
- Granuloma annulare
- Porokeratosis of Mibelli
- Erythema gyratum repens,
- Asteatotic Eczema (Xerosis)
- Erythema ab igne



Cutaneous Larva Migrans

- *Ancylostoma braziliense* most common cause
- Penetrating nematode larvae (hookworm)
- Self limited infestation, typically resolve in 2-8 weeks



Granuloma Annulare

- Types:
- Localized
 - Skin colored – violaceous in rings or groups; most common on the wrists, ankles, dorsal hands
- Generalized
 - Occur in adults and are often on trunk and extremities
- Subcutaneous
 - Predominantly children similar distribution
- Perforating
 - Very rare, similar distribution but scarring
- Arcuate
 - Infiltrated pattern with annular pattern



Erythema Gyratum Repens

- Paraneoplastic presentation
- Erythema gyratum repens (EGR) is a figurate erythema that is believed to be a paraneoplastic process.
- Exhibits migratory erythematous concentric eruption
- Believed to be an antibody complex of tumor generated antigens that create remitting focal areas of inflammation
- Pruritic



Asteatotic Eczema

- Dry cracked scaled skin
- Occurs predominantly in elderly
- Results often from over bathing or use of drying soap products
- Extremely pruritic



Erythema ab Igne



- Reticulated, erythematous/hyperpigmented dermatosis
- Follows chronic or lengthy exposure to heat source
- E.g. heating pads, etc
- Low long term risk of SCC or Merkel cell carcinoma