

## Clinical Dermatology Part 1 Infectious Dermatology

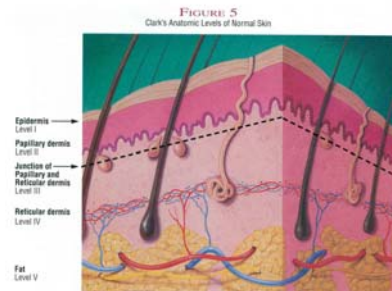
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## Objectives

- At the end of the lecture the participant should be able to:
  - Describe the basic characteristics of common skin lesions.
  - Describe the etiology, signs and symptoms and differential diagnosis of common infectious skin diseases.
  - Describe the laboratory / special studies evaluation, treatment and prognosis of common infectious skin diseases.

## Anatomy and Physiology

- Skin functions:
  1. holds body fluids within its boundaries
  2. protects underlying tissues
  3. synthesizes vitamin D
  4. helps modulate body temperature



## Anatomy and Physiology

- Color: depends primarily on four pigments: melanin, carotene, oxyhemoglobin and deoxyhemoglobin.

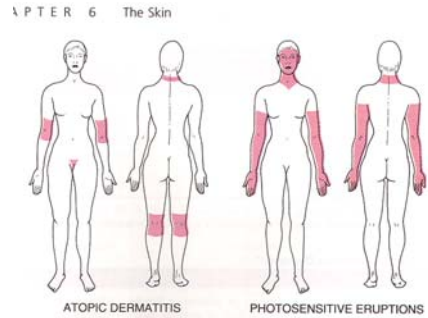
## Physical Examination

- Skin: Inspect and Palpate
- Color: basic (tan, brown, black, red, pink, white, yellow, purple, green)
- Moisture: moist, dry, diaphoretic
- Temperature: cool, warm, hot
- Texture: smooth, rough, edematous
- Mobility: turgor
- Lesions

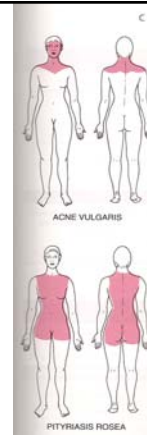
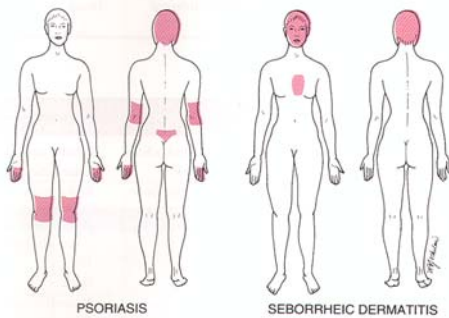
When describing lesions note their characteristics

- size (in centimeters)
- color: basic colors
- anatomic location
- distribution: face only, sparing face, sun exposed areas, etc.
- margination: sharp, well defined borders versus poorly defined borders
- arrangement: linear, scattered, dermatome
- surface characteristics / types of lesions

Flexor Surface

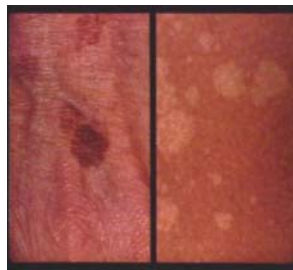


Extensor Surface



Macule

- Macule: Small, flat spot. <0.5cm in diameter. They may be any color.
- Example: freckle, petechiae.



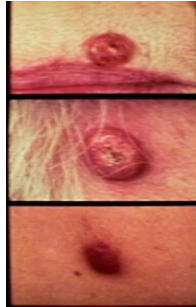
PAPULE

- Papule: small, palpable lesion less than 0.5cm in diameter.
- Papules may be of any color and their surface may be smooth or rough.



## NODULE

- Nodule: enlargement of a papule in three dimensions: length, width and height.



## PATCH

- Patch: extension of a macule in two dimensions: length and width, i.e. an area of color change that is 0.5cm or larger in diameter.



## PLAQUE

- Plaque: enlargement of a papule in two dimensions: length and width.



## PUSTULE

- Pustule: vesicle that is filled with neutrophils. For this reason it is white, or yellow-white in color.



## VESICLE

- Vesicle: small blister less than 0.5cm in diameter. Conceptually it can be considered as a fluid-filled papule in which the fluid is loculated.



## BULLA

- Bulla: vesicle which is 0.5cm or larger in diameter. It is otherwise entirely similar to a vesicle.



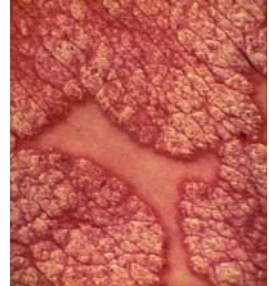
## CRUST

- Crust: The dried residue of serum, pus or blood.
- Example: impetigo



## SCALE

- Scale: A thin flake of exfoliated epidermis.
- Example: dandruff, dry skin, psoriasis.



## Target Lesions

- Target Lesions: The outer zones are usually rings of erythema or edema, while the central portion is an opaque white, yellow or (dusky) gray color.
- Example: Erythema Multiforme



## ZOSTER

- Herpes Zoster, Shingles: vesicular lesions in a dermatomal pattern.
- Example of typical pattern in an immunocompetent patient



## Infectious Dermatitis

- Molluscum Contagiosum
- Herpes Simplex Virus
- Verrucae
- Cellulitis
- Scalded Skin Syndrome
- Impetigo
- Furuncle
- Folliculitis
- Pediculosis

## Molluscum Contagiosum

- Etiology: caused by the poxvirus.
- Presents as a single or multiple rounded, dome-shaped, waxy papules 2-5mm, that are umbilicated.
- Lesions are autoinocuable and spread by wet skin to skin contact.
- May be in genital region;
- When in the genital region is considered a sexually transmitted disease



## Molluscum Contagiosum



## Molluscum Contagiosum

- Diagnosis: established by the distinctive central umbilication of the dome-shaped lesion.
- Treatment is by curettage or applications of liquid nitrogen.
- Molluscum is more responsive to therapy than verrucae (warts) to applications of liquid nitrogen

## Herpes Simplex Virus (HSV)

- Grouped vesicles on an erythematous base
- Principal symptoms are burning and stinging. Neuralgia may precede or accompany attacks.
- Regional lymph nodes may be swollen and tender
- **Tzanck smear** is positive for multinucleated giant cells; viral cultures may be positive, serologies (IgM, IgG), ELISA, and direct fluorescent antibody tests.



## HSV

- Treatment: systemic agents (acyclovir, famciclovir, valacyclovir); topical agents are not as efficacious (acyclovir ointment, penciclovir cream)
- Complications: pyoderma, eczema herpeticum, herpetic whitlow, herpes gladiatorum, esopagitis, neonatal infection, keratitis and encephalitis.



## Herpes Zoster

- Herpes Zoster, "Shingles": vesicular lesions in a dermatomal pattern, involvement is unilateral.
- Treatment: Acyclovir 800mg five times a day for 7 days; valacyclovir 1gm TID x 7 days or famciclovir 500mg TID x 7.
- If involves facial nerve, hospitalize and administer IV acyclovir, ophthalmologist consult, "emergency".



## Verrucae "Warts"

- Verrucous papules anywhere on the skin or mucous membranes.
- Caused by human papillomaviruses (HPV)
- Prolonged incubation period (2-18 months)
- Spontaneous "cures" are frequent. "Recurrences" are frequent.



## Verrucae “Warts”

- Treatment:
  - liquid nitrogen
  - Keratolytic agents and occlusion
  - Podophyllum resin
  - Imiquimod
  - Operative removal
  - Laser therapy
  - Bleomycin

## Cellulitis

- The word cellulitis literally means inflammation of the cells. It generally indicates an acute spreading infection of the dermis and subcutaneous tissues resulting in pain, erythema, edema, and warmth.



## Cellulitis

- Begins as a small patch
- Lesion expands over hours (onset to presentation is usually 6 – 36 hrs)
- Patient becomes more ill with time (fever, chills, malaise and may progress to septicemia)
- Hallmarks of cellulitis include the following:
- Warmth, erythema, edema, and tenderness of affected area are present.

- Associated red streaking visible in skin proximal to the area of cellulitis is characteristic of ascending lymphangitis. In lymphangitis, the infection is carried through the lymphatic system.
  - Regional lymphadenopathy may be present.
  - The margin of cellulitis will not be palpable.
  - Fever may be present.
  - Cellulitis characterized by violaceous color and bullae suggests infection with *Streptococcus pneumoniae* (pneumococcus).
- \* Cellulitis of the lower extremities is more likely to develop into thrombophlebitis in geriatric patients.

- Leukocytosis with left shift is usually present.
- Aspiration of the advancing edge is usually not performed
- Areas of abscess or bullae formation (loculated site)
  - Culture and Gram stain of fluid may be helpful.
  - Yield is positive approximately 90% of the time.
- If unusual organism is suspected or patient is immunocompromised
  - Full thickness skin biopsy performed and send for culture and histologic evaluation with gram stain.

## Treatment

- *Antibiotics* -- Empiric coverage for group A streptococci and *S aureus* should be provided.
- Acceptable inpatient regimens (MSSA) include a (eg, Cefuroxime (Kefurox, Zinacef) -- second-generation cephalosporin. Ceftriaxone (Rocephin) -- Third-generation cephalosporin) or a penicillinase-resistant synthetic penicillin (Dicloxacillin).
- In certain geographical areas of the country with high rates of methicillin-resistant *S aureus* (MRSA), alternative antimicrobial agents such as clindamycin or trimethoprim-sulfamethoxazole (TMP-SMZ) should be considered.

## Scalded Skin Syndrome

- Staphylococcal scalded skin syndrome (SSSS) is a syndrome of acute exfoliation of the skin following an erythematous cellulitis.
- SSSS is caused by an exotoxin from a staphylococcal infection.



## Scalded Skin Syndrome

- **In the US:** SSSS is most common in children and neonates. It is rare in adults
- Mortality rate from SSSS in children is very low (1-5%), unless associated sepsis or an underlying serious medical condition exists. Mortality rate in adults is higher (as high as 20-30%). Significant morbidity can result from hematologic or local spread of infection.



## Scalded Skin Syndrome

- Fever, although patients may be afebrile
- Tenderness to palpation
- Warmth to palpation
- Diffuse erythematous rash
- Exfoliation of skin
- Facial edema
- Perioral crusting
- Sandpaper like rash
  - Accentuated in flexor creases

## Treatment

- The major focus of ED care should be to identify staphylococcal scalded skin syndrome (SSSS) and to stabilize the patient's condition.
- Patients need fluid rehydration,
  - Fluid rehydration is initiated with lactated Ringer solution at 20 cc/kg initial bolus. Repeat as clinically indicated.
- Topical wound care similar to thermal burns,
  - Saline (wet to dry), followed by topical antibiotic ointment.
- Parenteral antibiotics to cover *S aureus*
  - MSSA (*Nafcillin*, *Penicillin G procaine*, *Amoxicillin and clavulanate (Clavulin, Augmentin)* Cefazolin (Ancef, Kefzol, and Zolicef).
  - MRSA (*Vancomycin*)(*Daptomycin*)
- **Steroids should be avoided.**

## Impetigo

- Impetigo contagiosa is a superficial, intraepidermal, unilocular, vesiculopustular infection. Impetigo contagiosa is the most common skin infection in children.
- Impetigo is an infection caused by group A beta-hemolytic streptococci (GABHS) or *Staphylococcus aureus*.
- **In the US:** Approximately 9-10% of all children presenting to clinics with skin complaints have impetigo



## Impetigo

- Most frequently on the face (around the mouth and the nose) or at a site of trauma
- Red macule or papule as early lesion
- Lesions with ruptured bullae and crusted edges
- Lesions with honey-colored crusts
- Thin-roofed vesicle or bullae (usually nontender)



- *Topical antibiotics* –(Mupirocin ointment) (Bactroban) These agents pose fewer potential problems than systemic antibiotics, but their use is reserved only for cases involving lesions that are small or few in number.
- *In most cases, Systemic antibiotics* are indicated – Cephalexin (Keflex), if MRSA suspected then doxycycline, clindamycin or TM-SMZ (Bactrim).
- **(older generation) Quinolones have poor activity against streptococci.**

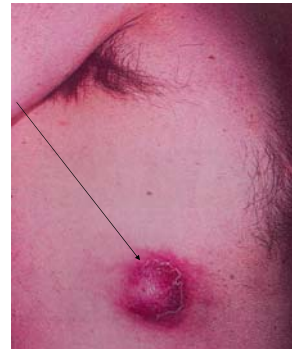
## Impetigo

- Recurrent impetigo is associated with nasal carriage of *S aureus*
  - Treatment: rifampin 600mg orally QD or intranasal mupirocin for 5 days
- Crusts and weepy areas may be treated with compresses ( washcloths and towels must be segregated and washed separately)

## Furuncle

- Furuncles are very common. They are caused by staphylococcus bacteria, which are normally found on the skin surface. Damage to the hair follicle allows these bacteria to enter deeper into the tissues of the follicle and the subcutaneous tissue. Furuncles may occur in the hair follicles anywhere on the body, but they are most common on the face, neck, armpit, buttocks, and thighs.

## Furuncle



## Furuncle

- Small firm tender red nodule in skin (early)
- Later becomes fluctuant nodule (being movable and compressible ); Tender, mildly to moderately painful; May be single or multiple; Swollen; Pink or red; May grow rapidly
- May develop white or yellow centers (pustules) May weep, ooze, crust
- May join together or spread to other skin areas
- Increasing pain as pus and dead tissue fills the area
- Decreasing pain as the area drains
- Skin redness or inflammation around the lesion

## Treatment

- Furuncles may heal on their own after an initial period of itching and mild pain. More often, they progress to pustules that increase in discomfort as pus collects. They finally burst, drain, and then heal spontaneously.
- Furuncles usually must drain before they will heal. This most often occurs in less than 2 weeks.
- Warm moist compresses encourage furuncles to drain, which speeds healing. Gently soak the area with a warm, moist cloth several times each day. Deep or large lesions may need to be drained surgically.
- Meticulous hygiene is vital to prevent the spread of infection.



## Folliculitis

- Folliculitis is an inflammation of the hair follicles caused by infection (MSSA but increasing number of MRSA infections noted), physical or chemical irritation. The most common form of superficial folliculitis is idiopathic.
- Folliculitis is the result of obstruction or disruption of individual hair follicles and the associated pilosebaceous units.

## Folliculitis

- A patient with mild folliculitis complains of gradually evolving red bumps in the hair-bearing areas that may be painless or cause mild discomfort or pruritus.



## Treatment of folliculitis

- Treatment with topical and oral antibiotics is empiric.
  - Control blood glucose in diabetes
  - Wash with antibacterial soaps (eg, Dial soap, Betadine skin cleanser, Hibiclens wash) to prevent or control mild cases of folliculitis.
  - Utilize wash clothes to gently debride skin
  - Water in hot tubs and spas should be treated properly with chlorine

## Treatment of folliculitis

- Systemic antibiotics with coverage of MRSA
- Hot tub pseudomonas folliculitis (usually resolves without treatment) but may be treated with ciprofloxin
- Gram-negative folliculitis in acne patients may be treated with isotretinoin
- Folliculitis with *M furfur* (yeast) is treated with topical 2.5% selenium sulfide or oral ketoconazole
- Eosinophilic folliculitis may be treated with a combination of topical corticosteroids and oral antihistamines.

## “Whirlpool” Folliculitis

- “Whirlpool or hot tub folliculitis”: organism most likely *Pseudomonas*.

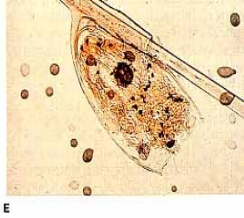


## Pediculosis

- Infestation with lice is referred to as pediculosis. Lice are ectoparasites that live on the body. The 3 types of lice that parasitize humans are *Pediculus humanus capitis* (head louse), *Pediculus humanus corporis* (body louse), and *Phthirus pubis* (pubic louse).
- The disease is spread from person to person by close physical contact or through fomites (eg, combs, clothes, hats, linens). Overcrowding encourages the spread of lice. The body louse is the vector of typhus, trench fever, and relapsing fever.

## Human Body Louse

- **In the US:** Pediculosis affects 6-12 million people annually. *P. capitis* is common among school children. Head lice are very rare among American blacks.



- *P. capitis*
  - Head lice are found most often on the back of the head and neck and behind the ears.
  - Eyelashes may be involved.
- *P. corporis*
  - Adult lice and nits are found in clothing seams.
  - Uninfected bites present as erythematous papules, 2-4 mm in diameter, with an erythematous base.
- *P. pubis*
  - Pubic hair is the most common site.
  - Pubic lice may spread to hair around the anus, abdomen, axillae, and chest.

## Treatment

- Nits are best removed with a very fine comb.
- Soaking the hair in a solution of equal parts water and white vinegar and then wrapping the wet scalp in a towel for at least 15 minutes may facilitate removal.
- Treat all family members.
- Discard infested clothing or wash in very hot water.
- Eyelash infestation can be treated effectively with petrolatum ointment (eg, Vaseline).

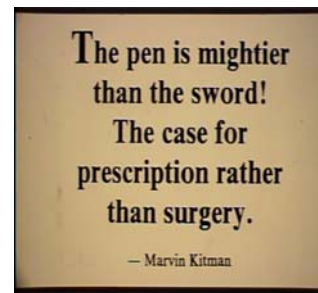
## Pharmacologic Treatment

- Permethrin 5% (Elimite) or 1% (Nix) lotion -- DOC, especially for infants >2 mo and small children. Even after successful treatment, postscabietic nodules and pruritus may persist for mo.
- Lindane 1% shampoo (Kwell) -- Stimulates nervous system of parasite, causing seizures and death. Second-line treatment if other agents fail or are not tolerated. Not very safe in children due to transcutaneous absorption leading to neurotoxicity
- Pyrethrin/Piperonyl butoxide shampoo (RID Mousse, RID Shampoo, A-200) -- Treatment of *P. humanus* infestations. Stimulates nervous system, causing seizures and death of parasite

## Newest Medication

- On April 9, 2009, the FDA approved Benzy! Alcohol 5% lotion for the treatment of head lice infestation in patients 6 months and older. The lotion has no neurotoxic side effects and is the first prescription medication to kill head lice through asphyxiation.
- Two, 10 minute treatments, applied 1 week apart (second application is to kill the eggs that hatch-out after the initial therapy).

## Stay-Tuned for Part II Non-Infectious Dermatology



## Contact Information

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## Clinical Dermatology Part II Non-Infectious Dermatology

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## Objectives

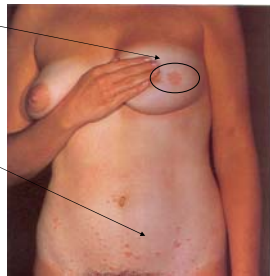
- At the end of the lecture the participant should be able to:
  - Describe the etiology, signs and symptoms and differential diagnosis of common non-infectious skin diseases.
  - Describe the laboratory / special studies evaluation, treatment and prognosis of common non-infectious skin diseases.

## Non-Infectious Dermatitis

- Pityriasis Rosea
- Rosacea
- Hidradenitis Suppurativa
- Dyshidrosis
- Hyperhidrosis
- Miliaria
- Atopic Dermatitis
- Urticaria
- Seborrheic Dermatitis
- Lichen Simplex Chronicus
- Seborrheic Keratosis
- Actinic Keratosis
- Squamous Cell Carcinoma
- Basal Cell Carcinoma

## Pityriasis Rosea

- Herald patch precedes eruption by 1-2 weeks
- Oval, fawn-colored, scaly eruption following cleavage lines of trunk (so-called "Christmas Tree Pattern")
- Common, mild, acute inflammatory disease.



## Pityriasis Rosea

- Differential diagnosis: syphilis; tinea corporis, seborrheic dermatitis, viral exanthems and drug eruptions.
- Treatment: symptomatic and may include antihistamines, topical steroids, and oral erythromycin
- Prognosis: self-limiting; disappears in 6 weeks



## Rosacea

- Rosacea, or acne rosacea, is a skin disorder leading to redness and pimples on the nose, forehead, cheekbones, and chin.
- Rosacea is most common in white women between the ages of 30 and 60.
- When it occurs in men, it tends to be more severe and may eventually cause the nose to become red and enlarged (rhinophyma).



## Treatment

- Treatment includes avoidance of anything that makes one flush and known precipitants of flare-ups. Overheating - whether due to direct sun, excess clothing, or hot foods - is uniformly a problem. Avoid hot showers, saunas, excessively warm environments, and extremes of weather (strong winds, cold, humidity).
- The most effective treatments are oral tetracycline (or similar antibiotics) and low-dose oral Accutane. Mild cases can be controlled by gels or creams such as a Metrogel, Cleocin-T, Azelex, or sulfa.

## Hidradenitis Suppurativa

- Hidradenitis suppurativa is an annoying chronic condition characterized by swollen, painful, inflamed lesions in the axillae, groin, and other parts of the body that contain apocrine glands.
- The condition occurs when apocrine gland outlets become blocked by perspiration or are unable to drain normally because of incomplete gland development.

## Hidradenitis Suppurativa

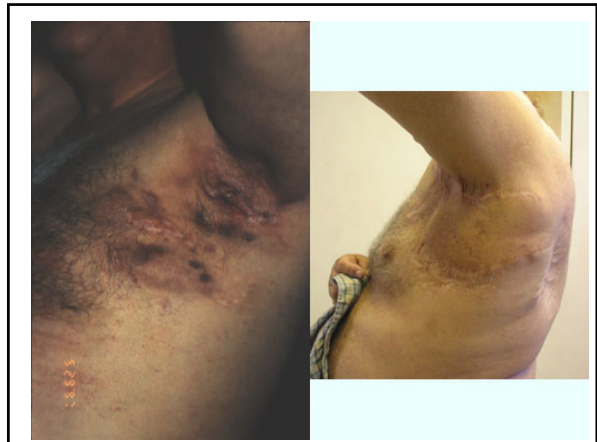


## Hidradenitis Suppurativa

- The patient may present in considerable pain, with multiple red, hard, raised nodules in areas where apocrine glands are concentrated.
- The patient may present with a chronic condition in which the multiple nodules have coalesced and are surrounded by a fibrous reaction. This results in scarred and unsightly appearance of the area.
- Hidradenitis suppurativa may resemble recurrent bacterial folliculitis and furunculosis.

## Hidradenitis Suppurativa

- Excessive perspiration, often observed in athletes and the obese, may contribute to clogging of the apocrine glands.
- Disease activity may be related to stress.
- Hidradenitis may be observed as a primary condition without any obvious cause, but it is more commonly observed in association with the following conditions:
  - Crohn disease; Irritable bowel syndrome; Down syndrome; Certain forms of arthritis; Graves disease or Hashimoto thyroiditis; Sjögren syndrome; Herpes simplex



## Lab Studies

- Culture any exudate obtained (if aspiration or drainage of larger nodules is necessary)
- Thyroid function studies may be useful if clinically indicated because an association with Graves disease or Hashimoto thyroiditis may occasionally occur.
- If a patient appears toxic or is febrile, laboratory tests should include the following:
  - CBC, Blood cultures, Culture of exudate, Routine chemistries

## Hidradenitis Suppurativa

- The nodules of hidradenitis suppurativa should be drained if they are very large, fluctuant, and painful.
- Antibiotics are indicated if cellulitis or fever is present, and admission should be considered if the patient appears toxic.



## Treatment

- Tetracycline and erythromycin may be helpful on a long-term basis, and cephalosporins often will help in acute cellulitis.
- Consideration must be given to using a sulfonamide or clindamycin antibiotic because of the growing presence of methicillin-resistant staphylococcus aureus (MRSA) in both short-term and long-term treatment.

## Treatment

- Topical products, such as benzoyl peroxide, may be helpful. Retin-A has been found to be helpful in some patients.
- Accutane can reduce the severity of attacks in some patients but is not a reliable cure for hidradenitis

## Dyshidrosis (dyshidrotic eczema)

- Tapioca vesicles of 1-2 mm on the palms, soles and sides of fingers, associated with pruritis.
- Vesicles may coalesce to form multiloculated blisters.
- Scaling and fissuring may follow drying of the blisters.
- Differential diagnosis includes fungal infections.



## Dyshidrosis

- Treatment:
  - Topical and systemic corticosteroids
  - Avoid anything that irritates the skin
  - PUVA therapy and injection of botulinum toxin into the palms as for hyperhidrosis
- Prognosis:
  - The disease is an inconvenience.
  - Vesiculo-bullous hand eczema can be incapacitating.

## Hyperhidrosis

- The production of perspiration beyond what is necessary to cool the body.
- The process of sweating is controlled by the Sympathetic Nervous System. This involuntary nervous system maintains the five million or so sweat glands throughout the body. In fact, about two-thirds of our body's sweat glands are located in the hands alone. The answer to the problem of hyperhidrosis lies within these nerves. Research has found that "supercharged" nerves cause excessive sweating.



## Treatment

- Topical (Prescription antiperspirants)
  - aluminum hexahydrate in alcohol
  - tannic acid solution
  - formalin solution
  - glutaraldehyde solution
- Oral medications include:
  - Tranquilizers, Anticholinergics, NSAIDs, Calcium channel blockers, Catapres

## Treatment

- **Iontophoresis.** This FDA-approved procedure uses electricity to temporarily turn off the sweat gland. It is most effective for sweating of the hands and feet. The hands or feet are placed into water, and then a gentle current of electricity is passed through it. The electricity is gradually increased until the patient feels a light tingling sensation. The therapy lasts about 10-20 minutes and requires several sessions.
- **Botulinum toxin (Botox)**  
Researchers have discovered that Botox injections also effectively treat hyperhidrosis by blocking the nerves that trigger the sweat glands.
  - (the results only last from four months to a year)

## Surgical Treatment

- **Endoscopic thoracic sympathectomy (ETS).** In severe cases, a minimally-invasive surgical procedure called sympathectomy may be recommended when other treatments fail. The procedure turns off the signal that tells the body to sweat excessively. It is usually done on patients whose palms sweat much more heavily than normal. It may also be used to treat extreme sweating of the face. ETS does not work as well for those with excessive armpit sweating.

## Miliaria (heat rash)

- Miliaria crystallina is a common condition that occurs in neonates, with a peak in those aged 1 week, and in individuals who are febrile or those who recently moved to a hot, humid climate.
- Miliaria rubra also is common in infants and adults who move to a tropical environment; this form occurs in as many as 30% of persons exposed to such conditions.

## Miliaria crystallina



FIGURE 86.—Miliaria rubra.

## Prevention and Treatment

- The prevention and treatment of miliaria primarily consists of controlling heat and humidity so that sweating is not stimulated. Measures may involve treating a febrile illness; removing occlusive clothing; limiting activity; providing air conditioning; or, as a last resort, having the patient move to a cooler climate.

## Treatment

- Topical treatments that have been advocated involve
  - lotions containing calamine, boric acid, or menthol;
  - cool wet-to-dry compresses;
  - frequent showering with soap (although some discourage excessive use of soap);
  - topical corticosteroids; and topical antibiotics.

## Atopic Dermatitis (eczema)

- Pruritic, exudative or lichenified eruption on face, neck, upper trunk, wrists and hands and in the antecubital and popliteal folds.
- Personal or family history of allergic manifestations
- Tendency to recur
- Itching may be severe and prolonged.
- Eosinophilia and increased serum IgE levels are non-specific.



## Atopic Dermatitis (eczema)

- Differential diagnosis: contact dermatitis, impetigo, and seborrheic dermatitis.
- Treatment: Prevention
  - Increase moisture
  - Decrease drying
  - Avoid heat (hot baths, sweating)
  - Liberal use of Emollients
  - Avoid washcloths and brushes
  - Soft fabrics



## Atopic Dermatitis (eczema)

- Treatment: systemic
  - Corticosteroids are indicated for severe acute exacerbations
- Complications
  - Eczema herpeticum (generalized HSV)
  - SMALLPOX VACCINATION is contraindicated !!!
- Prognosis
  - Poor prognostic factors for persistence into adulthood include onset early in childhood, early generalized disease and asthma

## Urticaria



- Urticaria, commonly known as hives, is a frequent complaint of patients in the ED. It consists of circumscribed areas of raised erythema and edema of the superficial dermis. Urticaria can be acute or chronic.

## Urticaria

- Urticaria occurs following release of histamine, bradykinin, kallikrein, or acetylcholine, resulting in intradermal edema from capillary and venous vasodilation and occasional leukocyte infiltration.
- Urticaria has 3 major mechanisms. Most commonly, it is a manifestation of acute immunoglobulin E (IgE)-mediated hypersensitivity with histamine released from mast cells as its primary mediator. It also may be a result of complement-mediated reactions or specific drug reactions.
- Urticaria also may be idiopathic.





## Etiologies of Urticaria

- The cause of acute generalized urticaria often is undetermined, but it may be related to the following:
  - Infections (eg, pharyngitis, GI infections, genitourinary infections, respiratory infections, fungal infections [eg, dermatophytosis], malaria, amebiasis, hepatitis, mononucleosis, coxsackievirus, mycoplasmal infections, infestations [eg, scabies], HIV, parasitic infections [eg, ascariasis, strongyloidiasis, schistosomiasis, trichinosis])

## Etiologies of Urticaria

- Foods (particularly shellfish, fish, eggs, cheese, chocolate, nuts, berries, tomatoes)
- Drugs (eg, penicillins, sulfonamides, salicylates, NSAIDS, codeine); Environmental factors (eg, pollens, chemicals, plants, danders, dust, mold)
- Exposure to latex; exposure to cold or heat; Emotional stress; Exercise

## Laboratory tests to consider

- Stool examination for fecal WBCs, ova, and parasites
- Antinuclear antibody (ANA) titer
- Hepatitis B and C screen
- Thyroid function tests
- Tests for CBC, prostate-specific antigens (PSA), and serum calcium, or other tests directed at the diagnosis of neoplasm

## Management

- Antihistamines, primarily those working on H1 receptors, are the first line of therapy for urticaria.
  - Diphenhydramine and hydroxyzine are the most commonly used antihistamines. Hydroxyzine is considered superior to diphenhydramine. These medications are potentially sedating. Therefore, one may want to consider one of the newer non-sedating H1 blockers as first-line therapy in certain patient populations.

## Management

- H1 antihistamines are effective in relieving the pruritus and rash of acute urticaria in most cases.
- Newer H1 non-sedating antihistamines are now available and include astemizole, loratadine, desloratadine, doxepin, cyproheptadine, and cetirizine.
- These may have a more dominant role in the management of chronic urticaria.

## Management

- H2 antihistamines, such as cimetidine, famotidine, and ranitidine, may have a role when used in combination with H1 antihistamines in selected instances of urticaria. H1 and H2 antihistamines are thought to have a synergistic effect.
- Glucocorticoids stabilize mast cell membranes and inhibit further histamine release. They also reduce the inflammatory effect of histamine and other mediators.
  - The use of glucocorticoids in acute urticaria remains somewhat controversial. It generally is recommended in more severe and refractory cases.

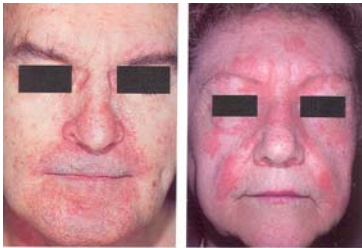
## Management

- Epinephrine may be used in conjunction with antihistamines when deemed appropriate. Epinephrine's alpha-adrenergic effects result in vasoconstriction of the superficial cutaneous vessels and directly oppose the vasodilatory effect of histamine. Epinephrine has no effect on pruritus.

## Seborrheic Dermatitis

- Seborrheic dermatitis is a papulosquamous disorder patterned on the sebum-rich areas of the scalp, face, and trunk. In addition to sebum, this dermatitis is linked to, immunologic abnormalities, and activation of complement. It is commonly aggravated by changes in humidity, changes in seasons, trauma (eg, scratching), or emotional stress.

## Seborrheic Dermatitis



## Seborrheic Dermatitis

- Scalp appearance varies from mild, patchy scaling to widespread, thick, adherent crusts. Plaques are rare. From the scalp, seborrheic dermatitis can spread onto the forehead, the posterior part of the neck, and the postauricular skin, as in psoriasis.
- Skin lesions manifest as branny or greasy scaling over red, inflamed skin. Hypopigmentation is seen in blacks. Infectious eczematoid dermatitis, with oozing and crusting, suggests secondary infection.
- A skin biopsy may be needed in persons with exfoliative erythroderma, and a fungal culture can be used to rule out tinea capitis

## Seborrheic Blepharitis

- A seborrheic blepharitis may occur independently.



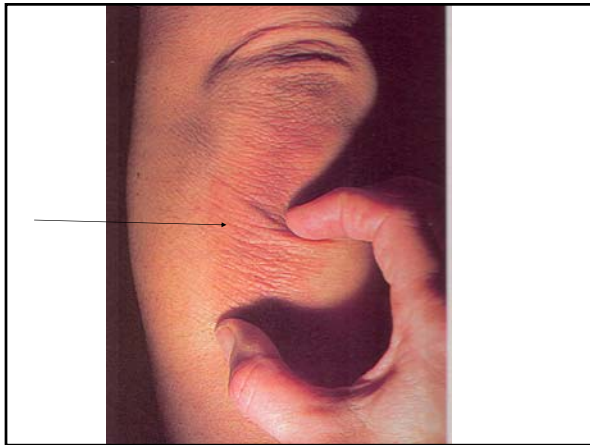
## Treatment

- Topical corticosteroids may hasten recurrences, however, they may foster dependence because of a rebound effect, and are discouraged except for short-term use.
- Skin involvement responds to ketoconazole, naftifine, or ciclopirox creams and gels.
- Alternatives include calcineurin inhibitors (Elidel (pimecrolimus), Protopic (tacrolimus)), sulfur or sulfonamide combinations, or propylene glycol.
- Class IV or lower corticosteroid creams, lotions, or solutions can be used for acute flares.
- Systemic ketoconazole or fluconazole may help if seborrheic dermatitis is severe or unresponsive.

- Dandruff responds to more frequent shampooing or a longer period of lathering. Use of hair spray or hair pomades should be stopped.
- Shampoos containing salicylic acid, tar, selenium, sulfur, or zinc are effective and may be used in an alternating schedule.
- Overnight occlusion of tar, bath oil, or Baker's P&S solution may help to soften thick scalp plaques.
- Selenium sulfide (2.5%), ketoconazole, and ciclopirox shampoos may help by reducing yeast scalp reservoirs.
- Shampoos may be used on truncal lesions or in beards but may cause inflammation in the facial areas.

## Lichen Simplex Chronicus

- Self-perpetuating scratch-itch cycle.
- Lichenified lesions with exaggerated skin lines overlying a thickened, well-circumscribed scaly plaque.
- Predisposition for nape of neck, wrists, external surfaces of forearms, lower legs, scrotum and vulva.
- Dry, leathery, hypertrophic, plaques.



## Lichen Simplex Chronicus

- Treatment for extra-genital areas: steroids, use of tars, occlusive flexible hydrocolloid dressings ( 7 days at a time).
- The disease tends to remit during treatment but may recur or develop at another site.
- Stop scratching!



## Treatment

- The use of tretinoin (*trans*-retinoic-acid) can be effective as monotherapy.
- Depigmenting agent: Hydroquinone USP 4% (Claripel cream with sunscreens)
- Antibiotic agent: Azelaic acid (Azelex)
- All wavelengths of sunlight, including the visible spectrum, are capable of inducing melasma.
- Regardless of the treatments used, all will fail if sunlight is not strictly avoided.

## Seborrheic Keratosis

- Benign plaques, beige to brown or even black, with a velvety or warty surface.
- Common, especially in the elderly, and may be mistaken for melanoma or other neoplasms.
- Treatment: liquid nitrogen or curetted; usually require no tx.



Seborrheic keratosis: A lesion with a shiny, "greasy" appearance.

## Actinic Keratosis

- Common, persistent, keratotic lesions with malignant potential.
- It is estimated that one in five patients with multiple actinic keratoses develops squamous cell carcinoma in one or more lesions.
- Lesions become progressively more common after age 40



## Treatment

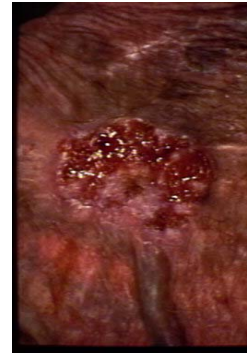
- Liquid nitrogen is a rapid and effective method of eradication
- Alternative treatment with 5-fluorouracil (5-FU) cream rubbed into the lesions morning and night until they crust and erode (usually 2-3 weeks).
- Any lesion that persists should be evaluated for biopsy.
- Biopsy is helpful for distinguishing advanced actinic keratoses from invasive squamous cell carcinoma.

## Actinic Keratosis



## Squamous Cell Carcinoma

- Squamous Cell Carcinoma: usually occurs subsequent to prolonged sun exposure on exposed parts in fair-skinned persons with prominent sun exposure history.
- May arise from an actinic keratosis



## Squamous Cell Carcinoma

- Treatment of primary squamous cell carcinoma of the skin involves wide local excision with histologic confirmation of margins
- Mohs' micrographic excision may be useful for specific sites where tissue sparing is of importance
- Palpation of regional lymph nodes is mandatory for all invasive squamous cell carcinomas
- Careful follow-up at regular intervals is recommended.

## Basal Cell Carcinoma

- Basal Cell Carcinoma is a primary cutaneous malignancy. It is locally destructive, slow growing and relentless.
- It occurs more commonly in persons >40 and it is less common among Asian-Americans and rare in African-Americans.



## Basal Cell Carcinoma

- Without treatment, basal cell carcinomas persist, enlarge and invade and destroy the surrounding structures.
- Basal cell carcinomas are rarely, if ever, life threatening; metastases virtually never occurs.
- The treatment is determined by the size and site. Electrosurgery involves electrodesiccation and curettage; excision is the preferred method; Mohs' surgery is used for difficult tumors.

**Laughter is a  
tranquilizer with  
no side effects.**

— Arnold Glasow

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