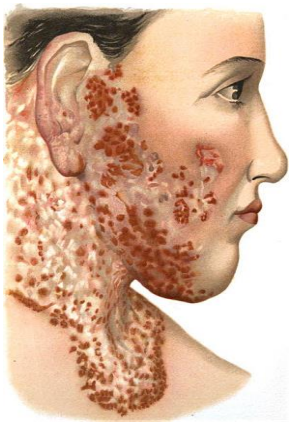
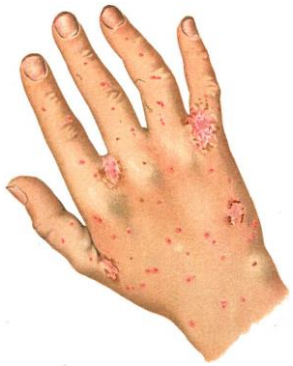
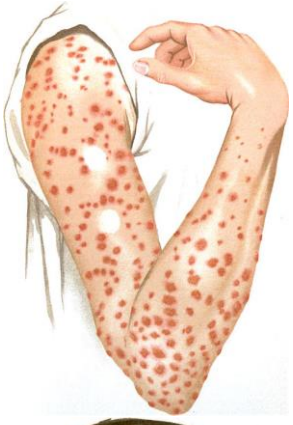
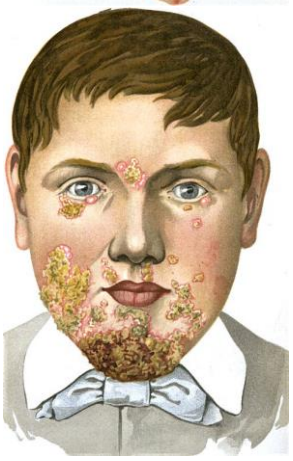
Structure and Function of the Skin



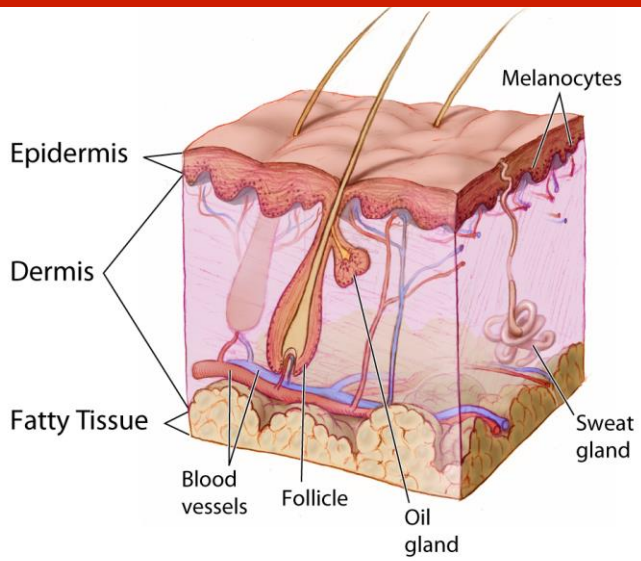






432 Teams

Dermatology



Dermatologic Emergencies

Done by: ***Abdullah bin Saeed***
Reviewer: ***Basil AlSuwaine***
Team Leader: ***Basil AlSuwaine***

Objectives

- Not given ☹

Red: Very Important
Black: Slides + 431 teams
Green: Explanations.
Purper: from book

Dermatological Emergencies

Emergency:

Acute, unexpected, dangerous and requires quick action.

Alarming morphological patterns:

Urticaria/Angioderma
Purpura/ Echymosis
Bullae/Sloughing
Necrosis /Gangrene
Exfoliative Erythroderma Syndrome
Generalized/ widespread rashes in the acutely ill febrile patient

Urticaria/Angioderma

Transient swellings and erythema due to vasodilatation and fluid exudation.

Angioedema:

- Deeper swelling of the skin involving subcutaneous tissues; often involves the eyes, lips, and tongue.

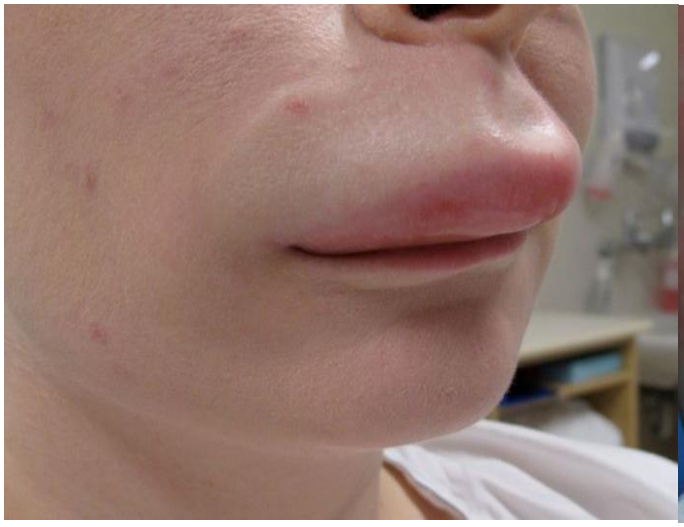
Urticaria: also known as "hives",

- Transient, red, pruritic well-demarcated wheals.

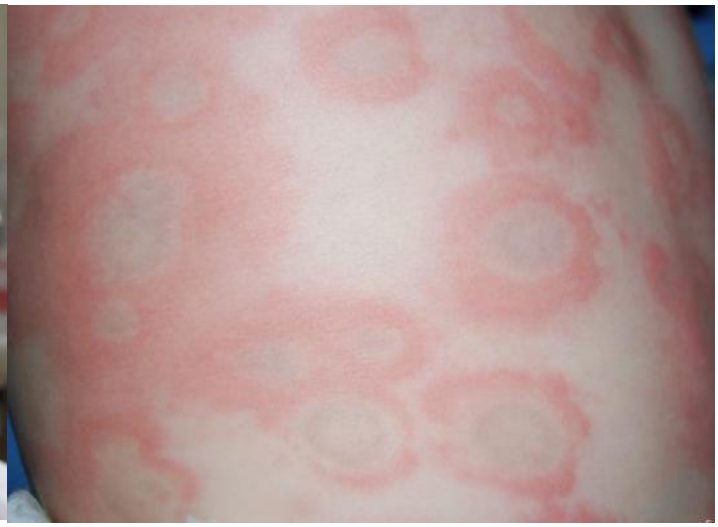
- Results from release of histamine from mast cells in dermis.
- Manifest by wheals that develop rapidly and clear within hours.
- Can be life threatening especially when associated with angioedema of the larynx.
- May take years to resolve.

Dermatographism:

Hives that form after firmly stroking or scratching the skin.



Angioedema



Urticaria

Dermatographism

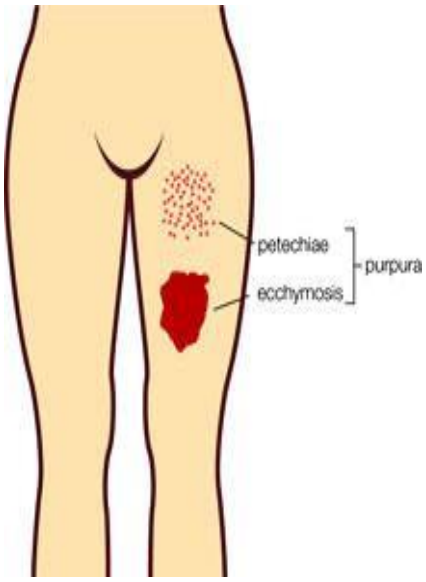
Purpura

Extravasation of blood into dermis resulting in hemorrhagic lesions; non-blanchable (petechiae, purpura, Echymoses)

Petechiae: Small pinpoint purpura, <3 mm in size

Purpura: 3 mm-1 cm in size

Ecchymoses: Larger flat purpura, >1 cm in size

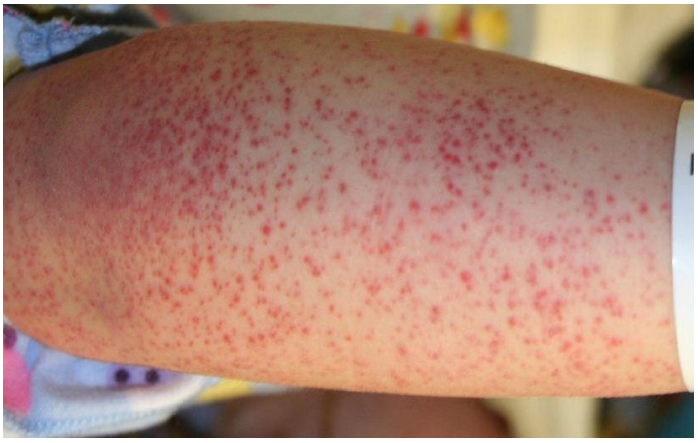


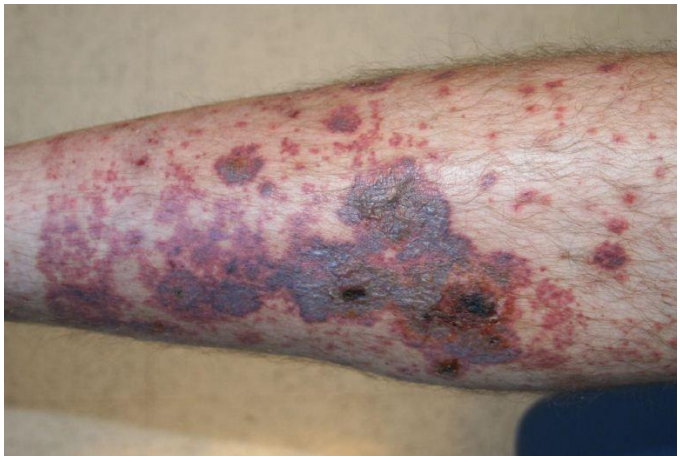
Pathophysiology:

Inside the blood vessel (disorders of coagulation)

Blood vessel walls (Vasculitis)

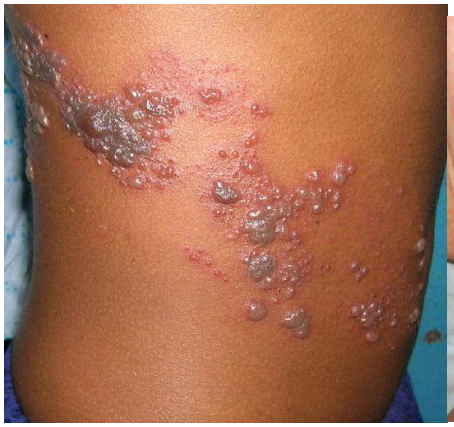
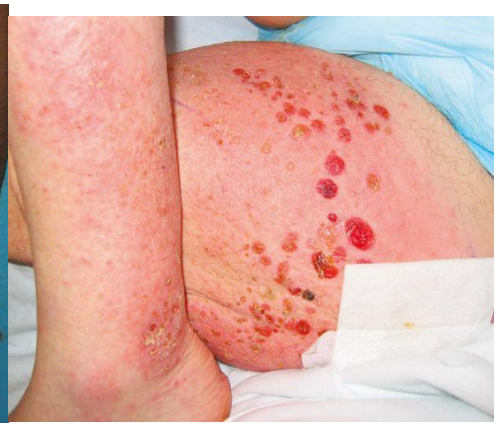
Outside the blood vessels (affecting supporting stroma, eg: aging, drugs, Vit C deficiency, amyloidosis)





Bollous Diseases

- Blisters are circumscribed fluid filled skin lesions.
- Burns, bullous impetigo, herpes simplex and zoster, severe contact dermatitis and insect bites are common examples.
- Skin diseases presenting mainly with blisters are relatively rare but may be fatal eg: autoimmune and mechanobullous diseases.

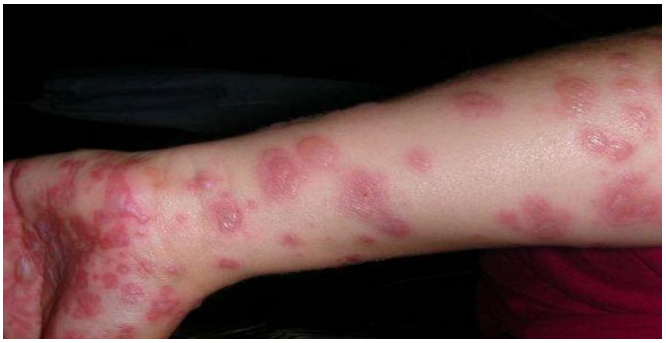
Erythema Multiforme (EM) – Stevens Johnson Syndrome (SJS) – Toxic Epidermal Necrolysis (TEN) Spectrum

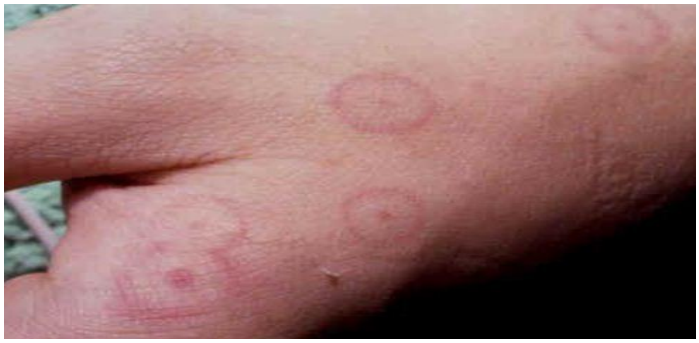
Erythema Multiforme (EM)

- A cutaneous reaction pattern to several provoking stimuli including

herpes simplex, bacterial infection and drugs.

- May be idiopathic.
- The target (iris-like) lesions involve the hands and feet and less frequently the elbows and knees.
- SJS and TEN are severe variants of an identical pathologic process (apoptosis of kerayinocytes induced by a cell-mediated cytotoxic reaction: Haptens vs Cytokines) and differ only in the percentage of body surface involved, 30% is the cut off.
- Both can start with macular and EM-like lesions; however, about 50% of TEN evolve from diffuse erythema to necrosis and epidermal detachment.





- Rare and life threatening.
- Most common in adults more than 40 years
- Male =Female
- Risk factors : SLE, HIV, HLA –B12

Etiology:

- Drugs (sulfas, anticonvulsants, allopurinol, NSAIDS, antibiotics), infections, immunization, chemicals and idiopathic.

Signs & Symptoms:

- Usually start with prodromes: fever, malaise, arthralgias 1-3 weeks after drug exposure and 1-3 days before mucocutaneous lesions.

- There may be tenderness, itching, burning, pain or parasthesia, photophobia, painful micturition, impaired alimentation and anxiety. The hallmark is sloughing of the skin and mucous membrane
- Rash starts on face and extremities, may generalize rapidly (few hours/days). Scalp, palms, and soles may be spared but it can be involved in some cases.
- Mucous membranes invariably involved, 85% have conjunctival lesions "Should prevent blindness "
- **Evolve later to:**
    - Confluent erythematous macules with crinkled surface
    - Raised flaccid blisters
    - Sheet like loss of epidermis
    - Red, oozing dermis resembling second-degree burn

Histopathology:

- Full thickness necrosis of the epidermis and a sparse lymphocytic infiltrate.

Systemic Involvement:

- Respiratory, GIT, Renal, CV, Anaemia, Lymphopenia, Neutropenia, Eosinophilia

Sequelae:

- Scarring, dyspigmentation, eruptive melanocytic nevi, abnormal nails, phimosis, vaginal synechiae, entropion, trichiasis, sicca syndrome, keratitis and corneal scarring, neovascularization, synblepharon, persistent photophobia, blindness.

Mortality: □□

- 30% for TEN □□
- 5 -10% for SJS □□

- Due to sepsis, GI hemorrhage and fluid/ electrolyte imbalance.
- Re exposure more rapid recurrence and more severe.

Differential Dx:

- Exanthematous drug eruption, phototoxic eruptions, GVHD, Toxic shock syndrome, burns, SSSS, generalized bullous fixed drug eruption, exfoliative dermatitis.

Management:

- Withdrawal of suspected drug(s) - in ICU or burn unit - IV fluids and electrolytes as for a third degree burn.
- Symptomatic treatment: - IV glucocorticoids, immunoglobulins, pentoxifylline
- Treat eye lesions early (refer to ophth)
- No surgical debridement {may induce bleeding}

Prognosis:

- Recovery begins within days, completed in 3 weeks.
- Pressure points and periorificial sites take longer
- Nails and eyelashes may be shed.

Bad prognostic factors:

- Body surface area > 10%
- Serum Urea >10mm
- Age > 40 years
- Heart rate >120
- Serum glucose > 14mm

- Serum Bicarbonate <20mm
- Malignancy

EXFOLIATIVE ERYTHRODERMA SYNDROME (EES)

It is a serious, at times life-threatening reaction pattern of the skin characterized by:

- generalized and uniform redness
- scaling (branny/ lamellar)
- fever, malaise, shivers, pruritis,
- fatigue anorexia and generalized lymphadenopathy
- loss of scalp and body hair, nail thickening and onycholysis
- Usually > 50 years
- Male > Female
- In children results from atopic dermatitis or PRP

Etiology:

50% - Pre existing dermatosis (psoriasis, eczema, PRP, Pf)

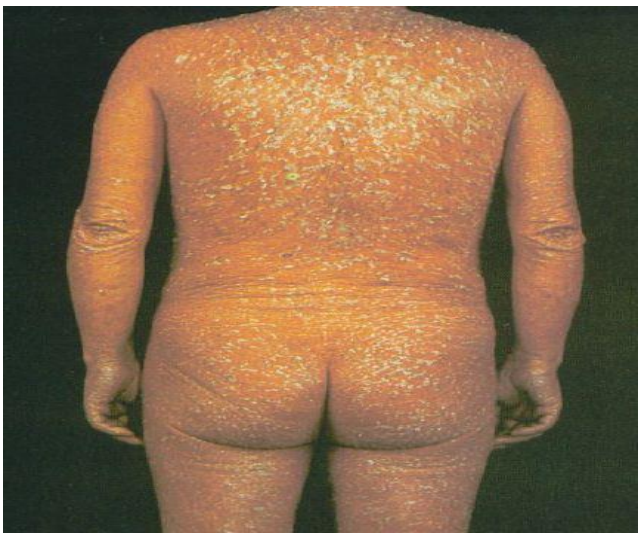
15% - Drugs: - Allopurinol (for gout), carbamazepine, cimetidine, gold, lithium, quinidine, CCB

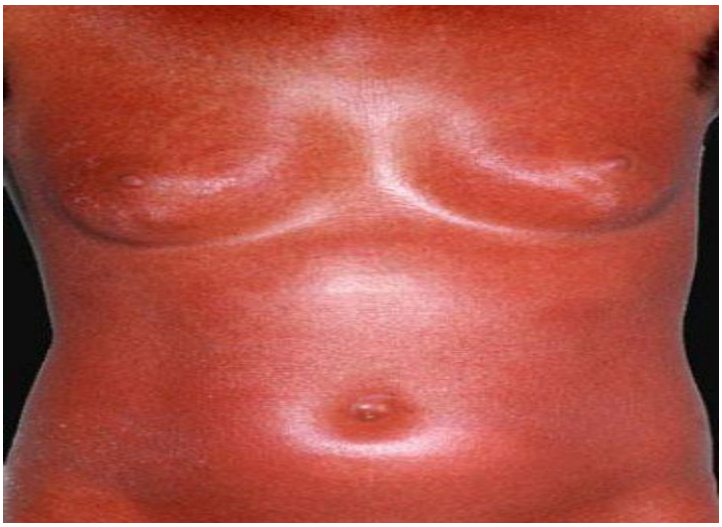
10% - Lymphoma, Leukemia

25% - Undetermined (history/histology)

- Acute erythroderma is caused by drugs and is potentially fatal
- Erythroderma has profound effects on the entire body. eg:

poikilothermia, fluid and electrolyte imbalance, high output cardiac failure, increased basal metabolic rate, hypoproteinemia, anemia due to reduced levels of iron, folic acid and other vitamins, endocrine, hepatic and renal complications, effects on hair and nails.





Clinical clues about etiology:

PRP = Pityriasis rubra pilaris
CTCL = Cutaneous T cell lymphoma

- Acute: drugs
- Areas of sparing: PRP
- Massive hyperkeratosis and deep fissures of palms/soles: Psoriasis, CTCL, PRP
- Sparing of scalp hair: Psoriasis, Eczema
- Variable erythema and scale thickness/ brownish hue/ large lymphnodes: CTCL
- Massive scaling of scalp with hair loss: CTCL, PRP
- DuskyRed: Psoriasis
- Yellow/orange –red: PRP
- Lichenification/erosions/excoriations: Eczema
- Typical nail changes of psoriasis
- Ectropion: CTCL, PRP

Management:

- Histopathology is not always helpful
- History and physical examination for clues are important
- Chest X ray, immunoelectrophoresis, CT scans/ MRI and bone marrow aspiration
- Lymphnodes biopsy
- Skin and blood bacterial cultures

Treatment:

- Supportive, including fluid electrolytes and albumin restoration, parenteral nutrition and temperature control.
- Be aware of signs of sepsis, renal and cardiac failure.
- Watch for deleterious adverse effects of prolonged glucocorticoid therapy.

- **Topical:**
    - Waterbaths
    - Bland emollients ± topical steroids.
    - Beware of ↑ absorption of topically applied medications eg: salicylism, methaemoglobinemia.
    - Be cautious of irritant topical eg: dithranol, tar
- **Systemic:**
    - Oral glucocorticoids for remission induction but not for maintenance. Specific Systemic therapy for the underlying condition.

Questions

Angioedema Can be life threatening especially when associated with**:**

a) generalized lymphadenopathy
b) angioedema of the larynx
c) angioedema of the pharynx
d) fatigue anorexia

All are provoking stimuli of Erythema Multiforme (EM) except?

a) bacterial infection
b) drugs
c) Psoriasis
d) herpes simplex

Acute erythroderma is caused by:

a) bacterial infection
b) drugs
c) Psoriasis
d) herpes simplex

ANS:

1–B 2–C 3–B