

- 1) A 32 year old woman has an irregular reddish spot on her abdomen. The lesion cannot be palpated. This is an example of a
 - a) lichenification
 - b) macule
 - c) nodule
 - d) plaque
 - e) wheal

- 2) An *erosion* is an area of skin where all or part of the epidermis has been lost. What is TRUE about this lesion?
 - a) can be a result of atrophy
 - b) is usually a primary lesion (initial manifestation of a skin disorder)
 - c) typically is the result of IgG antibodies against the basement membrane
 - d) usually heals with scarring
 - e) usually heals without scarring

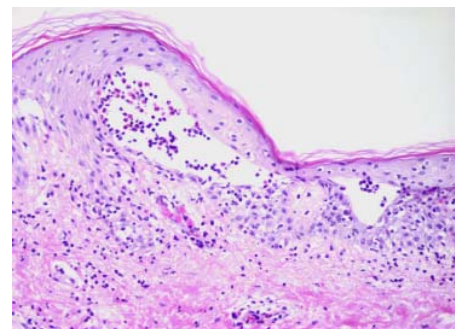
- 3) A 5 year old boy has red, scaly, pruritic plaques in the flexor creases of his elbows and knees. He has no other medical problems, but his older sister has asthma. What microbe is MOST LIKELY to be involved, directly or indirectly?
 - a) double-stranded DNA virus
 - b) gram-negative rod with a green pigment
 - c) gram-positive coccus in clusters
 - d) gram-positive diplococcus
 - e) single-stranded RNA virus

- 4) You learn that the boy in question 3 has had these plaques for several months. What would they look like under the microscope?
 - a) significant epidermal hyperplasia, parakeratosis, hardly any spongiosis
 - b) some hyperplasia, some spongiosis
 - c) spongiosis and eosinophilia
 - d) spongiosis in dermis, vesicles and lymphocytes in epidermis
 - e) spongiosis in epidermis, vesicles and lymphocytes in dermis

- 5) What is LEAST likely to be involved in the pathogenesis of atopic dermatitis?
 - a) A type of hypersensitivity similar to a bee-sting anaphylaxis
 - b) A type of hypersensitivity similar to a peanut allergy
 - c) A type of hypersensitivity similar to poison ivy
 - d) Defective epidermal barrier
 - e) Hyperresponsive Langerhan's cells

- 6) What is true about contact dermatitis?
 - a) It is mediated by a different type of hypersensitivity reaction as atopic dermatitis, and has a different histopathology
 - b) It is mediated by a different type of hypersensitivity reaction as atopic dermatitis, but has the same histopathology
 - c) It is mediated by the same type of hypersensitivity reaction as atopic dermatitis, but has a different histopathology
 - d) It is mediated by the same type of hypersensitivity reaction as atopic dermatitis, and has the same histopathology

- 7) A four year old girl is brought to the emergency room due to difficulty swallowing. Luckily, her mother attended UMASS Medical School, and she knew that hereditary angioedema ran in the family. The girl's larynx is grossly edematous, and she is intubated. What is the mechanism of this life-threatening disease?
- Constitutively activated C1
 - Constitutively activated C3a and C5a
 - Deficiency in C1
 - Deficiency in C3a and C5a
 - Exquisitely sensitive mast cells
- 8) Which medication is NOT used to treat either urticaria or hereditary angioedema?
- Danazol
 - Diphenhydramine
 - Epinephrine
 - Prednisone
- 9) What is the FIRST step in the pathogenesis of a pimple?
- Accumulation of plates of keratin in the lumen of pilosebaceous follicle
 - Androgen-sensitive stimulation of sebum
 - Hyperplasia of sebaceous gland
 - Infection with *P. acnes* in pilosebaceous follicle
- 10) What is MOST accurate about treatment for acne?
- Isotretinoin (Accutane), while generally unsafe to use during the 3rd trimester of pregnancy, is generally safe during the first few weeks of embryogenesis.
 - Systemic agents that inhibit neutrophils are rarely used in the treatment of acne
 - Tetracyclines are rarely used in the treatment of acne
 - The most important therapeutic step in the pathogenesis of acne is to inhibit *P. acnes*.
 - Tretinoin (Retin-A) causes irreversible squamous metaplasia of sebaceous glands
- 11) Your oddball pathologist friend gives you a slide and asks you if you can guess from what body region it came from. Under the microscope, you can recognize the distinctive shape of a condyloma acuminata. What do you tell your weird friend?
- Cervix
 - Dorsum of hand
 - Oral mucosa
 - Scalp
 - Vagina
- 12) The histopathological pattern shown to the right can be seen in all of the following disorders EXCEPT
- An inflammatory skin condition caused by auto-antibodies against desmoglein
 - An inflammatory skin condition caused by *Pityrosporum ovale* or *Malassezia furfur*
 - An inflammatory skin condition caused primarily by haptens
 - An inflammatory skin condition driven by excessive IL-4
 - Diaper rash





- 13) What is TRUE about the form of psoriasis shown above?
- It has a different histopathology from a variant of psoriasis that involves generalized red and scaly outbreaks
 - The granular layer is generally maintained
 - Triggered by *Pityrosporum ovale*
 - Triggered by *Propionibacterium acnes*
 - Triggered by *S. pyogenes*
- 14) As a budding dermatopathologist, you describe a tissue specimen as having “broken intercellular bridges between keratinocytes.” This is an example of:
- Acantholysis
 - Acanthosis
 - Epidermotropism
 - Exocytosis
 - Spongiosis
- 15) You decide that golf is your true calling, so you become a dermatologist. It is the year 2018, and an old acquaintance of yours from high school visits you during your office hours (Monday through Thursday, 10 am to 2 pm, with a two-hour break for lunch). She was one of those people who was always an off-orange color from induced melanocyte hyperactivity. She complains of a rough, scaly lesion on the back of her neck. She has had the lesion for several months, and it grew back after she tried to scrape it off. Upon looking at the biopsy, you notice hyperkeratosis and atypia of keratinocytes. What does she have?
- A benign lesion that mimics squamous cell carcinoma
 - A lesion that progresses to squamous cell carcinoma more often than not
 - A mutation in the PTC gene
 - Actinic keratosis
 - Keratoacanthoma
- 16) A neonate’s entire skin turns bright red and blistery in just a few hours. Pressing on a blister causes the blister to extend laterally. Where would you have the most success in culturing the causative organism?
- blisters
 - blood
 - pharynx
 - stool
 - urine

- 17) A 54 year old Jewish man from Spain has a blistering disease. Knowing just that little bit of information, what would you wager is TRUE?
- a) \$50 that he's HLA-B27
 - b) \$50 that IgA is the culprit
 - c) \$50 that it can be treated with dapsone
 - d) \$50 that pressing a blister laterally will induce a new blister
 - e) \$50 that the dermis will be completely separated from the epidermis
 - f) I gave up betting
- 18) An 85 year old man has a blistering disease. This disease is DIFFERENT from the man's disease in #17 in every way EXCEPT:
- a) Better prognosis
 - b) Blisters are less tense
 - c) Can try to wait for remission
 - d) Nikolsky's sign is negative
 - e) Split deeper in the epidermis
 - f) The level of circulating antibodies does NOT correlate with disease activity
- 19) A 42 year old former champion surfer has a darkly pigmented, irregular lesion on his shoulder. What is the single most important prognostic factor?
- a) The measurement from the top of the granular layer to the deepest point of invasion
 - b) Host lymphocytic response
 - c) Presence of ulceration
 - d) Number of mitoses/high power field
 - e) Nuclear pleomorphism
- 20) A 41 year old black man is diagnosed with a malignant melanoma. Where would you expect to find the primary lesion?
- a) Above the upper lip
 - b) Chin
 - c) Shoulder
 - d) Arms
 - e) Under a fingernail

ANSWERS

- 1) **B.** A macule is simply a discoloration, it cannot be felt.
- 2) **E.** Erosions heal without scarring since the dermis isn't involved. Note that ulcers heal with scarring since there is loss of at least part of the dermis.
- 3) **C.** The boy has atopic dermatitis (note the family history of allergy). Patients are colonized by *S. aureus* about 90% of the time.
- 4) **A.** The lesions should be at the chronic stage histopathologically since he's had them for several months. Choice B describes the subacute stage (midway between acute and chronic). Choice E represents the acute stage. I just made up the other ones.
- 5) **C.** Atopic dermatitis is a Type I HSR, just like a bee-sting anaphylaxis or peanut allergy. Poison ivy (contact dermatitis) is a Type IV HSR. The pathogenesis of atopic dermatitis is complex, and may involve D and E.
- 6) **B.** Sorry about all the hypersensitivity crap. But I think it's important to know, and wasn't really emphasized in the lecture notes: The *Spongiotic* ("eczematous") dermatitises are atopic dermatitis AND contact dermatitis. Even though the pathogenesis of these two diseases is different, they should look similar under the microscope. They each have acute (edema), subacute (between acute and chronic), and chronic (hyperkeratosis) stages. Also note that seborrheic dermatitis and pityriasis rosea are also spongiotic microscopically.
- 7) **B.** Hereditary angioedema is due to a deficiency in C1 inhibitor, which causes the anaphylotoxins C3a and C5a to be active all the time → ↑ vessel permeability → ↑ problems.
- 8) **D.** Steroids have no role in the therapy of urticaria or hereditary angioedema. Danazol is used to increase C1 inhibitor in hereditary angioedema. Epi is used for laryngeal edema in hereditary angioedema. Antihistamines are generally effective in urticaria.
- 9) **A.** After the lumen of the pilosebaceous follicle is plugged with keratin, then the inflammatory reaction involving *P. acnes*, increased secretion of sebum, and PMN chemotaxis can begin.
- 10) **B.** Isotretinoin is NEVER safe in pregnancy. Neutrophil-inhibiting agents, while theoretically effective, are not used due to their dangerous side effects (immunosuppression, etc). Systemic antibiotics (including tetracycline) are commonly used. The most important therapeutic step is to inhibit microcomedo formation, which is what Tretinoin does. Isotretinoin causes irreversible squamous metaplasia of sebaceous glands, turning off sebum secretion.
- 11) **E.** HPV can cause different looking warts in different parts of the body. On the fingers, the warts are called verruca vulgaris (common wart). Only genital warts are called condylomata acuminata. I don't think (but I'm not entirely sure) that one can get cervical warts from HPV.
- 12) **A.** This is the acute stage of spongiotic ("eczematous") dermatitis. It can be seen in seborrheic dermatitis (B), allergic contact dermatitis (C), irritant contact dermatitis (E), and atopic dermatitis (D). It is not seen in pemphigus vulgaris (A).
- 13) **E.** This is guttate (means "drop-like") psoriasis. If you could only remember one thing about it, know that it's triggered by GAS. All forms of psoriasis have the same histopathology, and all forms lose the granular layer of cells. *P. ovale* causes seborrheic dermatitis.
- 14) **A.** Don't confuse acantholysis (loss of adhesion between cells as seen in pemphigus vulgaris, for instance) with acanthosis, which is a thickening of the epidermis.
- 15) **D.** Only 5-10% of actinic keratoses progress to basal or squamous cell carcinoma. Choice A describes keratocanthoma.
- 16) **C.** The neonate has staph scalded skin syndrome. This is caused by a toxin released by staph at a distant site – the blisters are sterile! The nose, pharynx, ear, or umbilicus are most common sites for a productive culture.
- 17) **D.** Pemphigus vulgaris is most common in 50-60 year old people of Jewish or Mediterranean descent. In PV, both the Nikolsky and Asboe-Hansen's signs (D) are positive. PV is associated with

HLA DR4, 6, and DQ-1, but not B27. It is caused by IgG (IgA is seen in dermatitis herpetiformis). Dermatitis herpetiformis, not PV, is treated with dapsone. In PV, the plane of separation is right above the basal layer, not at the dermal-epidermal junction: the basal layer looks like a “row of tombstones.”

- 18) **B.** This man has bullous pemphigoid, which is different from pemphigus vulgaris in all the ways listed except that the blisters in BP are *more* tense than the blisters in PV. Bullous pemphigoid is more common in very elderly caucasians.
- 19) **A.** The single most important prognostic factor for malignant melanoma is the depth of invasion (Breslow thickness).
- 20) **E.** Acral lentiginous melanoma is the form of malignant melanoma that is not dependent on UVB radiation, so Blacks can get it too. The primary lesion is found on the palms, sole, or underneath the nail (subungual).