Skin Pathology

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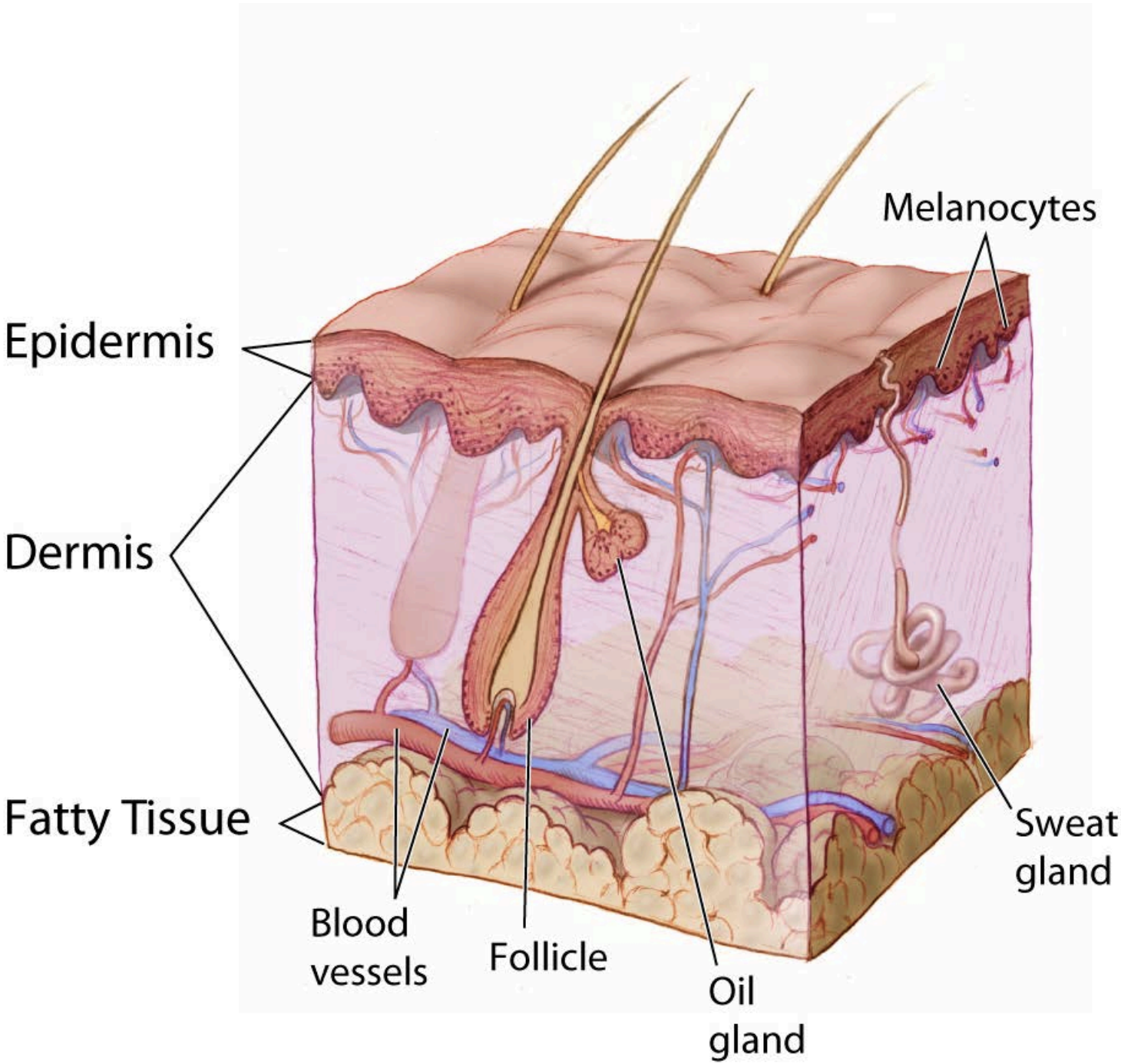
Skin Pathology Outline

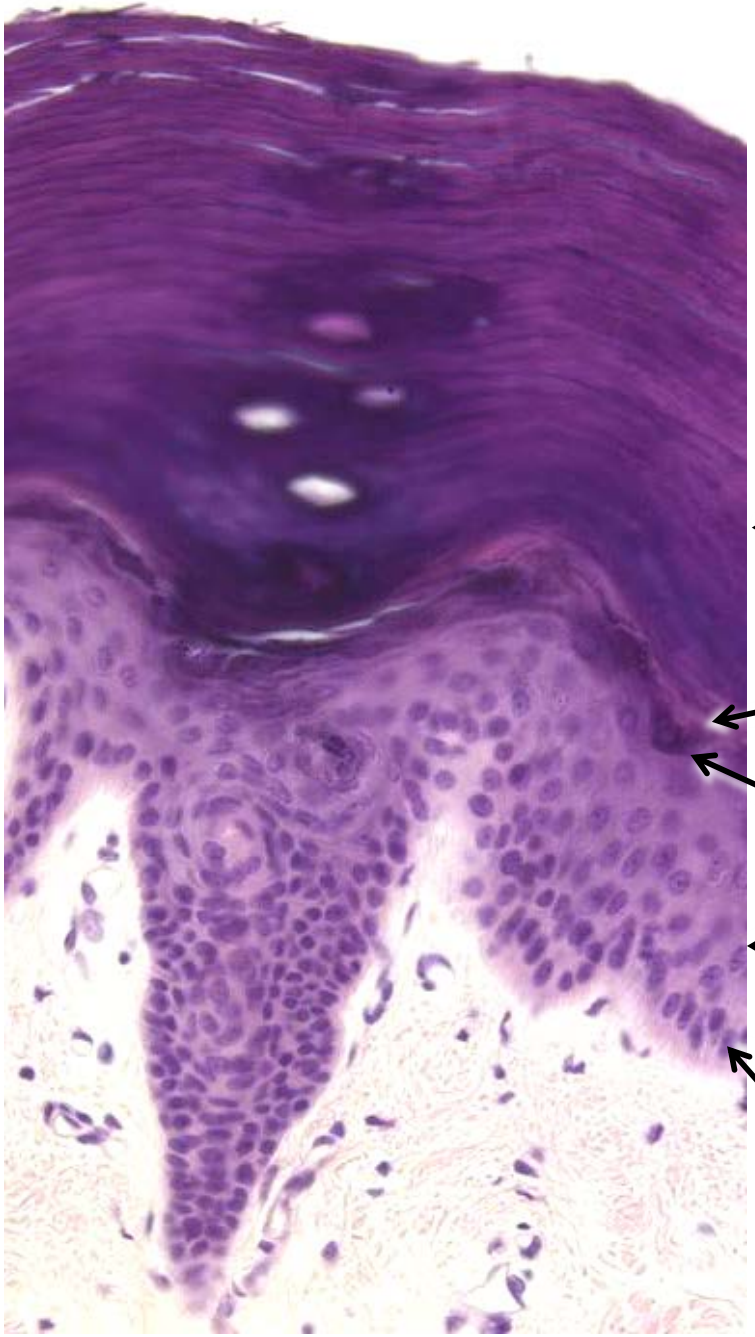
- Introduction
- Infectious disorders
- Inflammatory disorders
- Bullous disorders
- Benign neoplasms
- Malignant neoplasms

Skin Pathology Outline

- Introduction


Melanocytes
Epidermis
Dermis
Fatty Tissue
Sweat gland
Blood vessels
Follicle
Oil gland

Thick skin



corneum

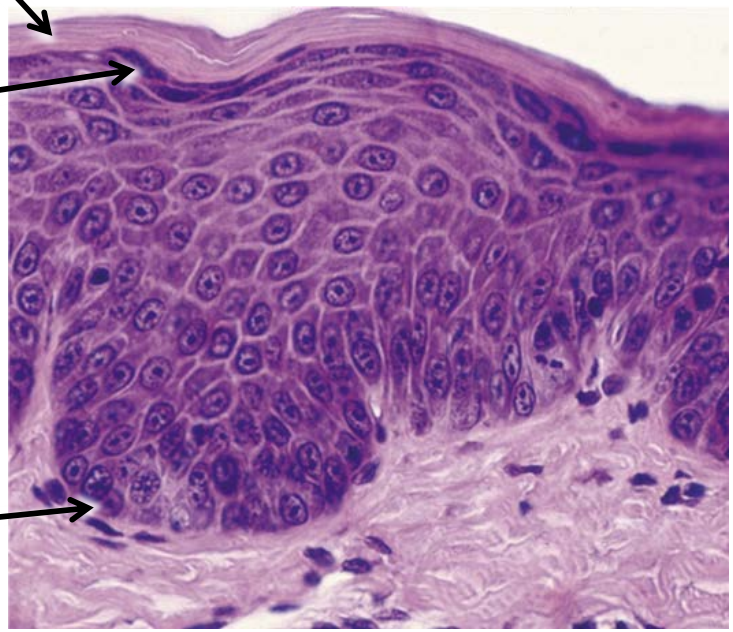
lucidum

granulosum

spinosum

basale

Thin skin



Clinical Terms You Should Know

Erythema: redness

Macule: flat lesion

Patch: a large macule (<1cm)

Papule: a raised lesion

Plaque: a large papule (>1cm)

Vesicle: a blister

Bulla: a big blister

Pustule: a blister that contains pus

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Impetigo

- *Staph aureus* or *Strep pyogenes*
- Children
- Face
- “Honey-crusted” pustules

Impetigo

Erysipelas

- *Staph aureus* or *Strep pyogenes*
- Adults
- Face/scalp
- Sharply-circumscribed, erythematous plaques

Erysipelas

Necrotizing Fasciitis

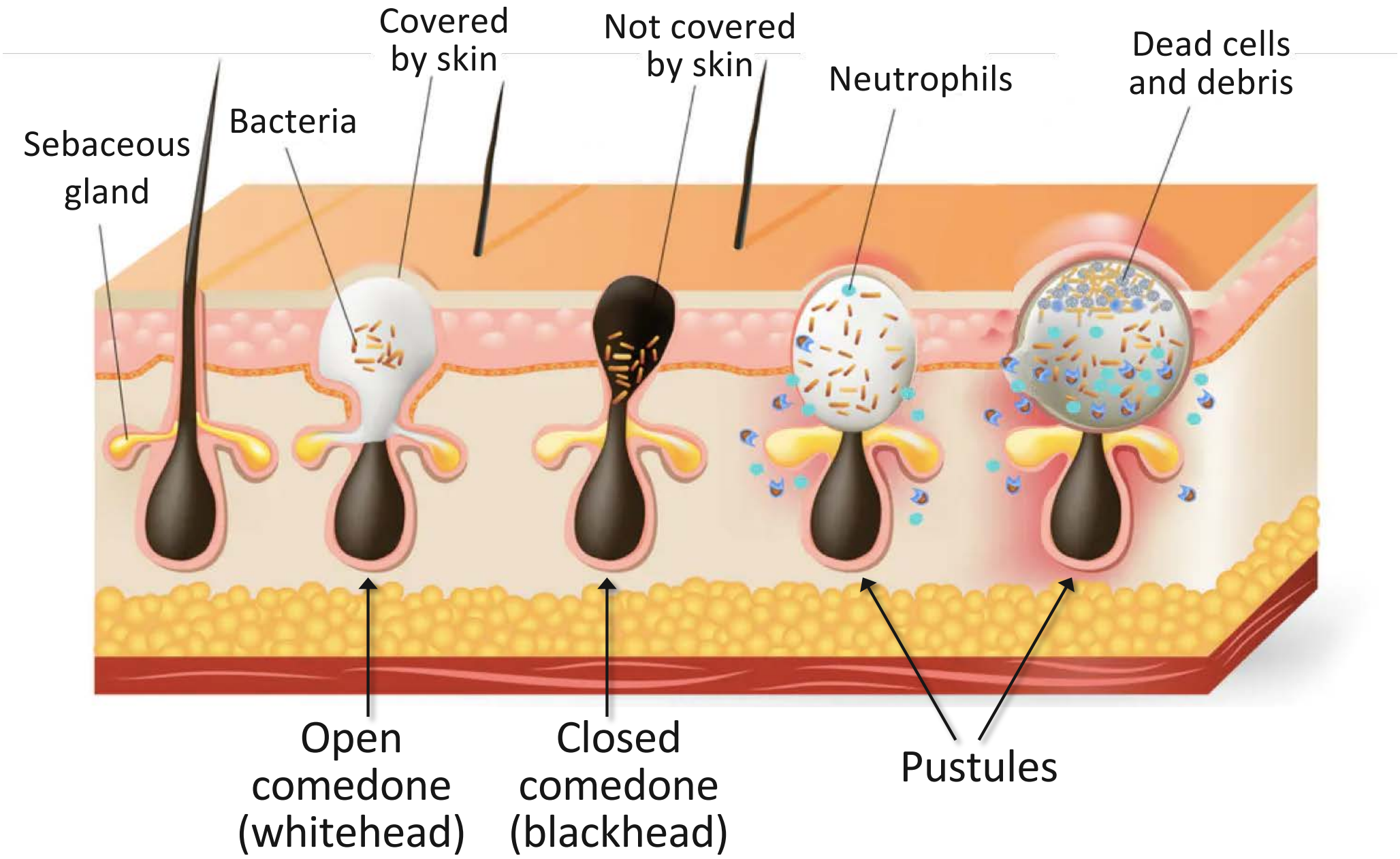
- Many potential organisms
- Excessive pain following small injury
- Rapidly progressive tissue necrosis and gangrene
- Need early, aggressive treatment (surgery and IV antibiotics)

Necrotizing fasciitis

Acne vulgaris

- *Proprionibacterium acnes*
- Sebaceous glands get plugged, then bacteria cause inflammation of the hair follicle/sebaceous gland
- Comedones and/or pustules

Types of Acne Lesions

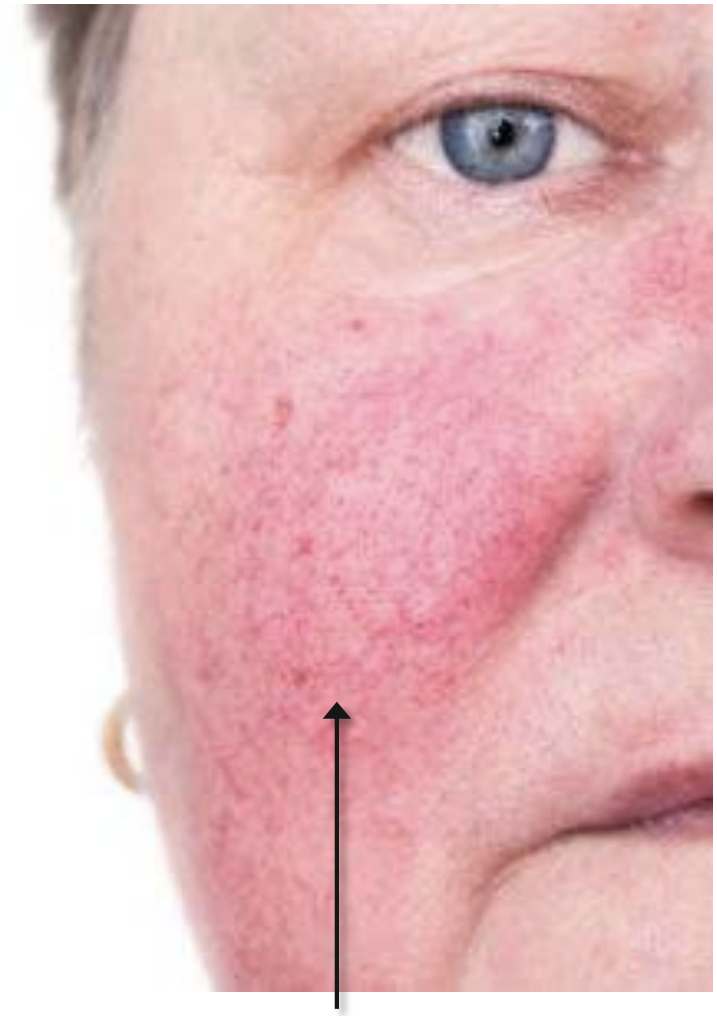


Acne vulgaris

Acne vulgaris

Acne rosacea

- Immune-mediated disease
  (no known microbial trigger)
- Follicles are inflamed and plugged
- Four stages:
  1. Flushing episodes
  2. Persistent redness and telangiectasias
  3. Pustules
  4. Rhinophyma



Redness and telangiectasia

Rhinophyma

Rosacea

Ringworm (tinea)

- Caused by dermatophytic (skin-loving) fungi like *microsporum* and *trichophyton*
- Red, scaly, “ring-shaped” lesions
- Named by anatomic site
  - tinea corporis = ringworm on body in general
  - tinea pedis = ringworm of foot (athlete’s foot)
  - tinea cruris = ringworm in groin (jock itch)

Tinea corporis

Sporotrichosis

- Fungus: *Sporotrichum schenkii*
- “Rose gardener’s disease”
- Painless papule, then open sore

Sporotrichosis

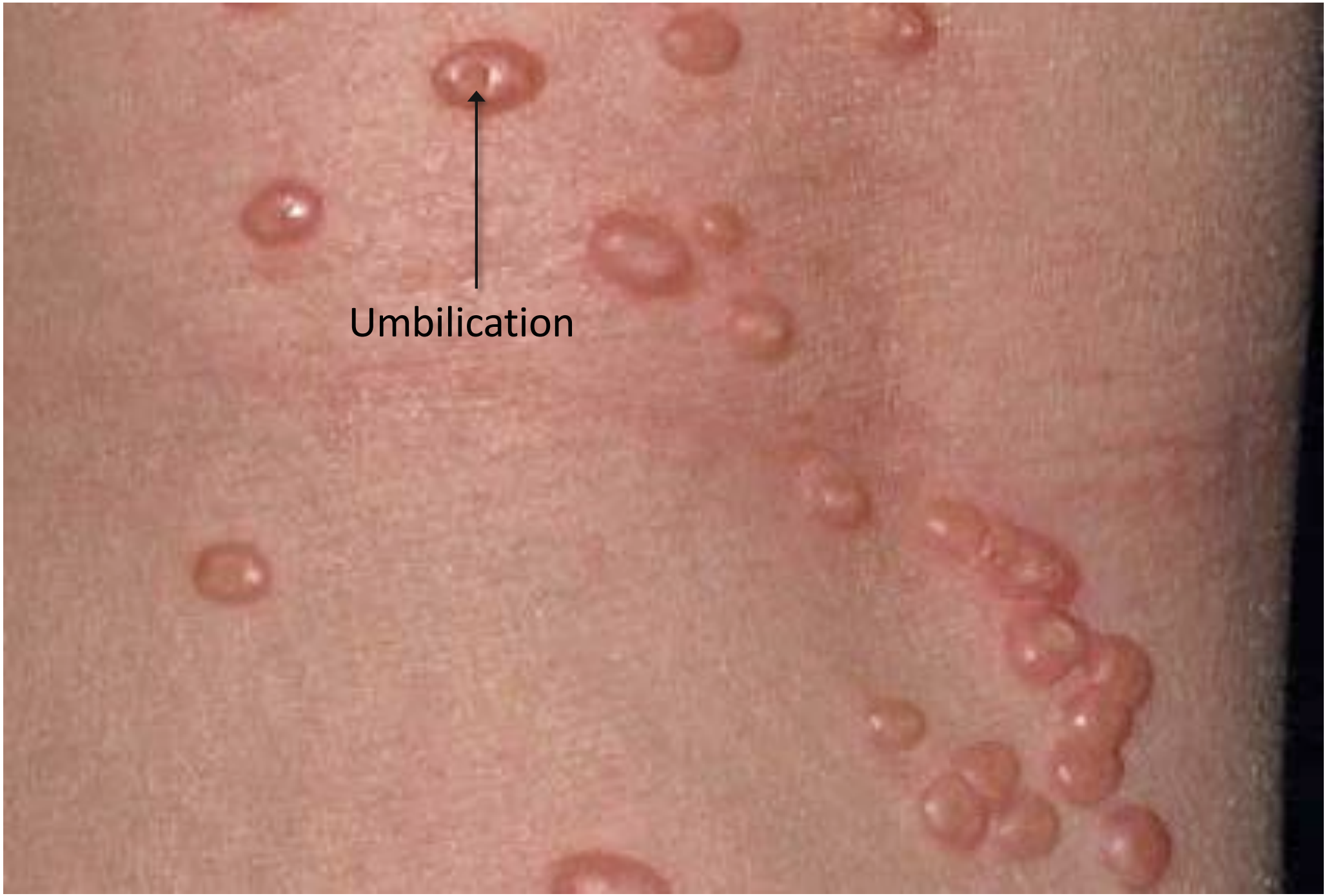
Verruca vulgaris

- HPV (usually serotypes 2 and 4)
- Common wart
- Most common on extremities
- Most regress spontaneously

Verruca vulgaris

Molluscum contagiosum

- Pox virus
- Centrally-umbilicated red papules
- *Very* contagious



Molluscum contagiosum

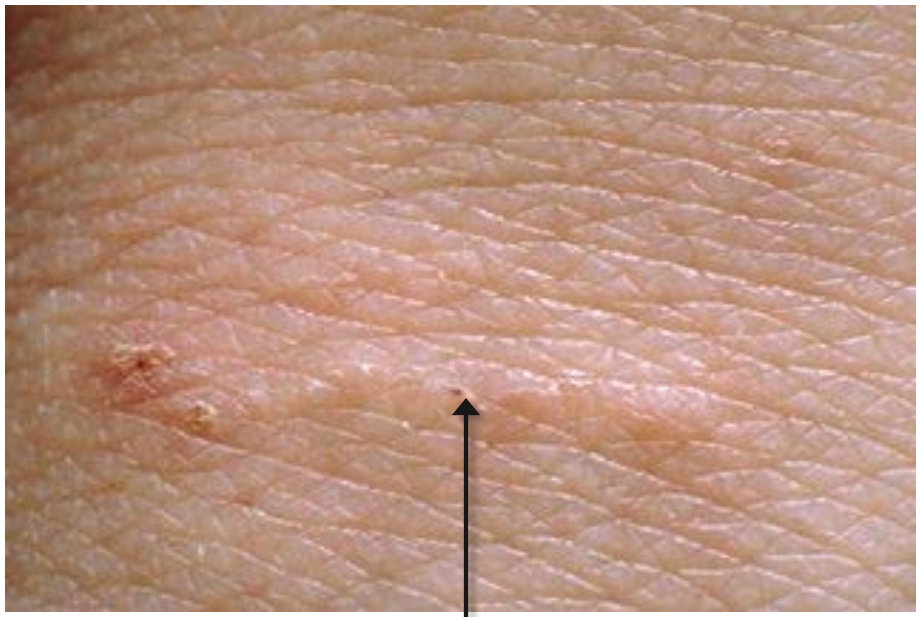
Erythema multiforme

- Usually HSV; sometimes drug-related
- “Target” lesions and/or vesicles on skin, mucous membranes
- Stevens-Johnson syndrome is a related disease characterized by skin necrosis.

Erythema multiforme

Scabies

- Parasite: Sarcoptes scabei
- Hands/wrists, abdomen/groin
- Itchy rash, may see “burrows”
- Highly contagious



Scabies

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Psoriasis

- Common, inherited, autoimmune disease
- Itchy red lesions with silvery scales
- Most common on elbows, knees, scalp
- Patients may also have arthritis

Psoriasis

Lichen planus

- Common, chronic, immune-mediated disease
- Skin: purple polygonal papules
- Mucous membranes: lacy-appearing lesions (Wickham's striae), erosions, or white patches

Lichen planus

Wickham’s striae

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Two bullous diseases

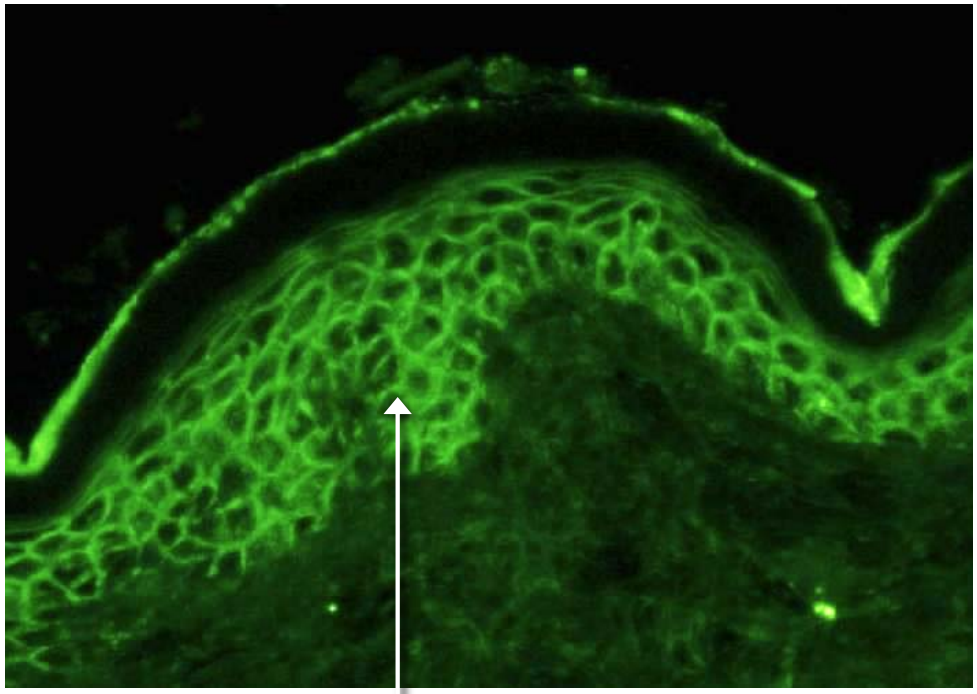
Pemphigus vulgaris

- Antibodies against spot desmosomes
- Superficial bullae
- Mouth first, then skin

Bullous pemphigoid

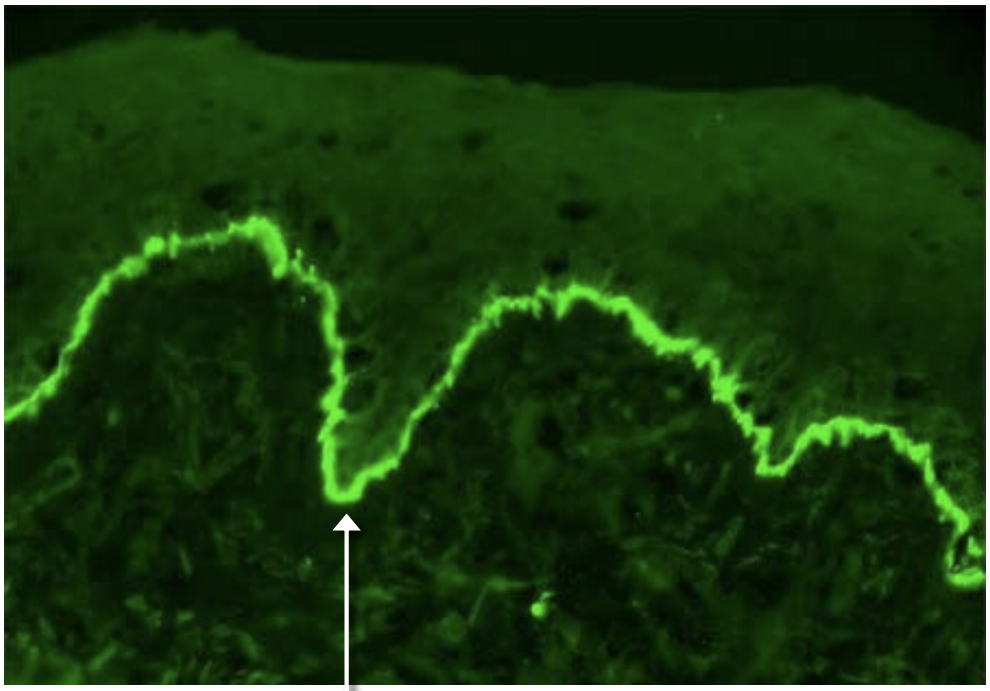
- Antibodies against hemidesmosomes
- Subepidermal bullae
- Groin, axillae, arms

Pemphigus vulgaris



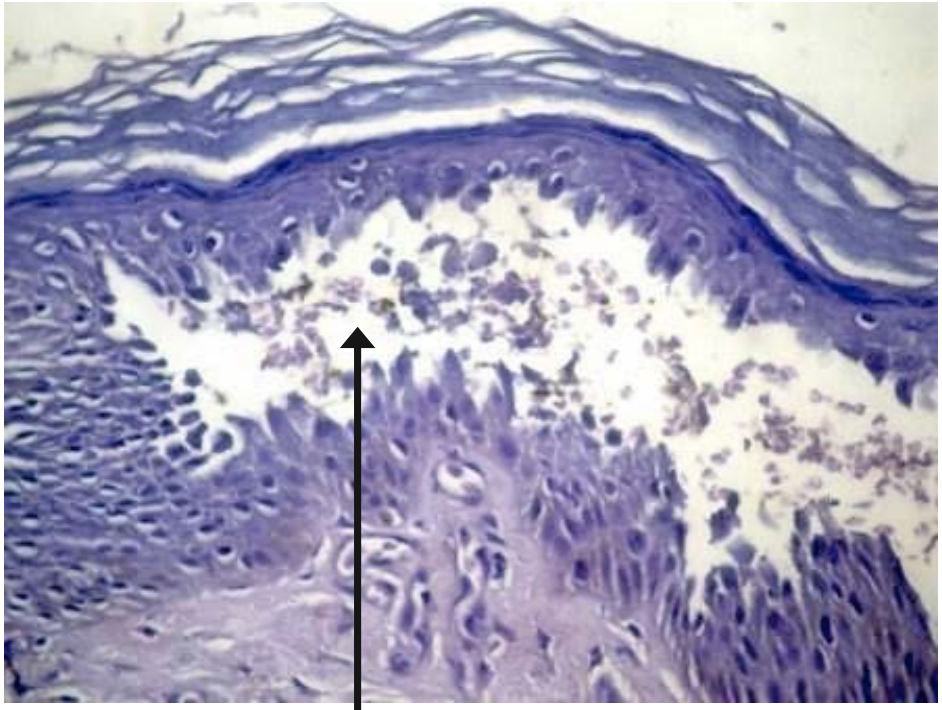
Antibodies against
spot desmosomes
(*between* epidermal cells)

Bullous pemphigoid



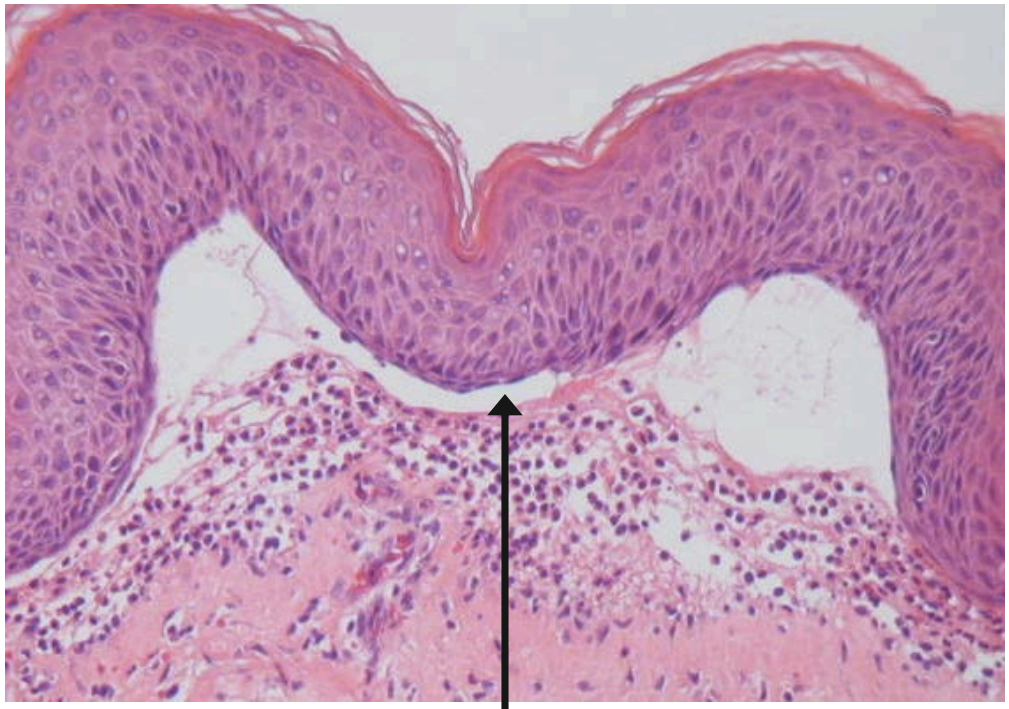
Antibodies against
hemidesmosomes
(*beneath* epidermal cells)

Pemphigus vulgaris



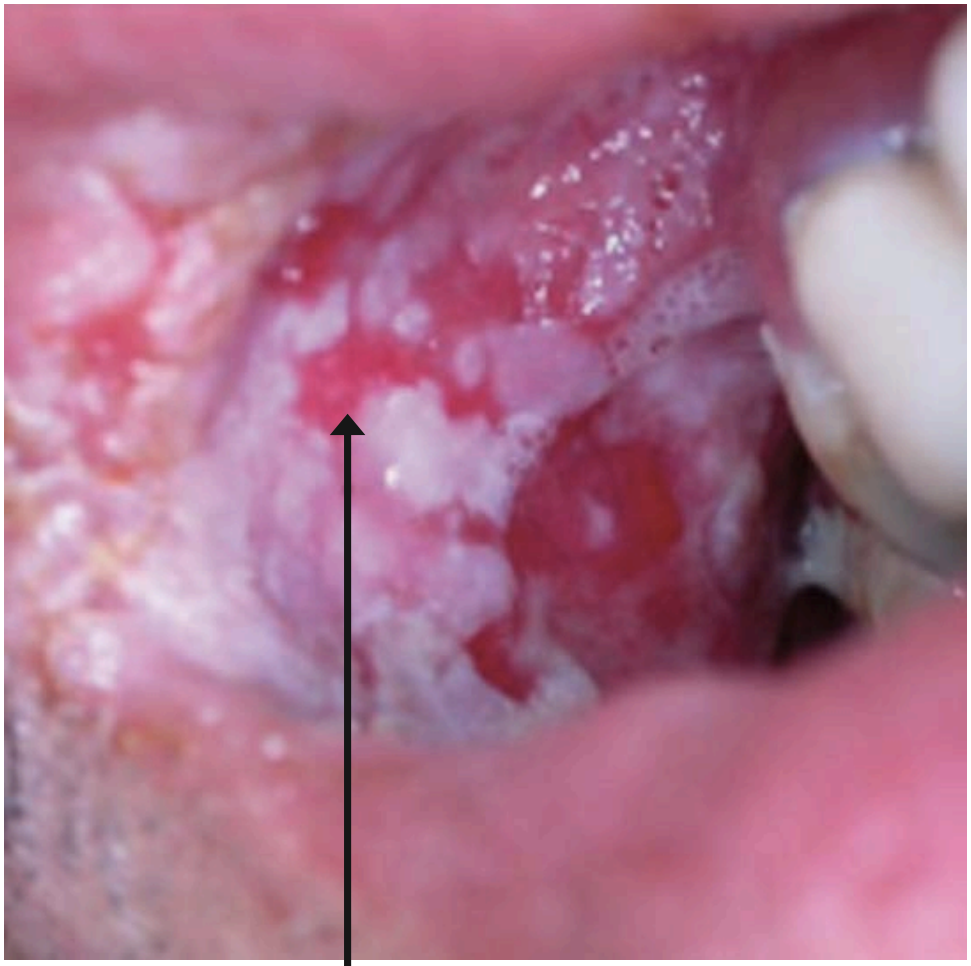
Separation between epidermal cells

Bullous pemphigoid



Separation between epidermis and dermis

Pemphigus vulgaris



Ruptured bullae

Bullous pemphigoid

Intact bullae

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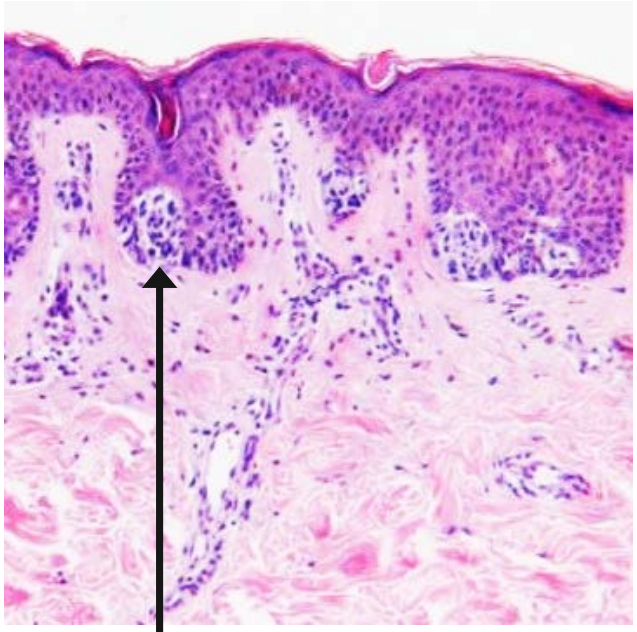
Nevus (mole)

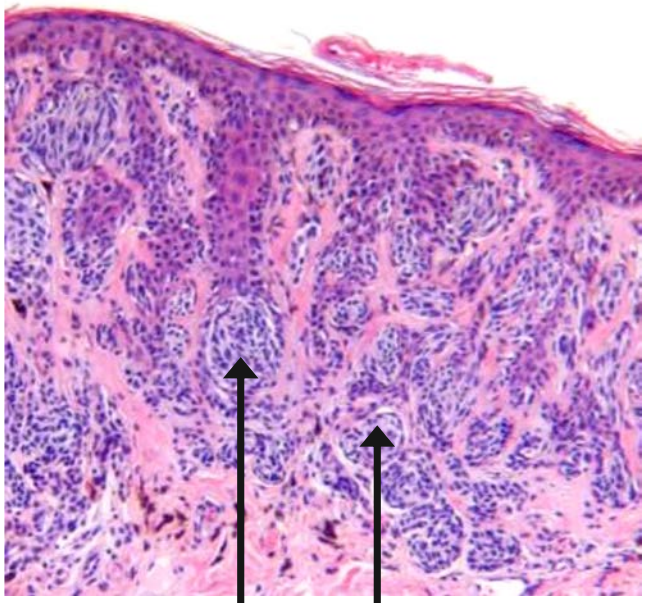
- Benign neoplasm of melanocytes
- Round, evenly-pigmented
- Progresses from junctional to compound to intradermal over time
- Melanoma occasionally develops in nevi – so watch for changes (size, shape, color)

Junctional nevus



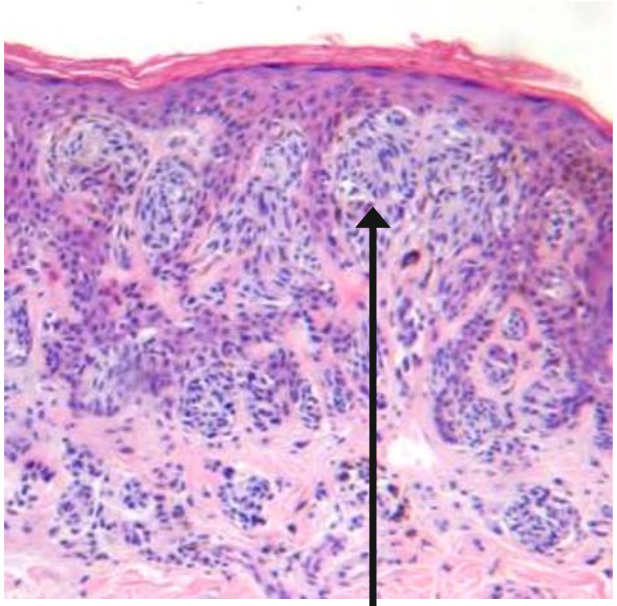
Melanocytes at dermal-epidermal junction

Compound nevus



Melanocytes at junction AND in dermis

Intradermal nevus



Melanocytes in dermis

Hemangioma

- Common benign tumor of blood vessels
- “Strawberry hemangioma” occurs at birth, usually regresses within a year

Hemangiomas

Strawberry hemangiomas

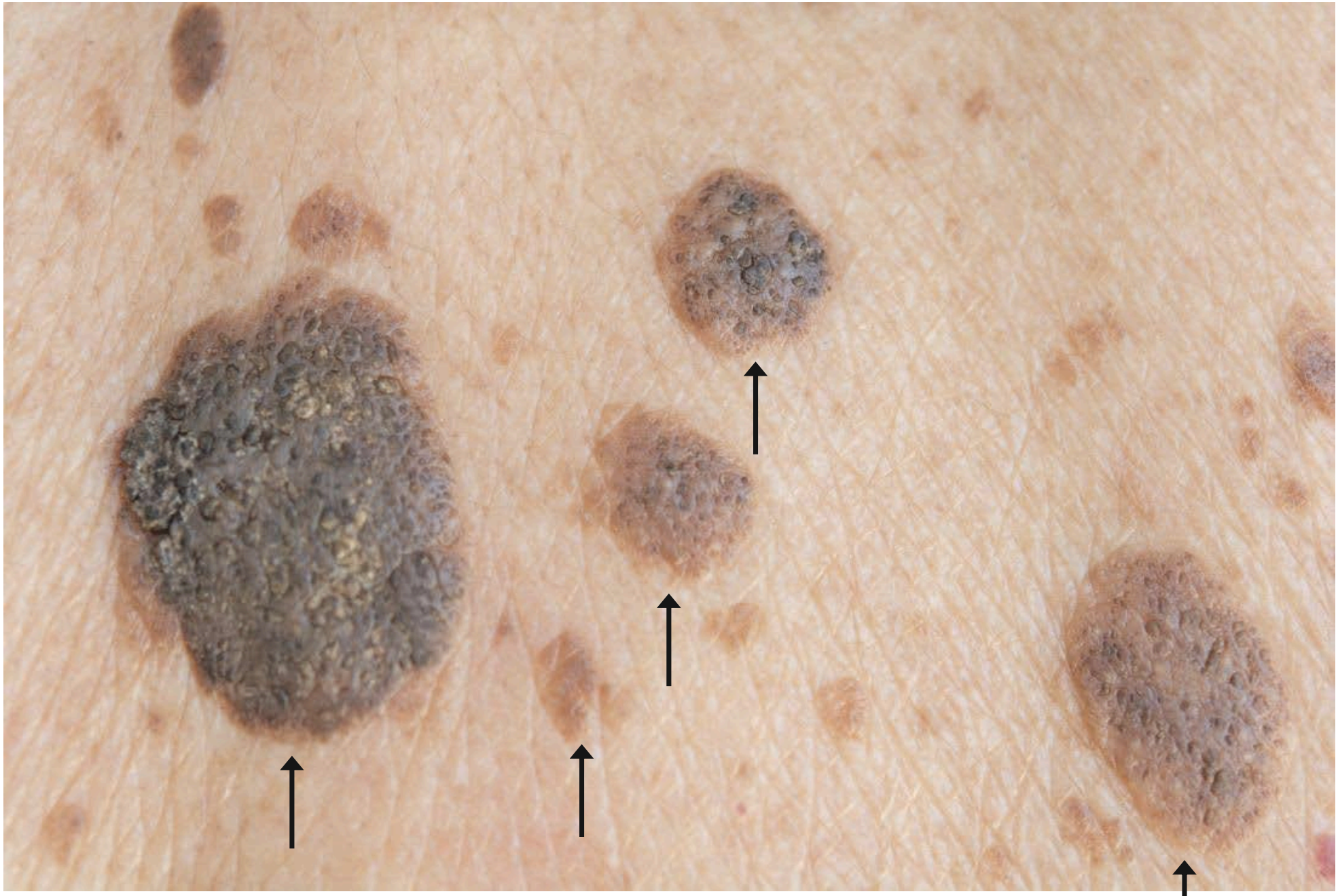
Keratoacanthoma

- Rapidly-growing, crater-like nodule
- May evolve into squamous cell carcinoma (must be removed)

Keratoacanthoma

Seborrheic keratosis

- Common benign epidermal tumor
- Increasing incidence with age
- Brown-grey, velvety-waxy plaque
- “Stuck-on” appearance



Seborrheic keratoses

Actinic keratosis

- Dysplastic epidermal cells
- Ill-defined, rough patches
- Related to sun exposure (“actinic”)
- Considered pre-malignant

Actinic keratosis

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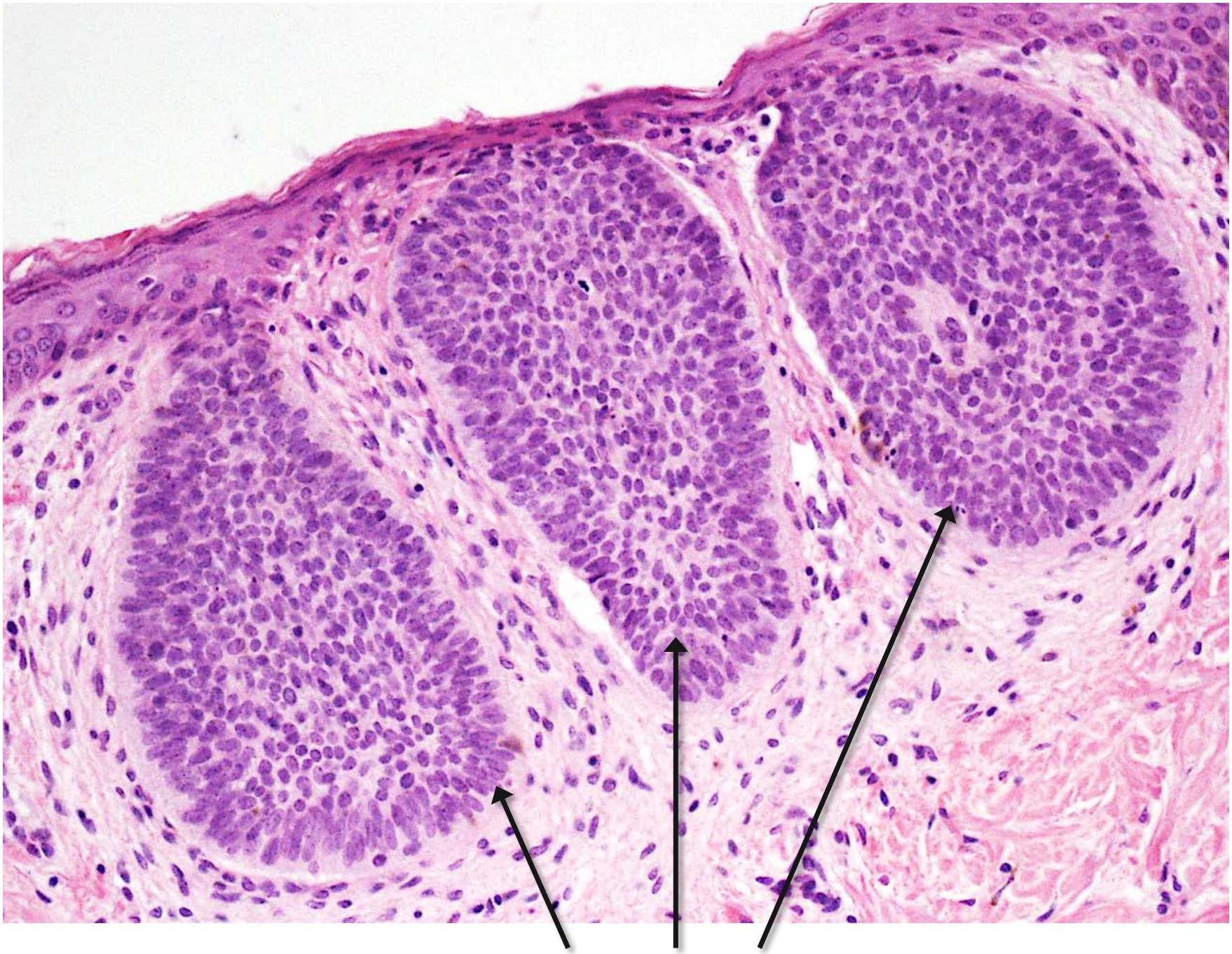
Basal cell carcinoma

- Malignant tumor of cells in basal layer of epidermis
- Raised, “pearly” nodule
- Older patients, sun-exposed skin
- Locally aggressive, but almost never metastasizes!

Basal cell carcinoma

Basal cell carcinoma “rodent ulcer”

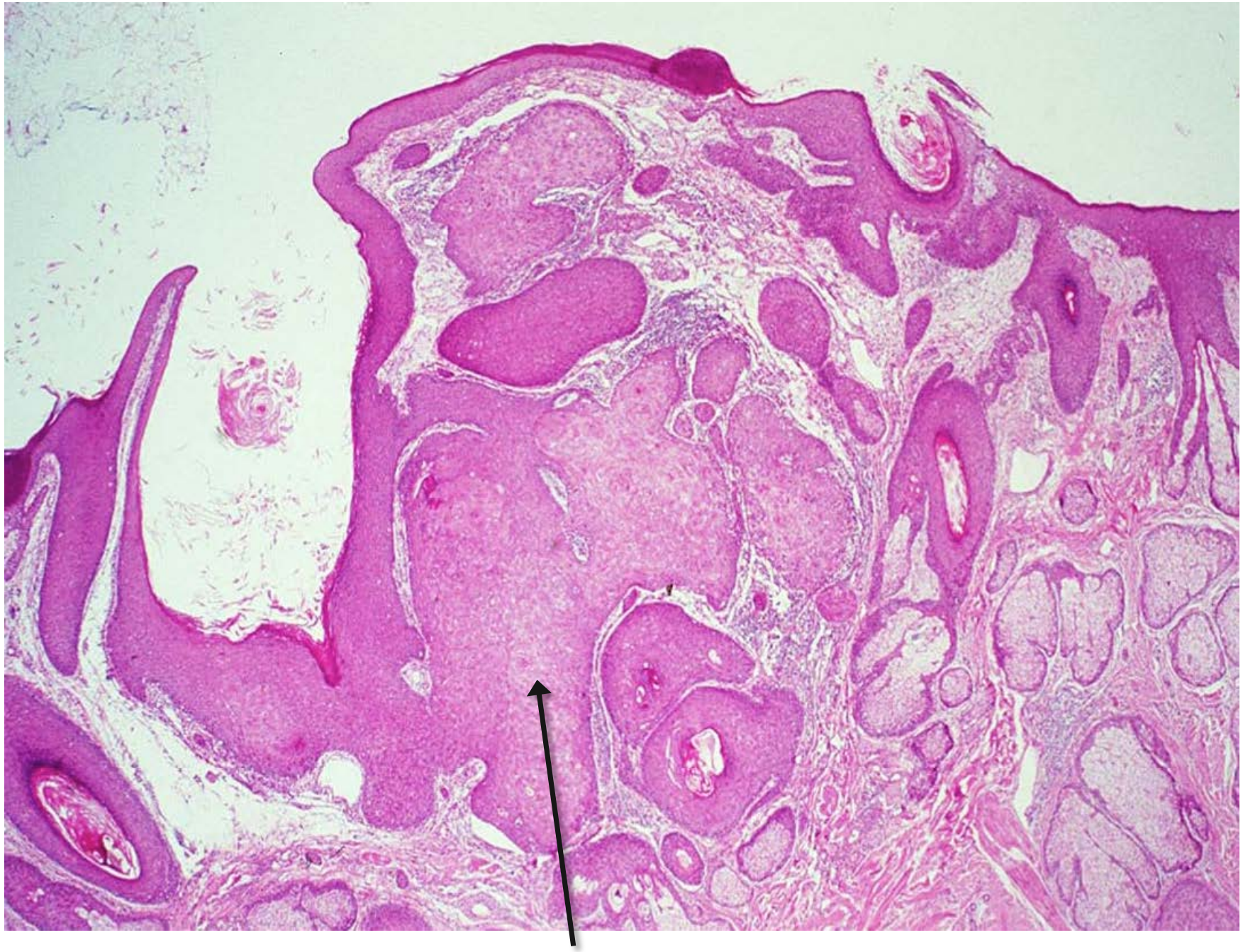


Basal cell carcinoma

Squamous cell carcinoma

- Malignant tumor of squamous cells
- Reddish nodule or plaque
- Older patients, sun-exposed skin
- Can metastasize

Squamous cell carcinoma



Squamous cell carcinoma

Melanoma

- Malignant tumor of melanocytes
- All ages, sun-exposed skin
- Worst prognosis of all skin cancers
- Prognosis directly related to depth of invasion

Is it melanoma, or just a mole?

Look for:

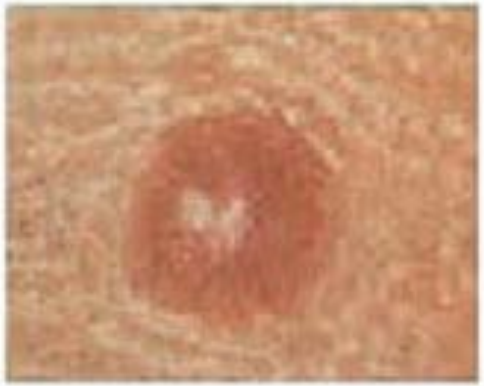
Asymmetry (in shape or color)

Border (irregular)

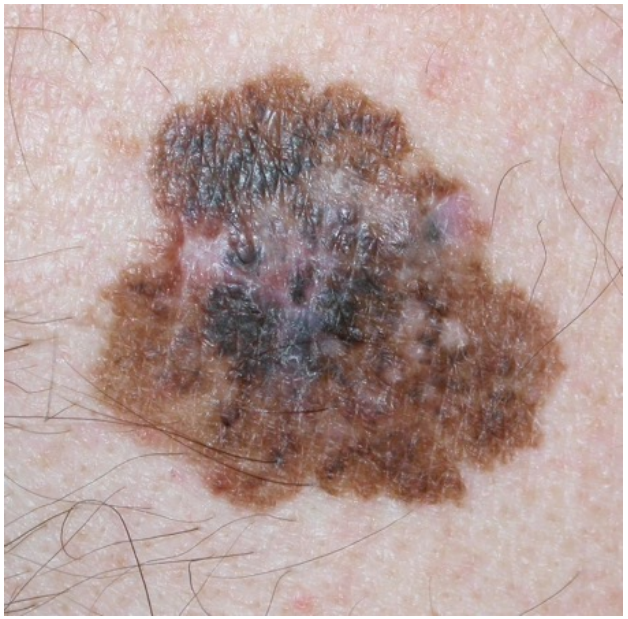
Color (variegated)

Diameter (usually >6mm)

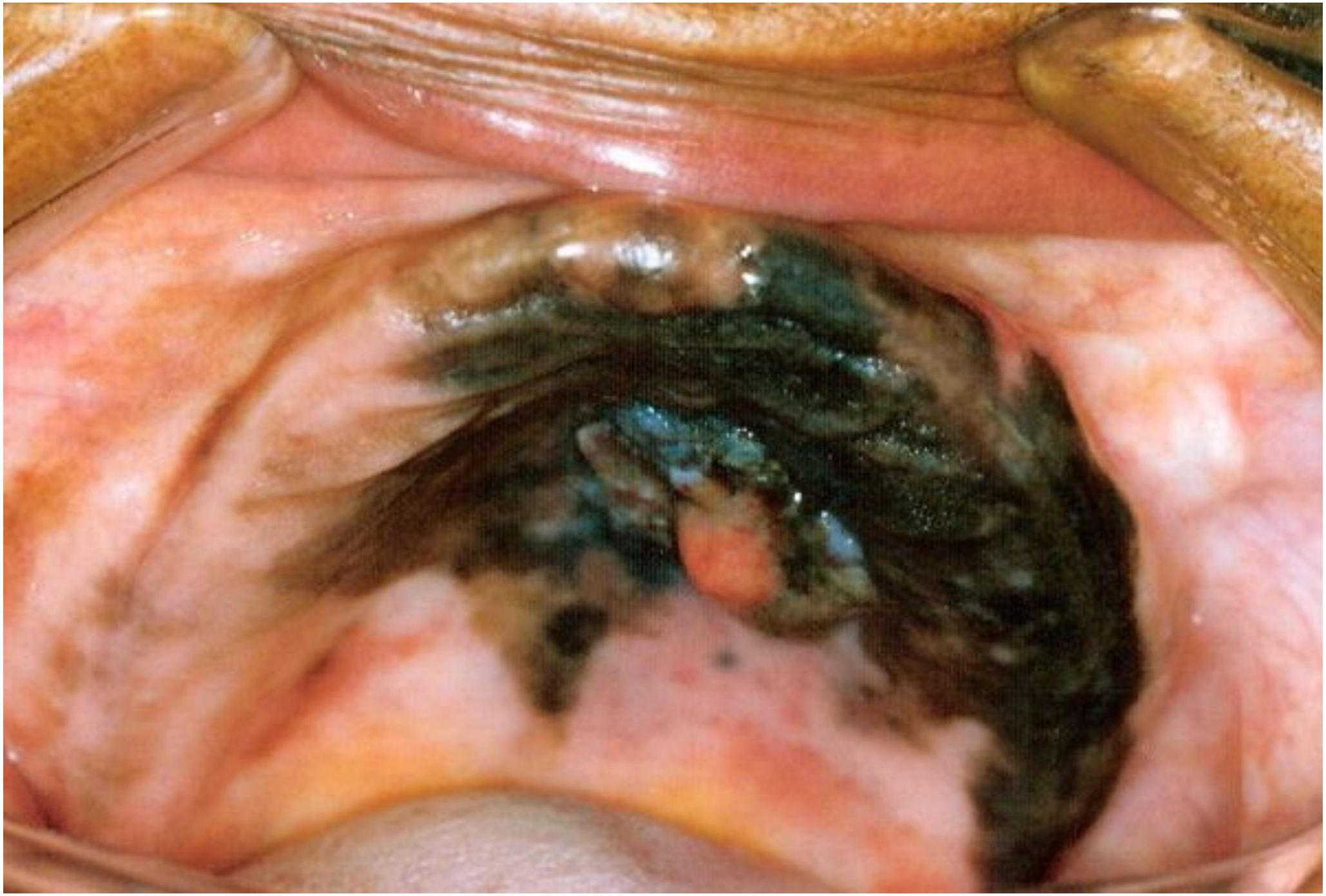
Elevation (or textural change within lesion)

	Asymmetry	Border	Color
Normal			
	Symmetrical	Even Borders	Single Color
Melanoma			
	Asymmetrical	Uneven Borders	Multiple Colors

More examples of melanoma

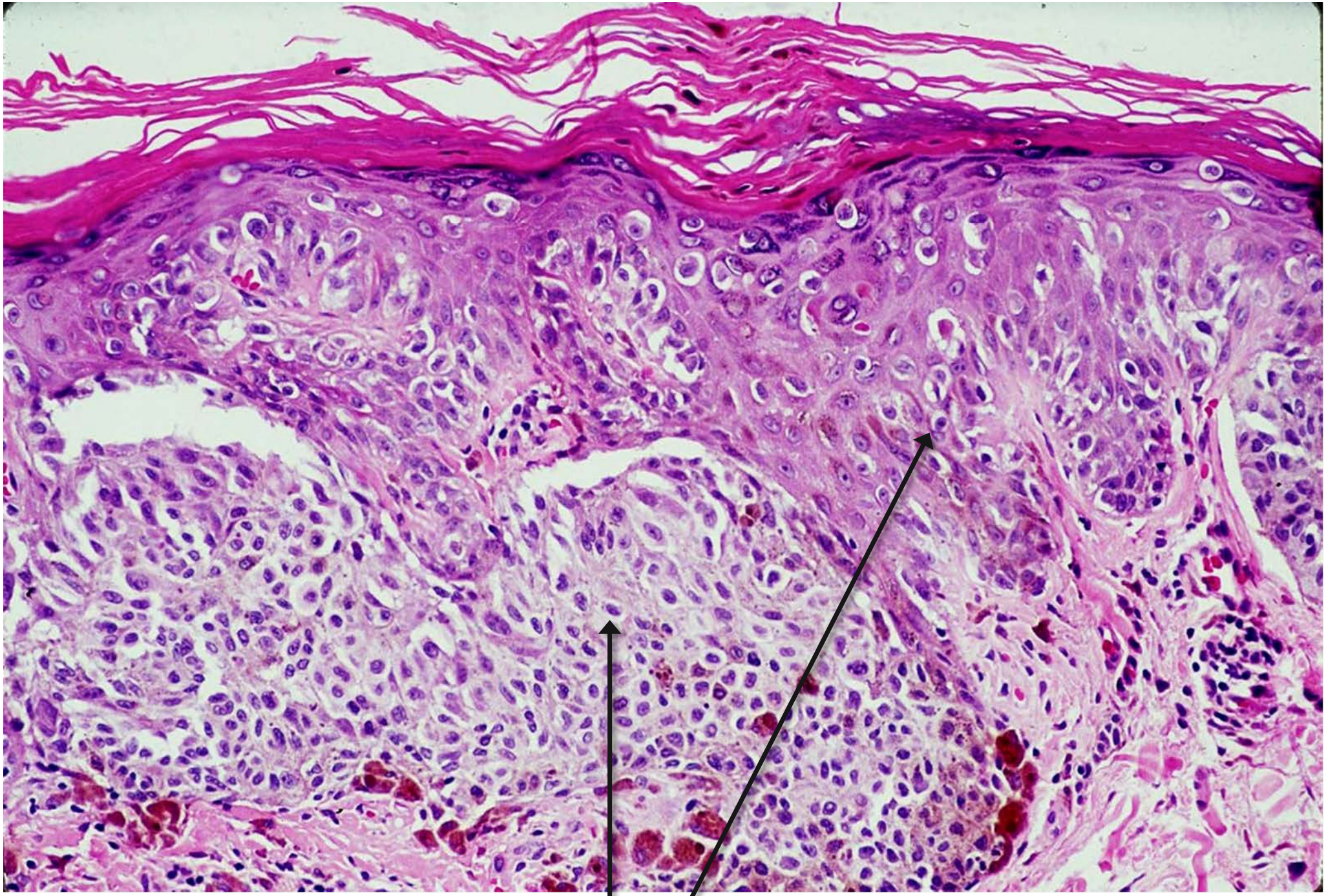


Amelanotic melanoma



Oral melanoma

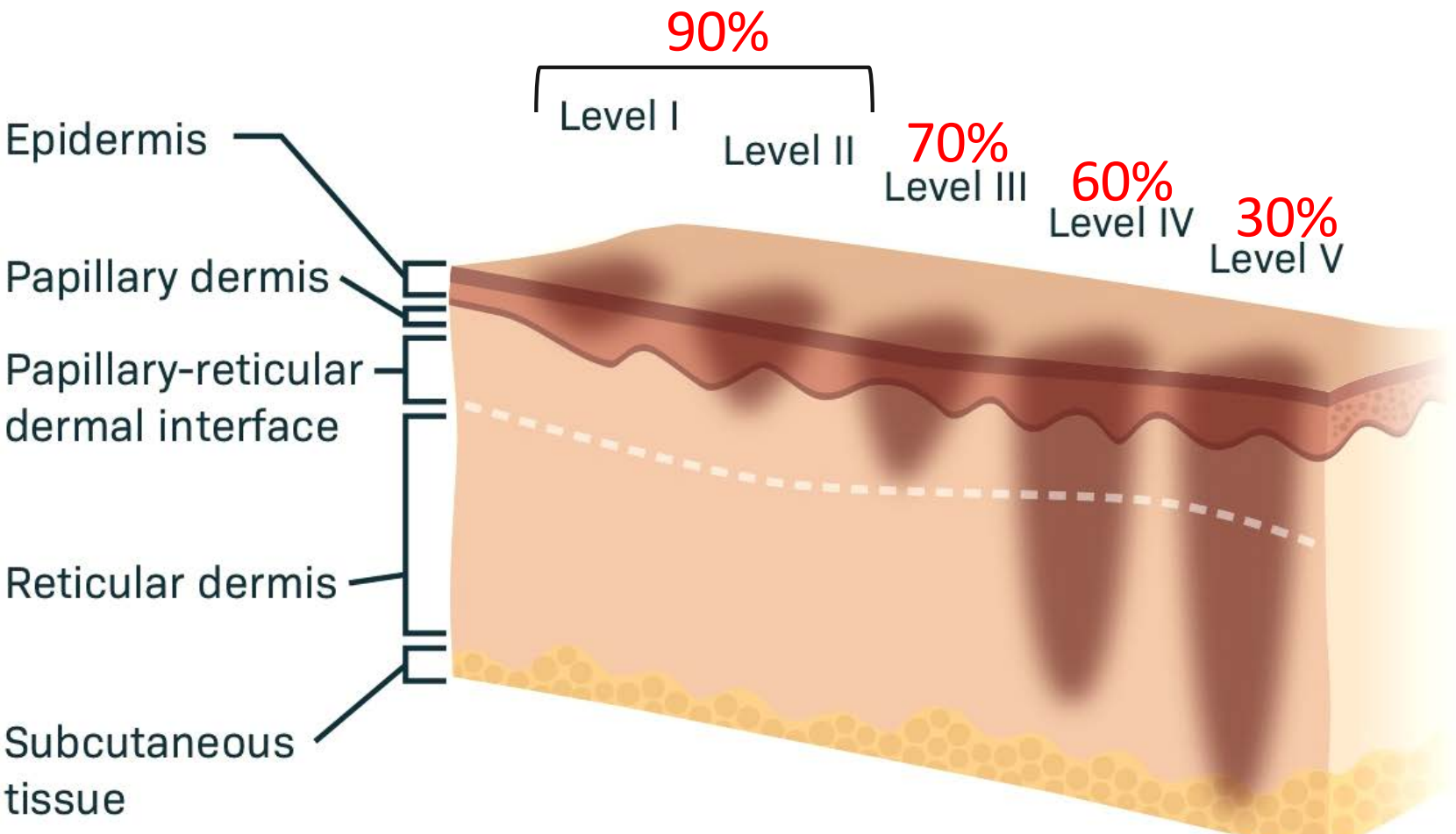
Acral melanoma


Melanoma

Melanoma prognosis

- Depth of invasion = most important factor
- Measure depth by Clark levels or Breslow thickness
- Presence of metastases = worse prognosis
- Ulcerated surface = worse prognosis

Clark levels and 10-year survival



Breslow thickness and 10-year survival