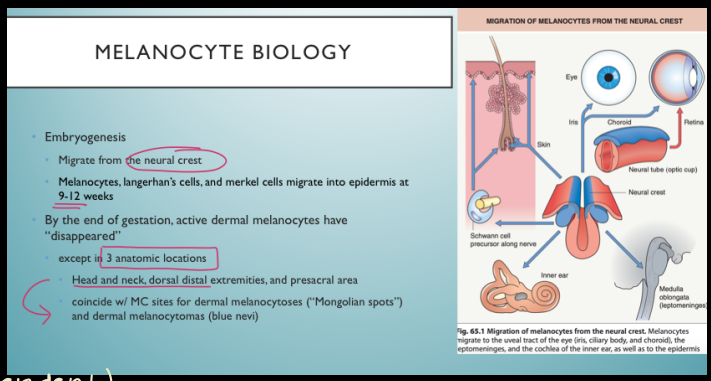
L01 Pigmentation & Sweating Disorders



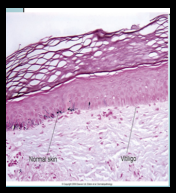
FROM NEURAL CREST

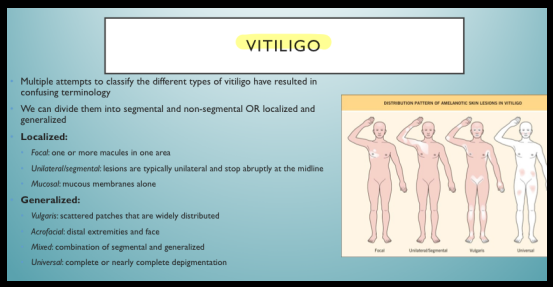
- ★ major determinant of skin color is melanocyte activity = intracytoplasmic organelle ∅density ★
- ★ UV Radiation
  - ↑size of melanocytes & tyrosinase activity
  - UVA : immediate darkening
  - UVB : delayed tanning, carcinogenic
- ★ Melanin produced from tyrosine via tyrosinase (Cu dependent)
  - ★ [pheomelanin : yellow/red — round
    eumelanin : black/brown — elliptical
    stimulated by MSH & ACTH on MC1-R
- ★ Acanthosis Nigricans
  - ★ type I : insulin-resistant, obesity, PCOS
  - ★ type II : GI malignancies (rapid onset)
- ★ Melasma sharply demarcated dark patches
  young women Fitz type IV, V, VI ; tx : sun protection
- ★ Onchronosis Hyperpigmented plaques d/t excessive hydroquinone use
  tx : stop medication
- ★ Transient Neonatal Pustular Melanosis
  @BIRTH
  NEUTROPHILS
- ★ Erythema Toxicum Neonatorum
  2-4 days after birth
  EOSINOPHILS

TQ know what an eosinophil vs neutrophil looks like

- ★ Vitiligo progressive loss of functional melanocytes
  d/t autoimmune destruction via IFN-gamma JAK-STAT
  white patches w/ sharp demarcation
  treatment resistant - esp. acrofacial type
  topical/oral steroids, calcineurin inhib, depigment.
  Halo nevi = common
  Histo : loss of melanocytes, ∅inflammation ★
  MC comorbidity = autoimmune thyroiditis

TQ





- ★ oculocutaneous albinism (OCA) type of AR leukoderma
  - ★ # melanocytes = normal ★
  - OCA I → mutation in tyrosinase gene
    - OCA1A : most severe, ∅melanin but normal # melanocytes
    - OCA1B : some tyrosinase activity, some pigmentation
  - MC OCA II → mutation in OCA2 gene on csome 15
    Europeans mostly, still have tyrosinase activity
    ∅transport melanosomal proteins

TQ

- ★ Puetz-Jeghers syndrome
  - STK11 mutation in MTOR pathway
  - oral mucosal lentigines + small bowel polyposis
  - ★ ↑risk GI & pancreatic CA → [NEED video endoscopy @ 8yo then q3y] ★
- ★ Drug Induced Hyperpigmentation
  Minocycline
  MCI blue/black in areas of prior inflammation

II blue/black @ shins
III muddy brown all over

Chloroquine blue/black pretibial, face, cartilage
Amiodorone slate grey on sun exposed areas
Chlofazamine pink discoloration
Zidovudine blue/black nails

DRUG-INDUCED PIGMENTATION

- Chlorpromazine, thioridazine, imipramine, and clomipramine may cause a slate-gray hyperpigmentation in sun-exposed areas after long periods of ingestion
- Frequently, corneal and lens opacities are present
- Therefore all pts with hyperpigmentation from these meds should have ophthalmologic exam

Rifampin = red/orange bodily secretions

SWEATING

controlled through SNS but functionally CHOLINERGIC

TQ

★ Primary Hyperhydrosis
- localized excessive sweating; onset <25 yrs; bilateral/symmetric
★ STOPS DURING SLEEP! ★

tx: Qbrexa (glycopyrinium)
SE: blurry vision
tx: botox

★ Secondary
dlt another condition

★ Auriculotemporal Nerve Syndrome
aberrant regen of PSN fibers
sweating in auriculotemp. distribution after FOOD ★

★ Anhydrosis/hypohydrosis
dlt ectodermal dysplasia
results in hyperthermia!

BROMHIDROSIS smelly sweat

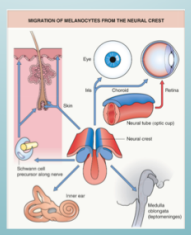
- Apocrine bromhidrosis: bacterial degradation of apocrine sweat → chain fatty acids
- Exaggeration of typical axillary body odor
- Eccrine bromhidrosis: 3 types
  - Keratogenic: bacterial degradation of stratum corneum macerated by excess eccrine sweat
  - Metabolic: abnormal secretion of amino acids or breakdown products
  - Heritable metabolic disorders:
    - PKU: mousy odor
    - Maple syrup urine disease sweet odor
  - Exogenous: odorogenic compounds
    - Ie: garlic, asparagus & curry → eaten thingz
- Treatment
  - Antibacterial soaps, commercial deodorants, changing under clothes, Drysol, topical ABX (e.g. clindamycin), surgical removal of the glands

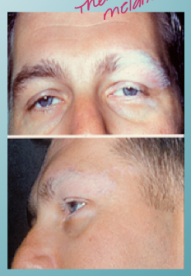
VOGT-KOYANAGI-HARADA SYNDROME

immune system attacks melanocytes

inflammation everywhere there's melanocytes

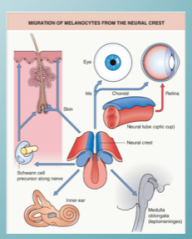
- Multisystem disorder
  - Uveitis, aseptic meningitis and otic involvement (e.g. dysacousia)
  - Vitiligo (especially of head and neck region) and poliosis
  - Only 20-60% of patients have cutaneous vitiligo like lesions
- Affects primarily pigmented races, F>M, all ages
- Autoimmune
  - Auto-antigens solely expressed in melanin containing cells





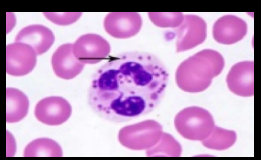
VOGT-KOYANAGI-HARADA SYNDROME

- 4 phases
  - 1. Prodromal phase (meningoencephalitic phase) Meningitis
    - fever, malaise, HA, N/V, tinnitus
    - can include meningismus, headaches, mental status changes
    - Recovery is usually complete
  - 2. Uveitic phase
    - Anterior or posterior uveitis
  - 3. Convalescent phase
    - begins 3 weeks-3 months after the uveitis appears
    - alopecia, vitiligo, poliosis whitened hair
  - 4. Recurrent attacks of uveitis → permanent decreased visual acuity, cataracts, glaucoma
- Treat flairs with CS and steroid sparing immunosuppressive therapy aggressive



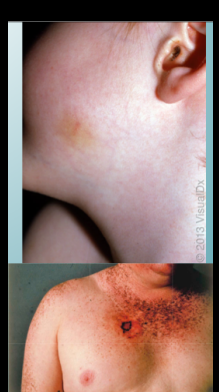
CHEDIAK HIGASHI

AR, LYST-CHS1 mutation
Lysosome dysfunction
- bleeding
- bacterial infx
- brain problems
- pigment dilution (grey hair)



HERMANSKY-PUDLAK

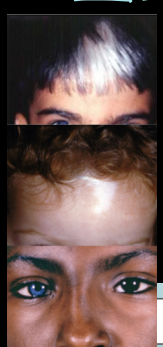
- AR, HPS1 gene, PUERTO RICANS
- disordered biogenesis of melanosome & lysosome-related organelles
  - bleeding
  - pulmonary fibrosis
  - ceroid lipofuscin = neuro degeneration



WAARDENBURG

inability of melanoblasts to reach target
sxs of piebaldism (KIT mutation)
white forelock
hypopigmentation
premature greying

PLUS
unibrow (synophrys)
congenital deafness
ocular Δs



WAARDENBURG SYNDROME

TQ

Four types of Waardenburg syndrome (WS) exist
Six genes are associated with WS.
Types I and III are caused by mutations in the *PAX3* gene
- encoding a transcription factor.

Most cases of WS type II are caused by mutations in the *MITF* gene
- however, some have *SOX10*, *EDN3*, *EDNRB*, and *SNAI2*
- No dystopia canthorum

Type 3- PAX3 gene
- upper limb abnormalities

WS type IV is caused either by a mutation in *SOX10* or by mutations in the endothelin-3 *(EDN3)* or the endothelin B receptor *(EDNRB)* gene.
- impair the ability of melanoblasts to reach their final target sites (inner ear, eye, skin) during embryogenesis.
- Hirschsprung's disease

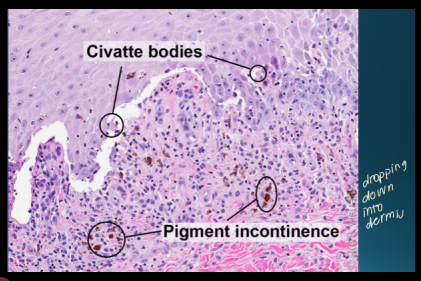
melanocytes migrate TO weird locations

LO2 Skin of Color

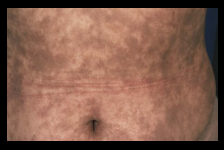
Post-inflammatory Hyperpigmentation

Mechanism:

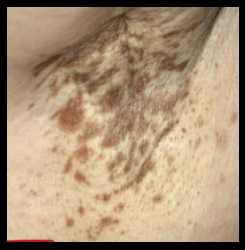
① ↑melanocyte activity → tan/dark brown
② melanocyte drop out → grey-blue/brown



- ★ Erythema Dyschromicum Perstans (EDP)
  - Hispanics, @ neck / trunk ; spares mucosa
  - ★ Erythematous bordered lesions progress to grey/brown
  - tx: clofazamine

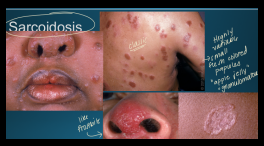


- ★ Lichen Planus Pigmentosus
  - grey/brown patches in photo or interrigous distribution
  - ★ Ø erythematous borders!



- ★ Sarcoidosis immune mediated granulomatous condition
  - giant hilar lymph nodes on CXR
  - papular eruption; NON CASEATING GRANULOMAS ★
  - ★ Lofgren syndrome → arthritis, erythema nodosum, bilateral hilar lymphadenopathy

TQ



- ★ Congenital Dermal Melanocytosis melanocytes in epidermis dont regress
  - benign blue-grey patches peak @ 1-2 y/o
  - short wavelengths seen better: blue

TQ

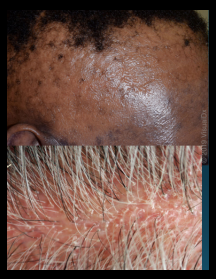
- ★ Keloid
  - dense fibrotic nodule that expands area of trauma
- ★ Pseudofolliculitis Barbae
  - flesh colored erythematous papules w/ hair shaft @ center
  - MC beard area from shaving against grain
- ★ Acne Keloidalis Nuchae
  - mechanical trauma
  - pustules & keloid-like papules on post neck

HAIR LOSS

Non-scarring = Ø destruction of follicular ostia
dx: punch biopsy

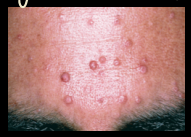
- ★ Scarring/Cicatricial alopecia = scar on opening of hair follicle
  - central centrifugal cicatrical alopecia
    - AA females w/ progressive hair loss from VERTEX w/ clumps of normal growth
    - d/t chemical straightening
    - tx: stop hair styling
  - lichen planopilaris
    - acute or insidious w/ perifollicular scale & erythema
    - tx: topical steroids/TCI
  - frontal fibrosing alopecia
    - variant of plano pilaris ... only @ front, complete loss
  - traction alopecia
    - d/t tight braiding
    - incomplete temporal & frontal hair loss
  - dissecting cellulitis of scalp
    - painless firm/boggy scalp nodules that rapidly connect
    - tx: oral ab ± steroids

TQ



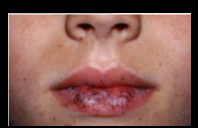
L03 Skin & systemic Dz I

- ★ Acanthosis Nigricans → insulin resistance & obesity
  - oral/mucosal → GI malignancies
- ★ Sweet's syndrome (acute febrile neutrophilic dermatosis)
  - painful erythemetous plaques w/ FEVER
  - TQ: ↑G-CSF ↑Neutrophils but Ø infection
  - myeloid leukemia
- ★ Erythema Gyratum Repens
  - pruritic, wavy "wood-grain" pattern rash; spares face, hands & feet
  - TQ: ↑eosinophils → d/t cross reactivity ★★★
  - LUNG CANCER; & TB, SLE, U.C.
- ★ Suborrheic keratosis
  - epidermal neoplasms "pasted on"
  - ★ FGFR3 mutation
  - Leser-Trelat sign: GI malignancy (Adenocarcinoma of stomach)
- ★ Epidermal Inclusion Cysts
  - sebaceous cyst/epidermoid cyst filled w/ keratinaceous debris
  - Gardner syndrome: germline APC mutation (FAP)
    - osteomas of sinuses, mandible, & desmoid tumors
- ★ Muir Torre Syndrome
  - ★ sebaceous adenomas associated w/ internal malignancies (colorectal & urothelial)
  - TQ: ★ MSH2 & MLH1 mutations (mismatch repair)
    - HPNCC subtype (AD)

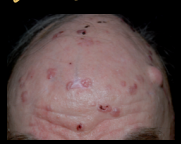


- ★ Cowden Syndrome
  - multiple hamartoma & tricholemmomas
  - PTEN germline mutation
    - plus colon polyps ★

- ★ Peutz-Jeghers Syndrome
  - STK11 mutation
  - oral/mucosal lentigines + hamartomatous GI polyposis (small bowel)

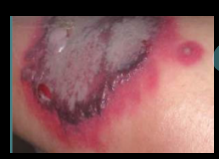


- ★ Gorlin Syndrome / Nevoid Basal Cell Carcinoma
  - PTCH germline mutation
  - medulloblastoma & jaw cysts



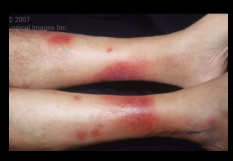
GI Dz/DISORDERS

- ★ Necrodermatitis enteropathica
  - Zn deficiency; child w/o hair
- ★ Necrolytic Migratory Erythema
  - glucagonoma → elevated glucose & diarrhea
- ★ Hereditary Hemorrhagic Telangectasias → AVMs
  - telangectasias / oral petechiae blanches w/ pressure; epistaxis
- ★ Pyoderma Gangrenosum
  - NØ dermatosis w/ painful ulcers w/ dusky border
  - leukemia



ulcerative colitis

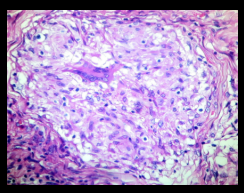
- ★ Erythema Nodosum
  - TQ: panniculitis, red, elevated, painful [Ø vasculitis]
  - TB, histo, coccidio, drugs
  - ↑NØ



★ Sarcoidosis

- unknown cause, dx of exclusion
- noncaseating granulomas
- hypercalcemia

TQ



★ asteroid & Schaumann bodies

LO4 Skin & systemic dz II

NEURO DZ

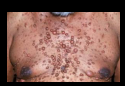
★ Tuberous Sclerosis

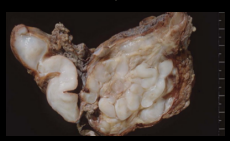
- (AD) TSC & TSC2 mutation
- hamartomas & benign neoplasms involving brain & other tissue
  → epilepsy, mental retardation, autism
- ★ [derm: ash-leaf patches, shagreen patches, angiofibromas, & subungal/periungal fibromas]
- giant cell astrocytoma, rhabdomyoma

★ Familial Neurofibromatosis

Neurofibromatosis I

- (AD) NF1 gene mutation = tumor suppressor gene
- ★ [neurofibromas, optic nerve gliomas, Lisch nodules, cafe au lait spots]
- tumor of schwann cells
  "bag of worms"





NF1 Neuro tumors & cafe au lait spots

Neurofibromatosis II

more CNS involvement → schwannomas

★ Sturge-Weber Syndrome

TQ

- port wine stain, venous angiomas, vascular ectasia (V1)
- glaucoma in a baby ★ leptomeningioma
- GNAQ mutation (sporadic)

★ Ataxia Telangectasia

- (AR) ATM gene defective DNA repair
- death in adolescence from infection or malignancy

CARDIAC DZ

★ Leopard Syndrome

★ Lentigines, cardiac conduction abnormalities, ocular hypertelorism, abnormal genitalia, pulmonary stenosis, growth retardation, sensorineural deafness

- (AD) PTPN11 gene (same as Noonan)

★ Carney Complex

★★★ TQ

[LAMB: lentigines, atrial myxomas, mucocutaneous myxomas, & blue nevi
NAME: nevi, atrial myxomas, neurofibromatosis, ephelides, & endocrine neoplasia]

★ PRKAR1A gene mutation

- Hypercortisolism & GH pituitary adenomas

AUTOIMMUNE

★ Scleroderma

excess collagen deposition, vascular damage
generalized = CREST syndrome

★ SLE

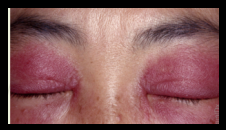
malar/butterfly rash

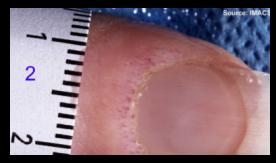
★ Discoid lupus erythematosus (DLE)

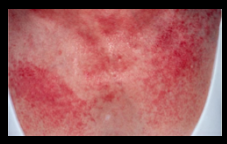
TQ ?

Ø systemic, Ø ANA antibodies
raised scar-like atrophic red plaques
→ scarring alopecia

- ★ SLE -like drug eruptions
  - ⊕ ANA antibodies & anti-histone
  - SHIP-E
- ★ Dermatomyositis T-cell mediated [CD4+] ★
  - heliotrope discoloration of upper eyelids
  - gottron papules - scaly rash on joints
  - ★ VISCERAL CANCERS
  - ★ Poikilioderma
    - hyper/hypopigmentation & telangiectasias
  - ★ Histo: [perivascular inflammatory infiltrates] ★



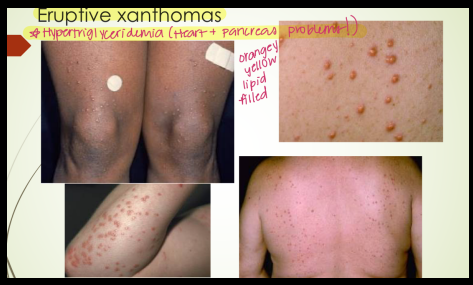




TQ

ENDOCRINE

- ★ Necrobiosis lipoidica diabeticorum
  - collagen degeneration
- ★ Pretibial Myxedema
  - Graves/Hashimotos
  - Nonpitting edema → deposition of GAGs (hyaluronic acid)
- ★ Xanthomas
  - severe chylomicronemia/triglyceridemia // underlying lipoprotein disorder
  - [eruptive] [tuberous]
  - ↳ palmar, xanthomas & xanthelasmas



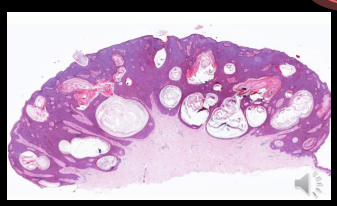
TQ

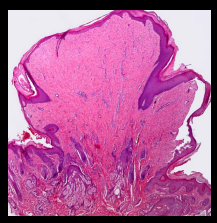
local = lipoprotein

L05 Benign Skin Neoplasms

TQ

- ★ Seborrheic keratosis: hyperkeratotic lesions of the epidermis
  - string sign - uniform depth
  - Leser trelat sign - adenocarcinoma of stomach
- ★ Acrochordon = skin tag (hyperplastic, soft dermis & epidermis
  - metabolic syndrome
  - Ø malignant threat



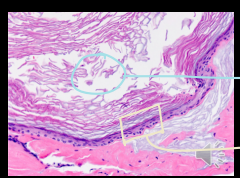


- ★ Epidermal cyst: implantation & proliferation of epidermal elements WITHIN the DERMIS
  - multiple = Gardner syndrome → APC mutation // FAP
  - central punctum

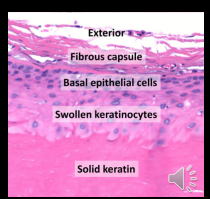
granular gardner

TQ

- ★ GRANULAR LAYER ★
  - Ø eccrine, sebaceous glands or hair follicles

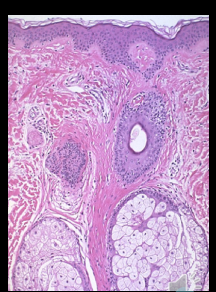


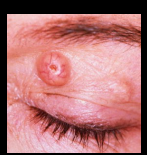
- ★ Trichilemmal (Pilar) cyst: 90% on scalp
  - derived from outer root sheath
  - ★ Ø granular layer, Ø central punctum ★



- ★ Sebaceous tumors: adnexal lesions on dermis
  - Muir-Torre syndrome ~ HNPCC
    - → MSH2, mismatch repair gene
    - → visceral malignancies

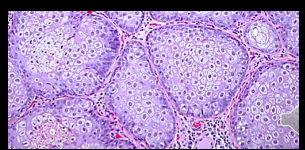
★ microsatellite instability ★



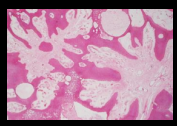


TQ

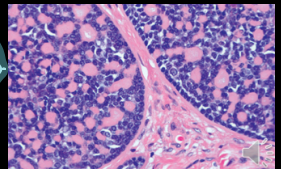
- filled w/ oil
- nodular / lobulated growth
- ★ LOOKS LIKE BASAL CELL ★



- ★ Eccrine Poroma
  - red scaly nodule on palms/soles → pigmented often^mistaken for melanoma
  - round, bland cells w/ elongated rete ridges



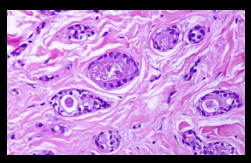
- ★ Cylindroma
  - Hereditary = Brooke Spiegler syndrome
    - CYLD gene
  - ★ blue, basaloid geometric nodules in DERMIS only



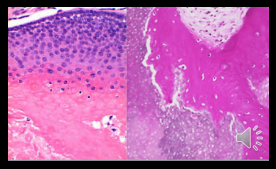
TQ

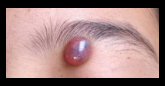
- ★ abundant BM deposition, + spherical pink droplets

★ **Syringoma**: fleshy papules on face / body
- tadpole shaped epithelial tubes w/ sclerotic background
- double layer of cells

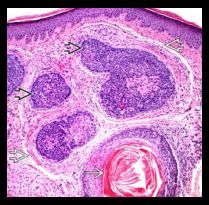


★ **Pilomatricoma**: solitary firm lesion from hair follicle
- ★ Gardner syndrome -like (?)
- activating β-catenin (CTNNB1 gene)
- located in dermis/hypodermis -- DEEP
- ★ [① ghost/shadow cells - sheets of dead keratinocytes; ② germinative matrix epithelial component (blue cells)]
- metaplastic bone formation ★

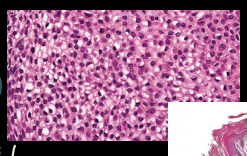


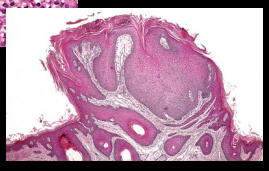


★ **Trichoepithelioma**: from rudimentary hair follicles
- multiple familial trichoepithelioma (MFT) - adolescence
- ★ papillary mesenchymal bodies @ bases of abortive hair follicles

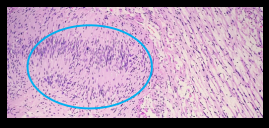


★ **Trichilemmoma**: follicular proliferation -- outer root sheath
- ★ Cowden syndrome (⊕hamartomas - visceral malignancy)
- ★ PTEN mutation
- glycogenated, clear cytoplasm
- basophilic palisading cells w/ thick/hyaline, BM material
- ★ PAS⊕ PASD⊕, diastase resistant



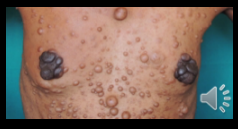


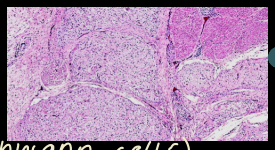
★ **Schwannoma**: peripheral nerve sheath tumor
- ★ Verocay bodies - parallel columns of elongated nuclei
- Antoni A - more cellular
- Antoni B - loose, less cellular ★



★ **Neurofibroma**: periferal nerve sheath tumor (schwann cells + nervous tissue)
- ★ NF1 biallelic inactivation
- [RAS cell growth signaling]
- nonencapsulated dermal lesion
- proliferation of all elements of peripheral nerves (not just schwann cells)
- cafe au lait spots, optic gliomas, lisch nodules, multiple cutaneous neurofibromas
- ★ [HETEROZYGOTES (AD), complete penetrance, variable expressivity] ★
- 1/2 de novo, 1/2 genetic

TQ

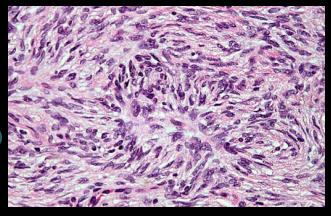




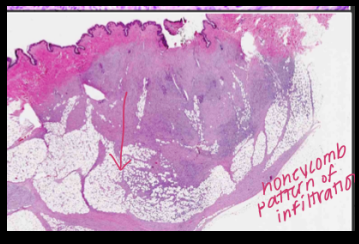
plexiform MI subtype

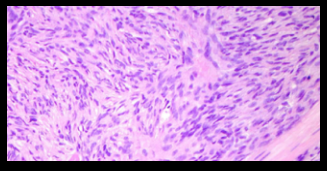
★ NF2: bilateral vestibular schwannoma - CNVIII & other CNS tumors
- AD -- heterozygotes

★ **Fibrous Histiocytoma** (dermatofibroma): proliferation of fibroblasts
- asymptomatic, ⊕Fitzpatrick sign → dimples when squeezed
- multiple: immunocompromised
- ★ [ill defined dermal lesion hyperplasia; storiform/fascicular pattern]



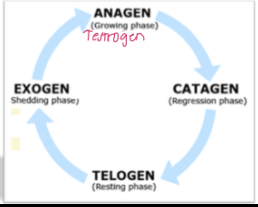
★ **Dermatofibrosarcoma protuberans**: low grade, aggressive malignancy
- males 25-40, high recurrence
- spindle shaped pattern
- invades fat & muscle (honeycomb)
- ★ t(17,22)(q22;q13) COL1A1-PDGFB fusion

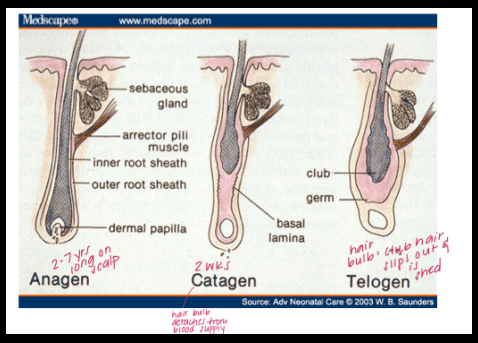




Lolo Hair & scalp

- ANAGEN
- CATAGEN
- TELOGEN
- EXOGEN





Leukonychia - striated

TQ

* **Mee's lines**

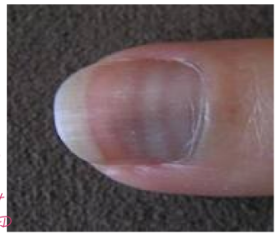
Heavy metal poisoning

ARSENIC

- loss transparency @nail plate

will grow out

NORMAL NAIL BED



@nail plate NOT NAIL BED

Nail bed Muercks nail = blanching

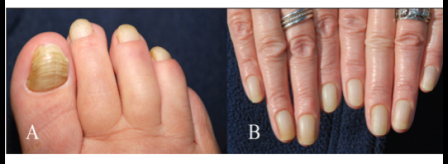
TQ

* **alopecia areata**

- exclamation hairs
  - = active stage, give steroid
- pitting nails

Yellow nails

TRIAD [yellow nail + pulmonary + chronic sinusitis / LE edema]



TQ

Hair excess

INDEPENDENT OF ANDROGENS

- Hypertrichosis

Hairy nevus anorexia nervosa porphyria

yellow hairs grow in patches

TQ

Effluvium

happens all @ once

- Stressors that cause hair roots to be pushed prematurely into resting state

Telogen effluvium

women after childbirth

pushed into premature resting : shed during resting

@inflammation or scarring

- Chemotherapy causes hair to bypass the normal telogen shedding and come out in the anagen phase

Anagen effluvium

love hair during growth phase (anagen)

* onychomedesis → prox shedding

trauma, illness, kawasaki

L07 OMM & derm

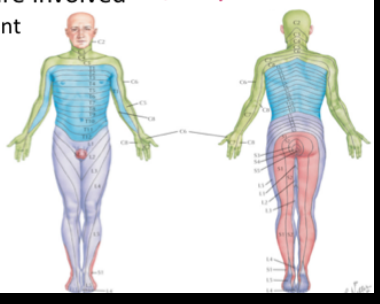
Objectives

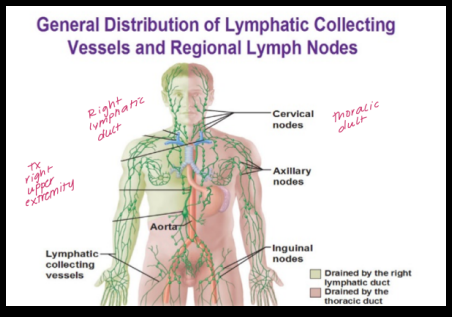
- Apply Osteopathic tenets to determine appropriate treatment of dermatologic conditions
- Utilize knowledge of the underlying pathology of dermatologic conditions, patient's physical and mental state to determine appropriate treatment with OMT
- Apply knowledge of dermatomes and neurologic pathways to determine appropriate OMT for given dermatologic conditions
- Apply knowledge of lymphatic and vascular systems to determine appropriate OMT for given dermatologic conditions

Rational Treatment

#1

- Examine the patient – Inspect, palpate and check range of motion if appropriate
  - What dermatomes are involved → shingles!
    - Helps direct treatment
  - TART findings (chronicity / acuteness)
    - Bogginess
    - Hypertonicity
    - Edema
    - Skin Temperature
      - Increase/Decrease





Lymphatic Considerations

- When treating conditions with edema or localized infections → weeping
- Check for somatic dysfunctions at (☆ choke points)
  - Thoracic Inlet – Sibson's Fascia, 1st Ribs, Clavicle
  - Thoracic Diaphragm
  - OA/AA
  - SI Joint/Hip
  - Popliteal Fossa/Fibular Head

check axial, if good, don't TX

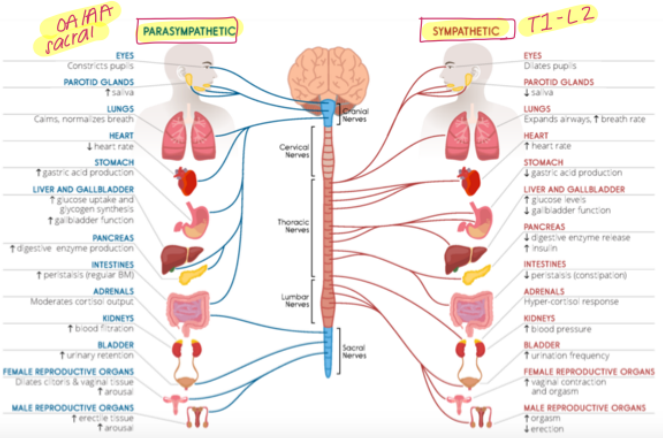
Osteopathic Approach to Treatment

- What can be done to enhance the medical treatment of skin disorders?
  - Counseling
  - Support groups
  - Dietary modification - the GUT
  - OMT!
  - Stretching and Exercise! ↑ blood flow / lymph

☆ Autonomic Nervous System

know levels! TQ

OA AA sacral

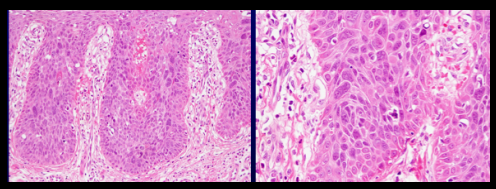


L08 Nonmelanocytic skin cancer

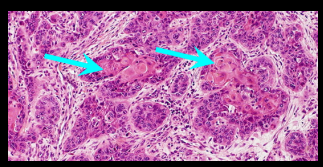
★ SQUAMOUS CELL CARCINOMA

RF: UV light → DNA damage & p53 mutation
UVB = most carcinogenic (intermed. wavelength)

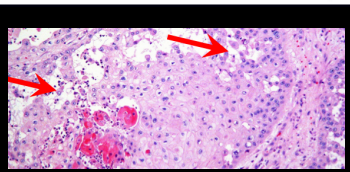
★ Bowen dz - SCC in situ
full thickness keratinocytic abnormality
rough irregular /scaly patches
pleiomorphic cells w/o invasion



★ Invasive SCC
thin plaque / scaly papule / ulcer / nodule
→ well differentiated type
★ keratin pearls ★

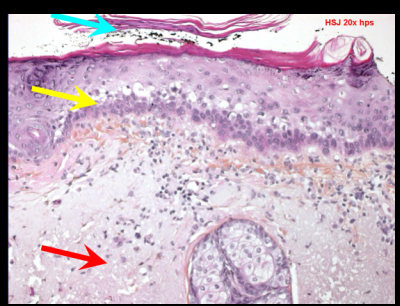


→ Acantholytic type
★ floating tumor cells ★



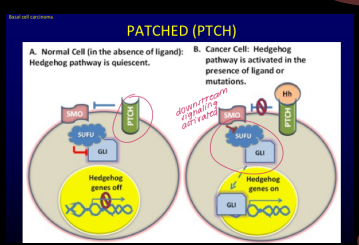
★ Actinic keratosis = precancerous @ sunex posure spots
- rough patches on skin
- basal layer atypia, hyperkeratosis & parakeratosis
- dermal elastosis

TQ: localized to basal layer



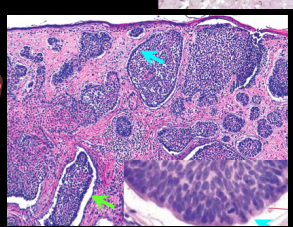
★ BASAL CELL CARCINOMA ★

RF: UV light
Path: PTCH, p53
px: papule / nodule w/ telangectasias

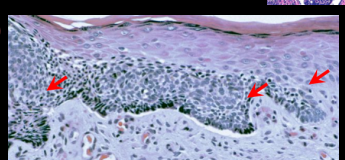


TQ

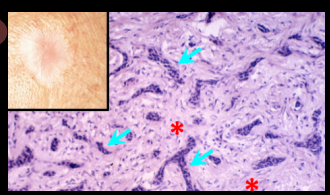
→ Nodular
basaloid, palisading & peritumoral clefting



→ Superficial
budding, MULTIFOCAL



→ Morpheaform
scar-appearing
★ cords of basaloid cells in desmoplastic stroma

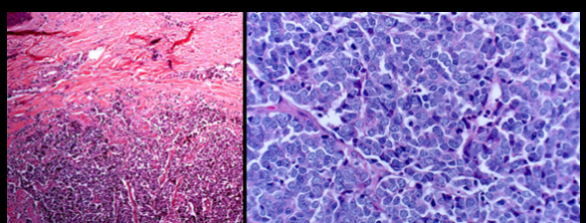


Tx: cut, burn, freeze

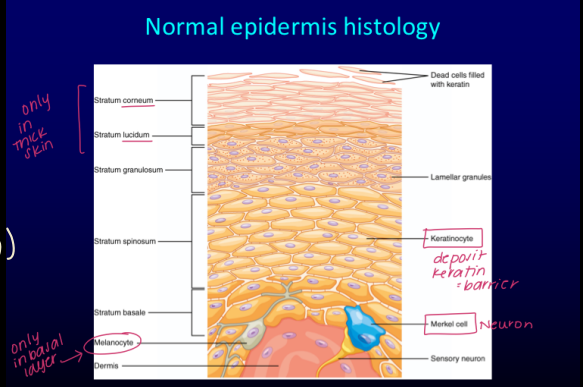
Worst one! perineural invasion

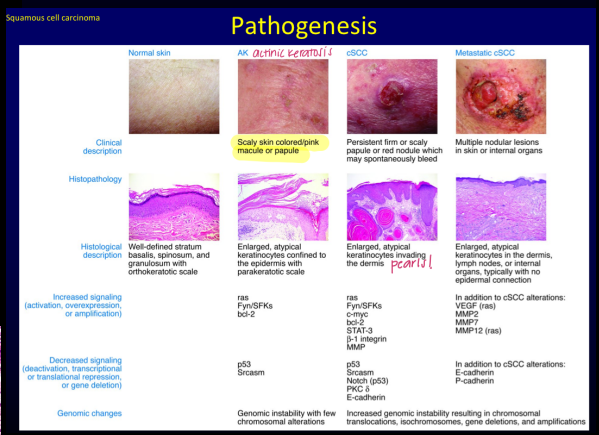
★ MERKEL CELL CARCINOMA ★

aggressive neuroendocrine tumor
CK20, CD56, synaptophysin, chromogranin, EMA
rapid growing - fatal
salt & pepper nuclei!



Ø palisading, Ø cleft



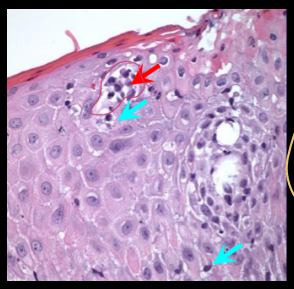


★ MYCOSIS FUNGOIDES ★

★ cutaneous T cell lymphoma → CD4+ cells ★★ (CD8⊖)

TQ
- patch
- plaque
- tumoral
- sezary cell → Sezary syndrome

Pautrier Abscesses

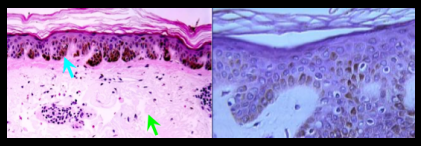


CD4+ only!

Sezary syndrome: erythroderma (>80%) + lymphadenopathy + sezary cells

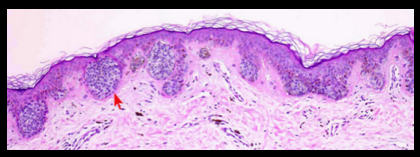
L09 Melanocytic Lesions

★ Lentigo: age spots, overproduction of melanin
- elongation of rete ridges & ↑pigmentation
- linear melanocytic hyperplasia



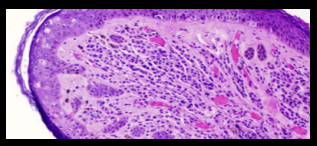
★ melanocytic nevus: moles
- acquired BRAF/NRAS mutations
- regular shape, border, symmetry

→ junctional type
- macule w/ nests of melanocytes @ DE jxn



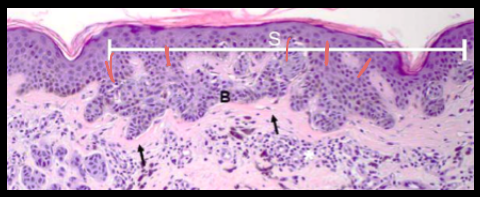
→ intradermal type
- nodule w/ nests in upper dermis

→ compound
- mixed features



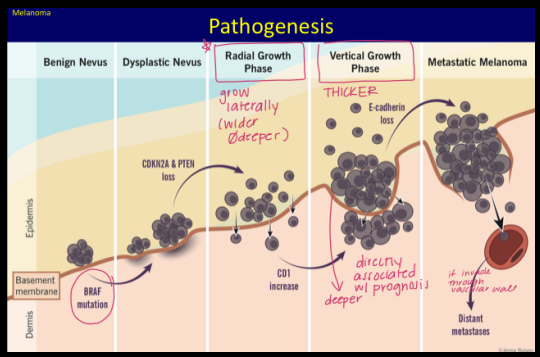
★ dysplastic nevus
- cytologic atypia, potential melanoma
- Px: >5mm, irregular, variable colors/borders
- LOOKS LIKE MELANOMA ON OUTSIDE

★ [melanocytic nests extending beyond 3 rete ridges]



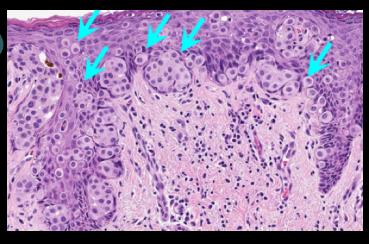
★ melanoma
- d/t UV light
- path: [BRAF/RAS, CKND2A, TERT promoter]
- Hutchinson's sign
- ABCs → asymmetry, border, color

TQ [⊕ S100, HMB-45, melanA, tyrosinase]
- [if seen in DERMIS, its invasive]
  - → in situ = epidermis only

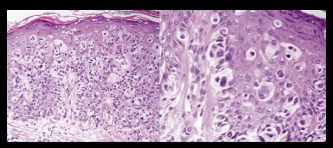


★ GROWTH
- radial - horizontal - in situ
- vertical - deep into dermis

★ SPREAD
- pagetoid - in situ
  - pale cytoplasm clumps in epidermis

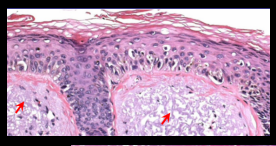


★ INVASIVE
- Ø maturation
- Beyond basal layer!

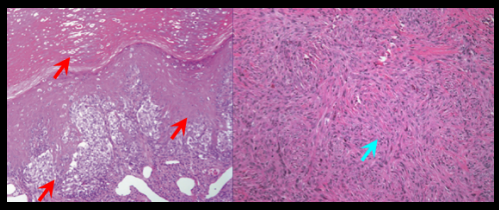


→ lentigo maligna melanoma
- atypical cells in basal layer

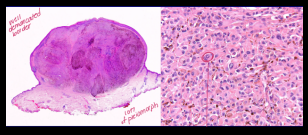
flat growth
multinucleated melanoma cells @ DE jxn
marked elastosis (red)



→ acral lentiginous melanoma
thick skin
spindle dermal component & pagetoid spread



→ Nodular melanoma
vertical growth
intranuclear inclusions
↑metastases



TQ melanoma prognosis based on depth of invasion

Melanoma

Breslow's system thickness (FYI)

- Measure tumor thickness with ocular micrometer at right angles to surface of adjacent normal skin from (a) top of granular layer of overlying epidermis OR from ulcer base over deepest point of invasion to (b) deepest invasive tumor cells
- 2009 AJCC Staging System employs following thresholds for thickness: T1: ≤ 1.00 mm thickness, T2: 1.01 to 2.00 mm thick, T3: 2.01 to 4.00 mm thick, T4: more than 4.00 mm
- 10 year survival: 92% for melanoma < 1.00 mm thick; 80% if 1.01 to 2.00 mm thick; 63% if 2.01 to 4.00 mm thick; 50% if > 4.00 mm thick

THICKER = poor prognosis
→ distance from top to bottom

Melanoma

Invasive melanomas

	Radial Growth	Invasive components
Superficial spreading	Nests and pagetoid spread	Epithelioid
Lentigo maligna	Basal layer, Pagetoid spread uncommon	Spindled or epithelioid, solar elastosis
Acral lentiginous	Pagetoid spread	Spindled elongated nuclei
Nodular	None	Most commonly epithelioid

all [⊕ HMB45 ⊕ S100 ⊖ cytokeratin

- Keep in mind: HMB45, melanA and S100 are melanocytic markers, that can be positive in both benign nevus and melanoma

WANG PQs

Skin tumors 1

✓ 1. C or D ? tan nodule w/ greasy colored surface → seborrheic keratosis
✓ 2. B
✓ 3. C
✓ 4. C
✓ 5. A
✓ 6. B
✓ 7. B
✓ 8. D
✓ 9. B
✓ 10. C
✓ 11. E
✓ 12. C
✓ 13. D
✓ 14. C
✓ 15. E
✓ 16. D or E lobular, plate-like growth of pale pink, glassy cells w/ palisading → trichilemmoma
✓ 17. A
✓ 18. B CD34+
✓ 19. D
✓ 20. D spindle cell prolif. & S100+ = Neurofibroma
✓ 21 C
✓ 22. E
✓ 23. B

Skin tumors 2

A 1. C dysplasia limited to basal layer = actinic keratosis → can develop into SCC or BCC
✓ 2. E
✓ 3. E
✓ 4. B Morphea BCC → perineural invasion
✓ 5. C
C 6. B ? Invasive = Mohs surgery
✓ 7. B
B 8. C ? rough scaling macule / waxy lesion → Basal cell
✓ 9. B superficial type → multifocality
✓ 10. E nodular basal cell → PTCH mutation
✓ 11. D ⊕CK ⊕CD56 ⊖CD45
✓ 12. D → Merkel cell
C 13. E ★ only in epidermis! Ø S100 beyond basal layer
✓ 14. E ★★ → full thickness epidermal dysplasia = Bowen Dz
✓ 15. D
✓ 16. A pruritic rash ; ⊕CD3 ⊖CD20 Mycosis Fungoides → Ø lymphadenopathy, Rash < 80% body
C 17. E
✓ 18. D CD4⊕ CD8⊖
✓ 19. A
✓ 20. E Erythroderma, lymphadenopathy, & Sezary cells → Sezary Syndrome >80%

Skin tumors 3

✓ 1. E
✓ 2. C
✓ 3. C melasma d/t estrogen ? *pregnancy*
✓ 4. E
✓ 5. D
✓ 6. E
✓ 7. D
✓ 8. E
✓ 9. C
✓ 10. B
✓ 11. (A) / B compound nevus
✓ 12. A
A 13. ~~B / E?~~ Dysplastic Nevus → basal layer only ; >3 rete ridges long
✓ 14. C
✓ 15. C pagetoid spread — melanoma in situ
✓ 16. D ↳ Beyond basal layer ! (w/o dermal involvement)
✓ 17. B
✓ 18. E
✓ 19. C
B 20. ~~C~~ Nodular type BCC