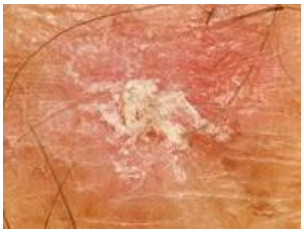
# Epidermal tumors, Cysts, & Misc.

## General

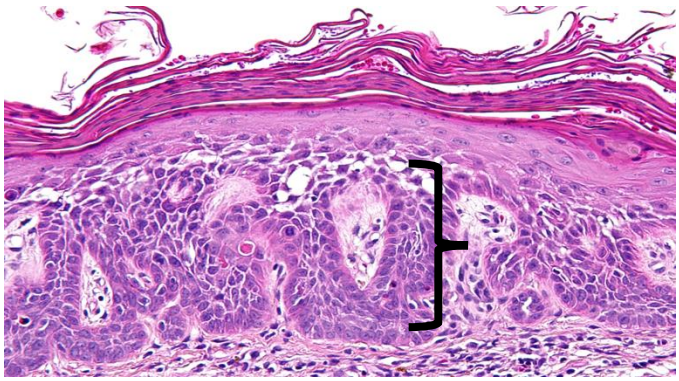
Keratinocytic malignancies are more common than all other cancers combined.
95% of tumors are attributable to Ultraviolet (UV) radiation (mainly from sun, but also artificial sources, like tanning beds).
Other risk factors: immunosuppression, smoking, environmental exposures (e.g., arsenic).

## Premalignant keratoses



Actinic keratoses and SCCIS are precursor lesions to invasive SCC.
Non-obligate: Can spontaneously regress, remain stable, or progress.
All are often related to UV exposure→ found on sun-exposed fair-skinned elderly.
Tx: liquid nitrogen, 5-FU, shave, curettage

### Actinic Keratosis *"AK"*



**Very Common!**
**Precancerous**, relatively low risk of malignancy.
Scaly erythematous patch/plaque;

**Intraepidermal squamous dysplasia that is *not* full-thickness**

- Atypical keratinocytes in lower third of epidermis.
- Enlarged, hyperchromatic or vesicular nuclei.
- Alternating orthokeratosis and parakeratosis
- Sparing of cutaneous adnexa
- Solar elastosis in dermis
- Can see loss of granular layer.

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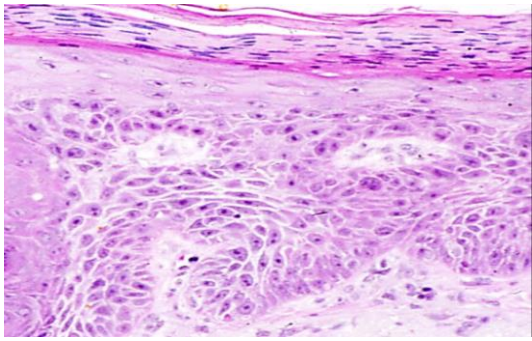
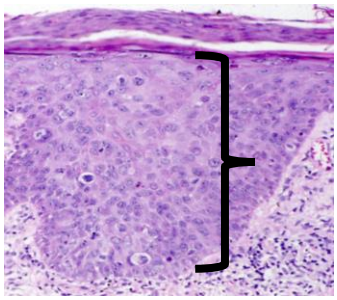


**Subtypes**: *(no clinical significance, just different appearance)*
Lichenoid AK—dense band-like inflammation at interface
Hypertrophic AK—epidermal hyperplasia with marked parakeratosis
Pigmented AK—increased melanin pigmentation
Proliferative AK—budding of dysplastic epidermis
Acantholytic AK—acantholysis

### Squamous cell carcinoma in situ *aka SCCIS or Bowen's disease*



**Replacement of the *full-thickness* of the epidermis by atypical keratinocytes.**
Absence of maturation and frequent dyskeratotic keratinocytes. May have a pagetoid and disorganized appearance. Loss of granular layer. Mitotic figures above spinous later.

Virtual slide 2 3

**Premalignant keratoses related to a specific *non-UV* exposure:**

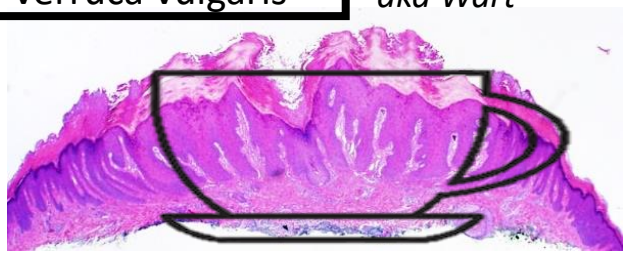
**Arsenical keratosis**—squamoproliferative skin lesions with or without squamous dysplasia in the setting of chronic arsenic exposure. Usually on hands or feet in countries with contaminated groundwater.

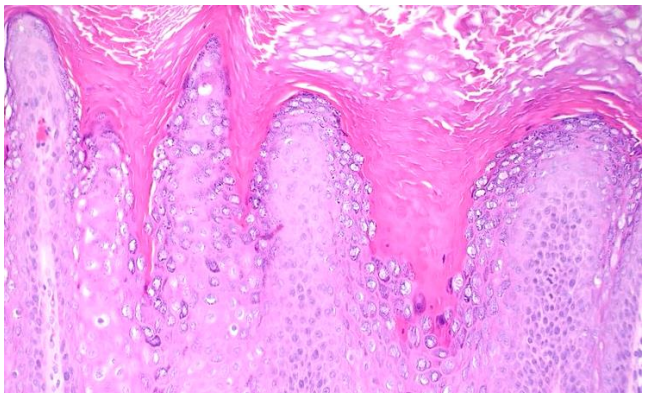
**PUVA keratosis**—well-circumscribed squamoproliferative lesion with up to mild squamous dysplasia in the setting of prolonged psoralen and ultraviolet A (PUVA) treatment for a skin condition (e.g., psoriasis)

# Benign lesions

## Verruca vulgaris

*aka Wart*





**Common. Benign. HPV-induced, circumscribed squamoproliferative** lesion.

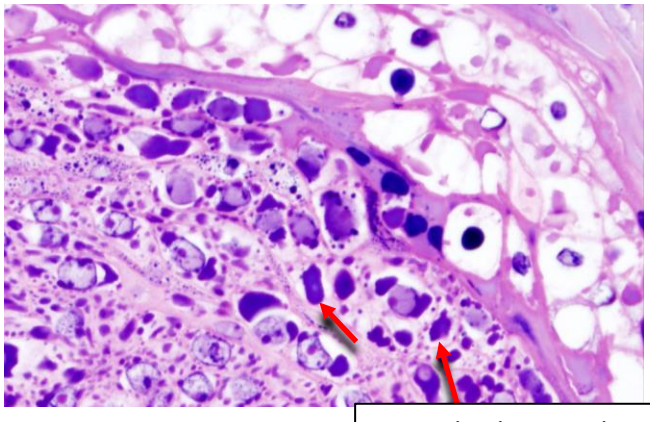
Single or multiple verrucous, keratotic papules.
**Cup-like rete ridges** (angled toward the center).
**Papillomatosis** ("church spires"). Acanthosis.
**Hyperkeratosis** often with **parakeratosis** (classically in columns over papillae)
**Hypergranulosis.** Keratohyalin granules.
**Koilocytes** may be variably present.
Can see other viral inclusion-like nuclear changes.

Most common on hands and fingers.
Most common HPV subtypes: 1, 2 (usually different from genital infections)

Virtual slide 2 3

## Verruca plantaris and Verruca palmaris

*aka Palmoplantar Wart*



Keratohyalin granules

**Common. Benign. HPV-induced, circumscribed squamoproliferative** lesion on the soles (*plantaris*) or palms (*palmaris*). Can be single or multiple. Often painful.

Similar to above, but often with more *mild* papillomatosis.

"*Myrmecia*" (ant-hill) form can be endophytic and has coarse, prominent keratohyalin granules.

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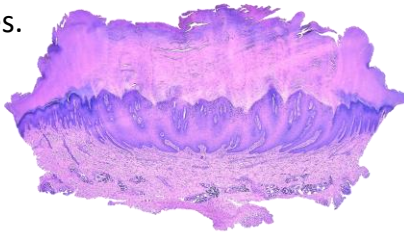
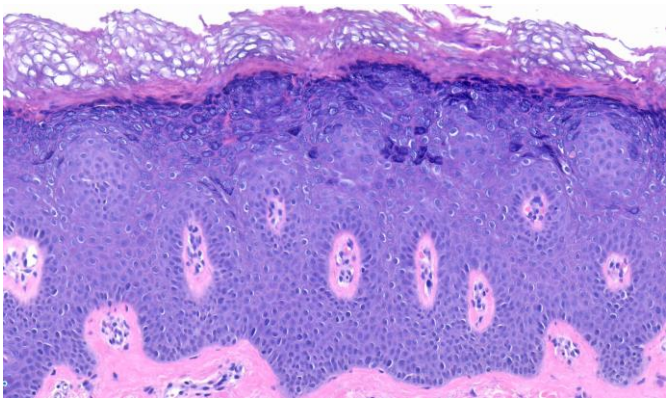


## Verruca plana

*aka Flat Wart*



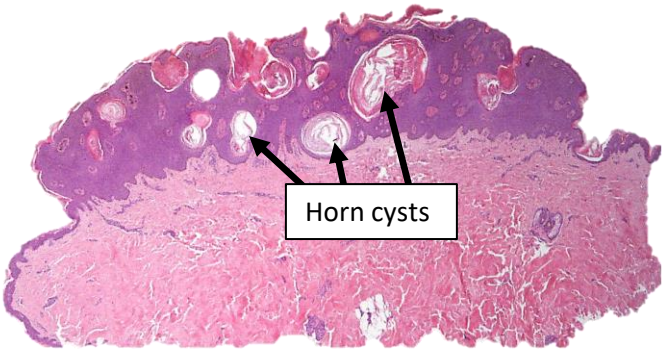
**HPV-induced** benign epidermal proliferation characterized by several smooth, skin-colored to light brown **flat-topped papules.**

**Orthokeratosis**
**Mild acanthosis;**
Hypergranulosis;
Koilocytosis.
Minimal papillomatosis (hence flat)

Virtual slide 2

## Seborrheic Keratosis

*"SK"*




**Benign** intraepithelial neoplastic proliferation encountered in **aging skin**.
Often on trunk. "***Stuck-on***" appearance.

**Well-circumscribed**
**Flat base**. **Acanthosis**.
Papillomatous outlines
**Hyperkeratosis**, which can appear as "**horn cysts**" with tangential sectioning of invaginations.
*No* dysplasia. Keratinocytes are small and bland.
Can contain melanin.

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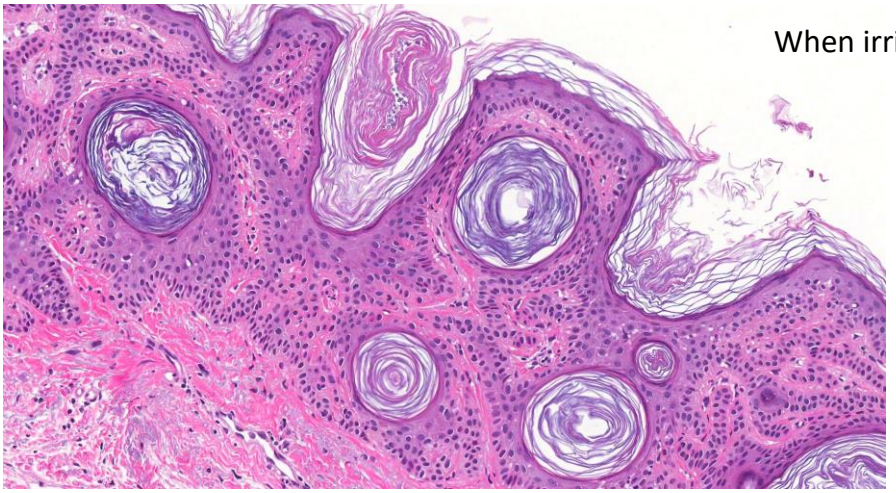
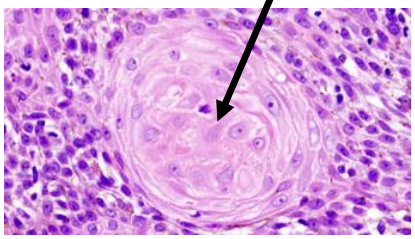
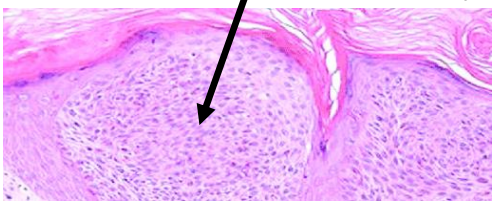


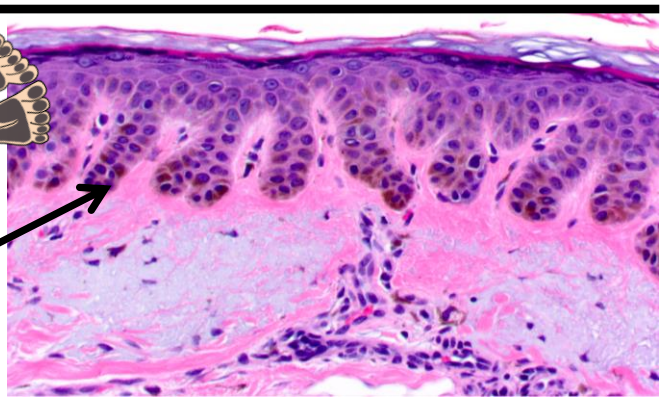
When irritated→ squamous eddy formation



Can have clonal nests of keratinocytes



## Solar Lentigo



**Clinical**: Very common brown macule. Due to sun damage (UV exposure). Esp. on face and dorsal hands.

**Micro**: Well-circumscribed intraepidermal keratinocyte proliferation. **Hyperpigmented** basal layer, often with **elongated, clubbed rete ridges**. Usually ↑ melanocytes, but not nests. Solar elastosis. No dysplasia/atypia.
Think ***"Dirty Feet"***

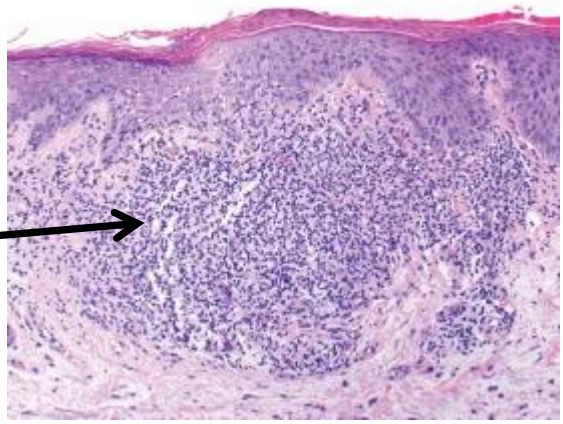
Virtual slide

## Lichen planus-like keratosis

*"LPLK"*

*aka Lichenoid keratosis*

**Benign** intraepidermal keratinocytic neoplasm with features reminiscent of a seborrheic keratosis and an additional **superficial dermis chronic inflammatory infiltrate with interface change**, probably reflecting regression.



Well-circumscribed

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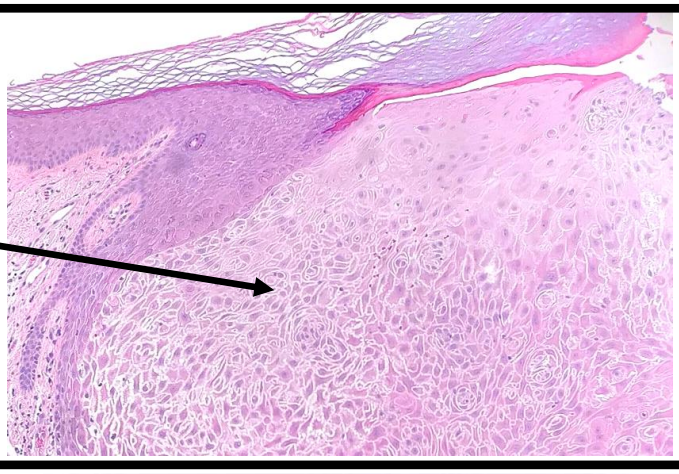
## Clear cell acanthoma



**Benign**. Unclear if neoplastic or reactive.

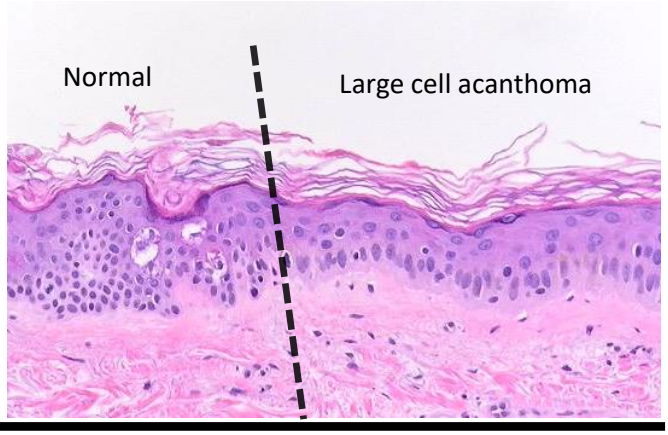
Sharply demarcated intraepidermal keratinocytic proliferation with **clear cell change**

***No*** squamous dysplasia (DDX is SCCIS!)
Often overlying parakeratosis and PMNs.

Epidermal hyperplasia resembles psoriasis.
Clinical: Erythematous to brown papules

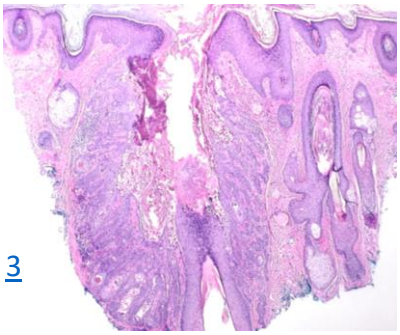
Virtual slide 2

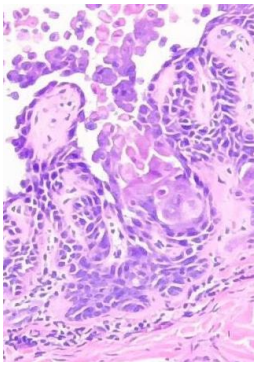
## Large cell acanthoma




**Benign**.
Sharply demarcated intraepidermal keratinocytic proliferation showing mild acanthosis and containing **enlarged keratinocytes (2x normal size).**
Epidermal flattening. Basketweave hyperkeratosis.
***No*** squamous dysplasia (no pleomorphism, smooth nuclear contours). Virtual slide
Clinical: Brown macules on sun exposed skin of elderly

## Warty dyskeratoma





**Benign** endophytic squamoproliferative lesion arising in association with a pilosebaceous unit and showing prominent **acantholytic dyskeratosis**.
**Well-circumscribed, cup-like invagination**.
***No*** atypia. Virtual slide 2 3

Clinical: Solitary papule or small nodule.

## Other "Keratoses"

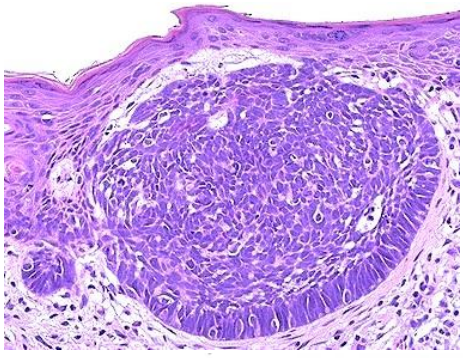
Generally, "Keratosis" is a non-specific descriptive term that refers to a keratinocyte lesion. They can be dysplastic (e.g., actinic keratosis) or non-dysplastic (e.g., seborrheic keratosis). This can be incorporated into descriptive diagnoses too, (e.g., "verrucous keratosis (see comment)" for a lesion reminiscent of a wart). "Acanthoma" is a similar term and suggests epidermal hyperplasia.

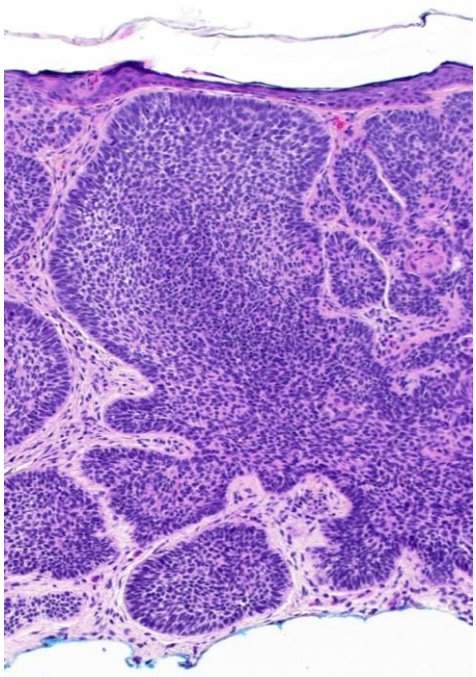
| Benign Keratosis | Features |
|---|---|
| Acantholytic acanthoma | Suprabasal or full-thickness acantholysis in a papillomatous epidermis |
| Acantholytic dyskeratotic acanthoma | Dyskeratotic corps ronds and grain in association with acantholysis |
| Epidermolytic acanthoma | Epidermolysis with clumped keratohyalin granules |
| Granular parakeratotic acanthoma | Retained keratohyalin granules in stratum corneum |
| Psoriasiform keratosis | Verrucous hyperplasia with parakeratosis and intracorneal neutrophils |
| Melanoacathoma | Dendritic benign melanocytes within a seborrheic keratosis background |

# Malignant

## Basal Cell Carcinoma

*"BCC"*






**Most common malignancy** in humans (and ~80% of skin cancers).
Locally aggressive and destructive behavior
Very low metastatic potential (< 0.1%)
Slow-growing.

Arise from epithelial cells of epidermis or from hair follicle.
Caused by chronic sun damage→ most common on head and neck
Clinically, classically: pink papule with arborizing vessels

**Universal morphologic finding:**

- **Basaloid cells** with increased N/C ratio and hyperchromasia

*Frequently also present:*

- Nests with **peripheral palisading**
- **Cleft formation** between the tumor and surrounding stroma
- Apoptosis
- Fibromyxoid stromal changes

Note: Some focal keratinization may be present!

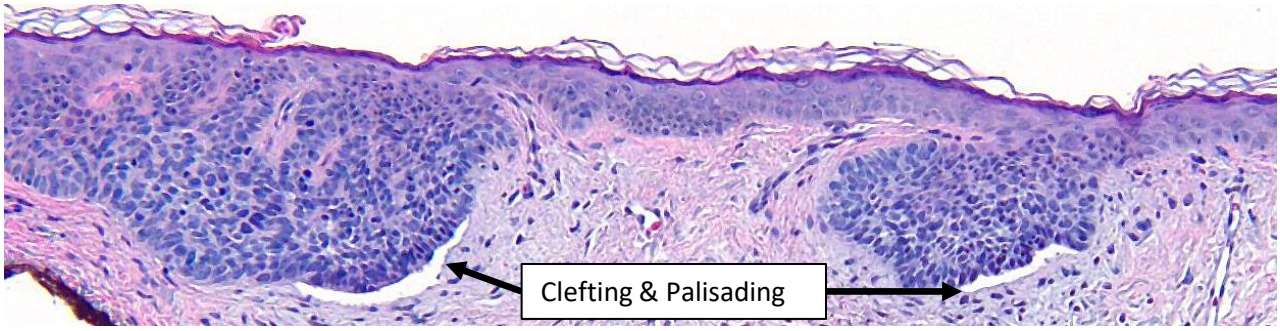
May mimic adnexal structures, making margins challenging. However, basal cell carcinoma tumor cells should have darker chromatin, more apoptosis and mitoses, and paler cytoplasm than the hair follicles.

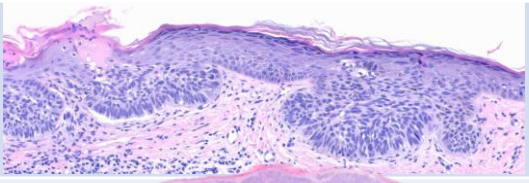
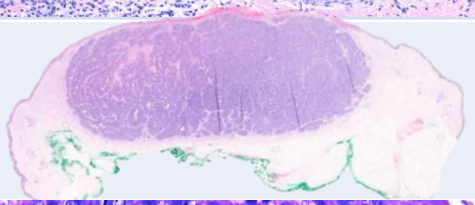
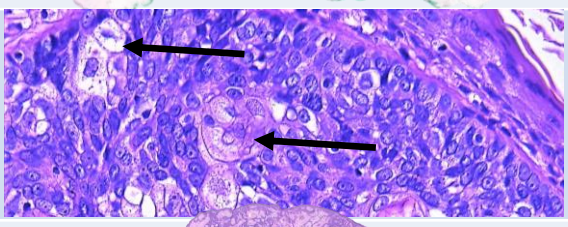
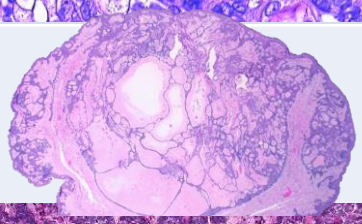
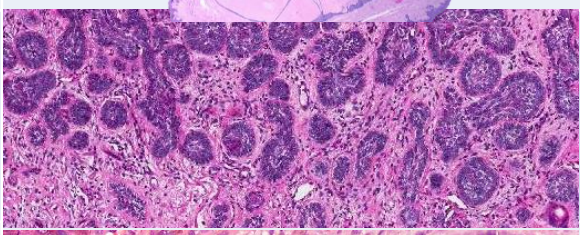
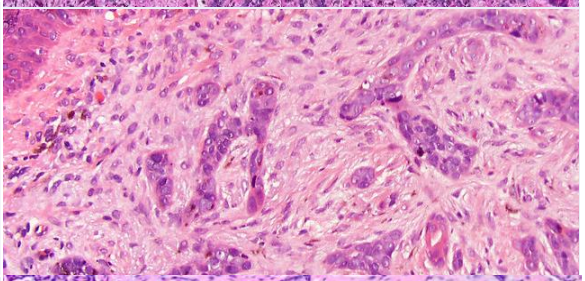
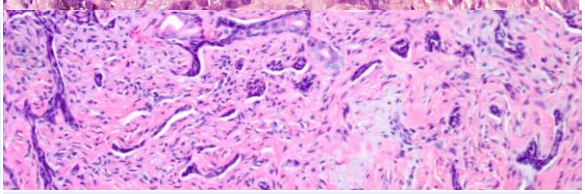
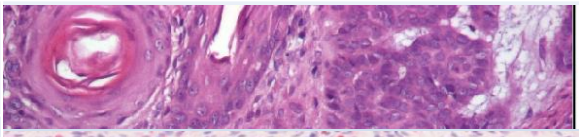
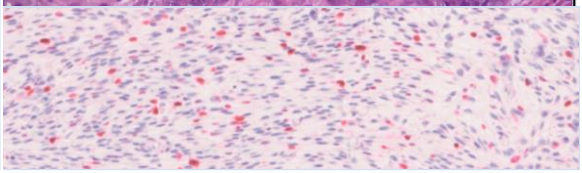
**Molecular**: dysregulation of the hedgehog pathway, as a result of deletion of the PTCH1 gene or overactivation of SMO protein (not necessary for Dx).

***Pediatric BCC?*** → consider Gorlin's Syndrome (nevoid BCC syndrome)→ germline PTCH1 mutations

**High risk features**: Certain subtypes (see next page) and PNI

**Stains:** (+) p40, CK5/6, BerEP4. (-)CK20, EMA, CEA
BerEP4 will stain BCC but not SCC



| Risk | Subtype | Unique Features | |
|---|---|---|---|
| Low risk | **Superficial** | Confined to papillary dermis.<br>Often multifocal epidermal connection.<br><br>Virtual slide 2 |  |
| | **Nodular** | Well-circumscribed, variably sized large nodules.<br>Most common type.<br><br>Virtual slide 2 |  |
| | **With adnexal differentiation** | BCC + adnexal differentiation<br>Shadow cells of matrical differentiation, mature sebocytes, ducts, glands, etc…<br>*(no change in risk)*<br><br>Virtual slide |  |
| | **Fibroepithelial**<br><br>*("Fiboepithelioma of Pinkus")* | Multiple strands of thin, Interanastamosing basaloid epithelium surrounded by fibroblastic stroma.<br><br>Virtual slide 2 |  |
| High risk | **Micronodular** | Infiltrative, permeative, and tentacular growth pattern. Predominantly small nests. Often extends to deep dermis or beyond.<br><br>Virtual slide |  |
| | **Infiltrating** | Variably sized, somewhat jagged, elongated nests and strands of infiltrating normal dermal collagen. Irregular, poorly-circumscribed permeating pattern of invasion at deep edge with spiky projections.<br>Frequent PNI<br>Virtual slide 2 |  |
| | **Sclerosing/ morphoeic** | Very narrow cords of tumor compressed by sclerotic collagenous stroma. Frequent PNI.<br><br>Virtual slide |  |
| | **Basosquamous** | Distinct areas of ***both*** BCC and SCC. |  |
| | **With Sarcomatoid differentiation** | BCC + malignant mesenchymal stroma (sarcomatous). Usually rapidly growing new lesion (or rapid enlargement of old lesion). |  |

*Note: many subtypes (particularly micronodular, infiltrating, and sclerosing), have histologic overlap (and may eventually be grouped together), so the most important thing is to get them in the right group of high-risk vs low-risk.*

# Squamous Cell Carcinoma *"SCC"*

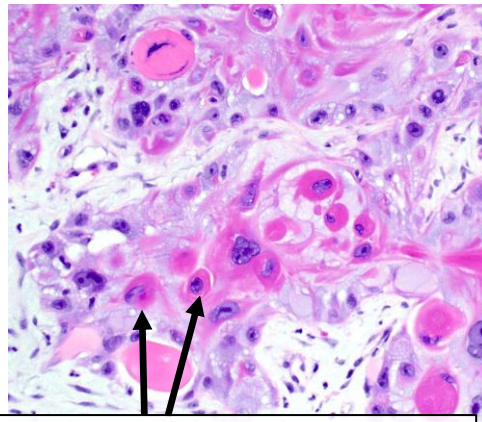
Second most common form of skin cancer (20% of cutaneous malignancies)
Locally destructive; Low metastatic potential—usually cured by excision if low-risk.
Risk factors: UV sun exposure, immunosuppression, radiation, chronic damage (e.g., burns)
Tx: Depends on size, location and depth of invasion: Excision, Mohs micrographic surgery, Radiation

**Infiltration of dermis** by islands of atypical cells with variable keratinization.
**Develops from an in-situ component** (AK or SCCIS), which may be present nearby
Squamous differentiation can be confirmed by histology (keratinization, intercellular bridges) or IHC

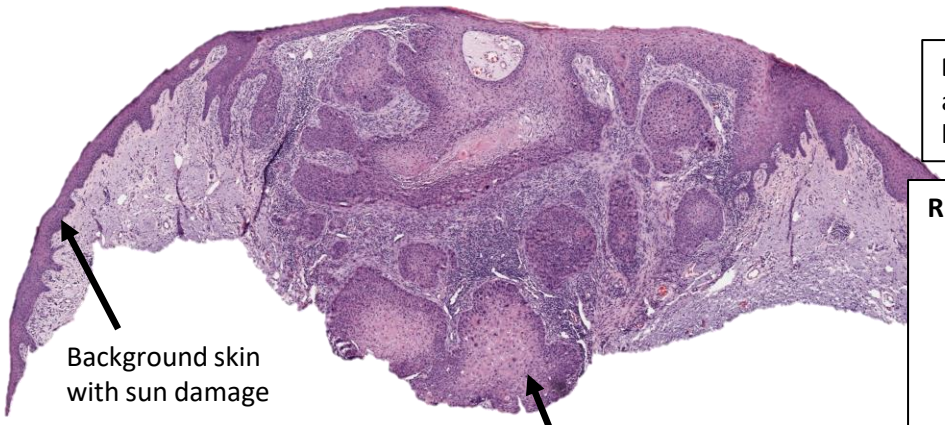
IHC: (+)p63/p40, CK5/6, HMWCK 34βE12

Virtual slide 2 3

***Histologic grade*** (Although not well-standardized, usually follows):
Well-differentiated: Minimal atypia. Abundant keratinization.
Moderately-differentiated: More atypia and disorganization.
Poorly-differentiated: Difficult to establish squamous differentiation (may require IHC or be focal). Higher grade atypia.



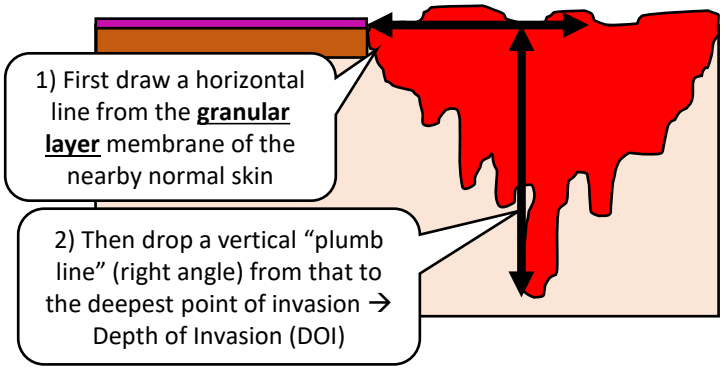
**Dyskeratotic cells**: keratinocytes with abnormal, premature, disorganized keratinization.

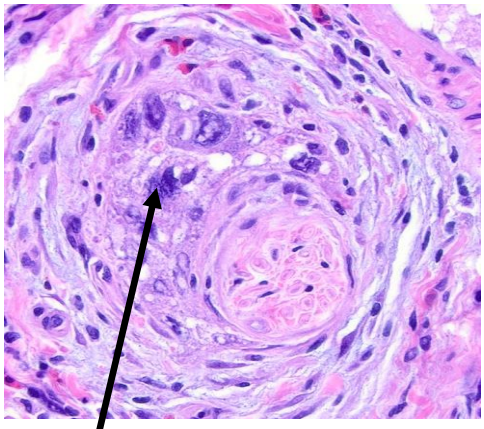



***Findings that suggest invasion:***
**- Jagged** interface with dermis
- Aberrant **deep keratinization**
- Single cells infiltration

**Risk factors for metastasis (high risk):**
- Thickness >2mm
- PNI
- Location on ear or lip
- Poorly-differentiated
- Clark level IV or V invasion (reticular dermis and subQ)

## Measuring Depth of Invasion (DOI):



**Perineural invasion** (PNI) independent poor prognosticator. A nerve diameter of greater than or equal to 0.1 mm is included in the definition of "deep invasion" in pT status.

***Verrucous SCC***

Extremely well-differentiated, low-risk with pushing border and acanthotic tongue-like papilla. Hyperkeratosis. NO infiltrative growth. Minimal atypia. Associated inflammation at base. Plaque or condylomatoid clinically. Locally aggressive, but metastases do not occur.

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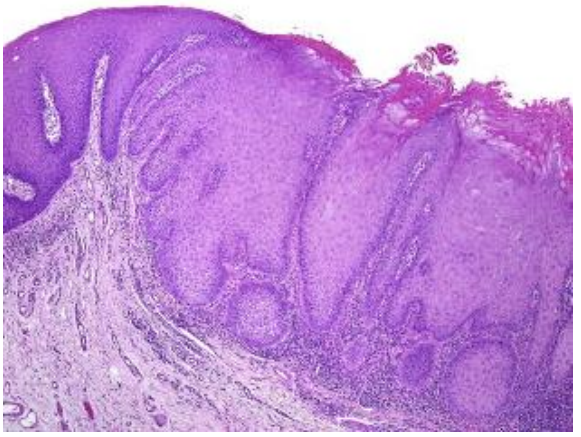
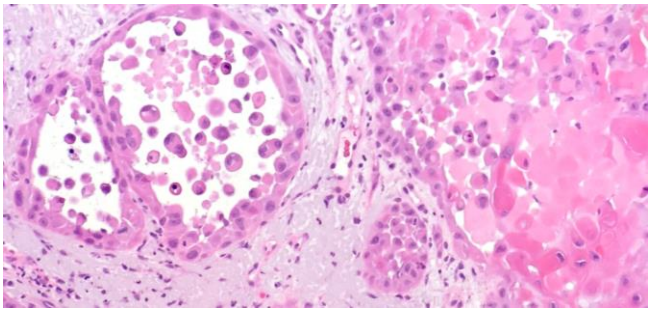


***Acantholytic SCC***

Acantholysis (cell separation) producing variably sized spaces within tumor.
Can mimic glandular or vascular lesions.
Previously thought to be more aggressive, but likely normal risk. Virtual slide 2

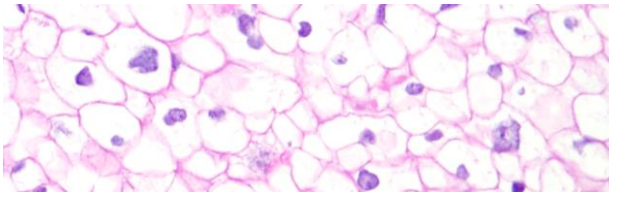


***Lymphoepithelial carcinoma***

Poorly-differentiated SCC admixed with a variable amount of lymphoplasmacytic infiltrate.
Very rare.

***Clear cell SCC***

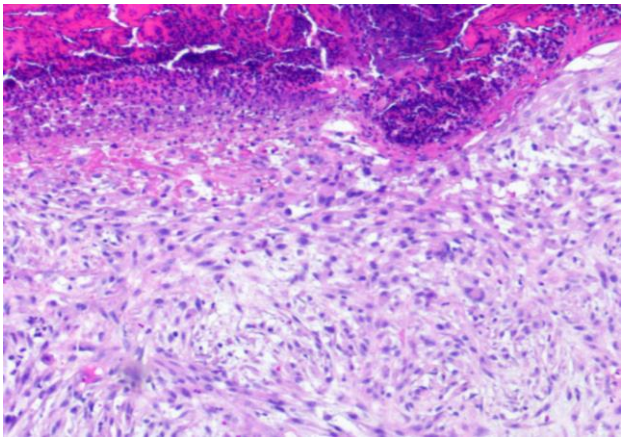
*SCC with clear cell differentiation in ≥25% of cells*
Clear cytoplasm is usually glycogen (PAS+)
No impact on prognosis.



***Spindle cell SCC***

*(aka Sarcomatoid SCC)*
Composed predominantly of spindled tumor cells with partial or complete loss of morphologic squamous differentiation. Closely packed fascicles of pleomorphic spindled cells. Worse prognosis. Virtual slide 2

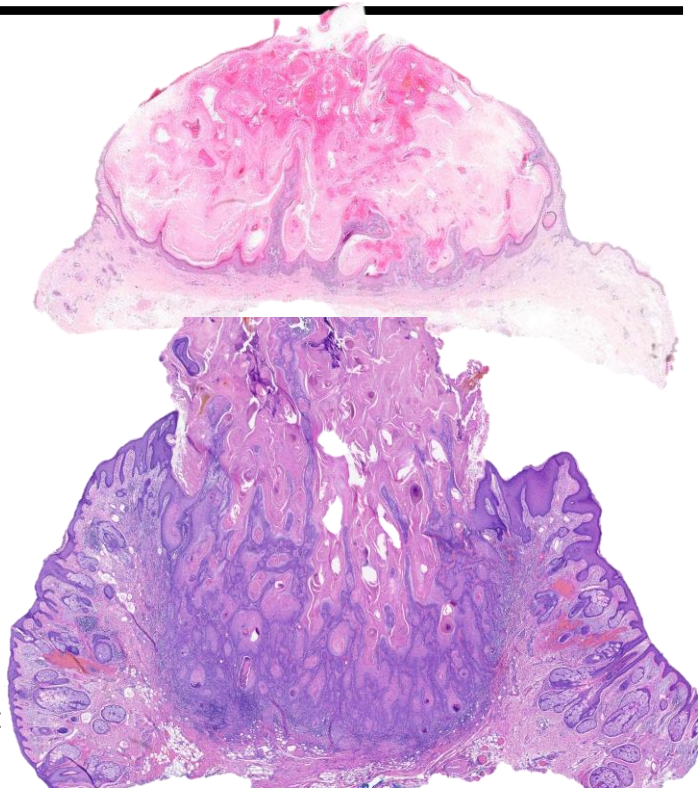
HMWCKs (e.g. CK5/6), p63, and p40 are more sensitive markers for poorly differentiated and spindle cell/Sarcomatoid SCC (AE1/AE3 and EMA can be lost in poorly differentiated and spindle cell tumors)

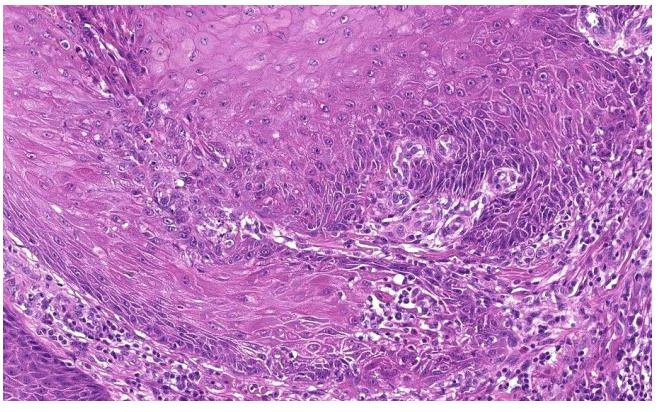


***SCC with Sarcomatoid differentiation***

Recognizable heterologous Sarcomatoid differentiation, usually chondroblastic, osteoblastic, rhabdomyoblastic, or myoid.

# Keratoacanthoma





**Self-limiting squamous tumor** of infundibular-trichilemmal origin characterized by rapid growth (weeks), stabilization, and spontaneous regression (by 1 year). Largely limited to hair-bearing skin (mostly face). Virtual slide 2 3 4

**Distinctive crater-like (cup-like) clinical and histological appearance.**
**Filled with abundant keratin debris**.
Frequent neutrophilic microabscesses.
Brisk lichenoid inflammation.
Often areas of infiltration. Abrupt transition to cells with eosinophilic/glassy cytoplasm.

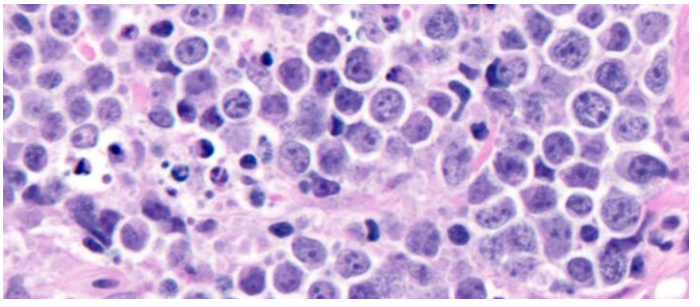
*Not allowed* (suggest SCC): Deep irregular invasion, Pleomorphism beyond peripheral 1-3 layers, high mitoses, acantholysis, follicular mucin, predominant parakeratosis.
Abnormal p53, p16, and Ki67 can help with DDX.
PMID: 37573161



If uncertain SCC vs KA, consider:
*"Squamoproliferative lesion of uncertain malignant potential, keratoacanthoma-type"*

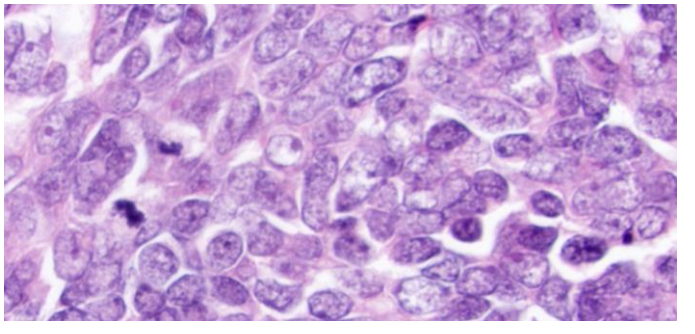
Debate as to biological potential (some consider benign, possibly reactive, while others consider it to be a well-differentiated variant of SCC that can spontaneously regresses)

# Merkel Cell Carcinoma



**Primary cutaneous neuroendocrine carcinoma**.
Fast-growing and aggressive. Virtual slide 2

**Blue cell tumor** in the dermis.
**Neuroendocrine morphology**: Salt and pepper chromatin. Numerous **mitoses** and **apoptosis**.

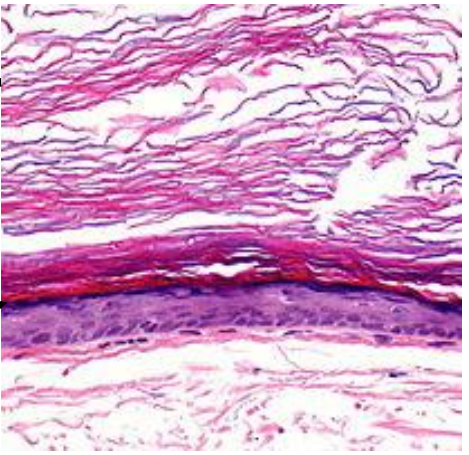


**IHC: Must show NE differentiation**
(Synaptophysin, chromogranin, and/or INSM1) (+)AE1/AE3, **CK20** (perinuclear dot-like); BerEP4, SATB2, Neurofilament; (-) TTF1

Two distinct pathways of carcinogenesis:
Merkel Cell **Polyomavirus-induced** (~80%), which can be identified by IHC, and UV-induced (~10%), which have RB1 and p53 mutations.

# Cysts

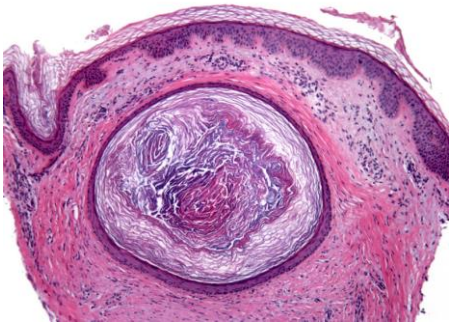
## Epidermal/Epidermoid Inclusion Cyst *"EIC"*



*aka "sebaceous cyst" (a misnomer) and "infundibular cyst"*

**Very common!** Usually young/middle-aged **adults**.
**Most common on face, trunk, neck.**

**Unilocular cyst** lined by **squamous epithelium with granular layer**
Contains laminated (basket weave) **keratin**
May rupture and become inflamed → giant cell reaction
*(sometimes, they can rupture and mostly disappear, with only some residual keratin debris mixed with granulomas as the clue to the Dx!)*

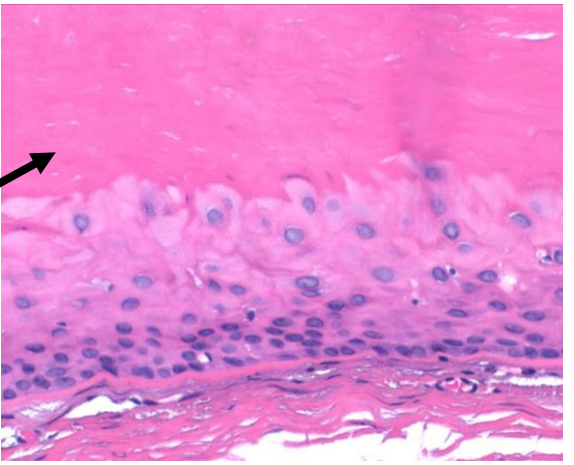


*Acquired* due to trauma ("implantation") or damage to pilosebaceous unit.

Multiple lesions (esp. with pilomatrixoma-like features) can raise suspicion for Gardner syndrome (FAP-related syndrome with germline APC mutations).

Virtual Slide 2 Ruptured

## Pilar (Tricholemmal) Cyst



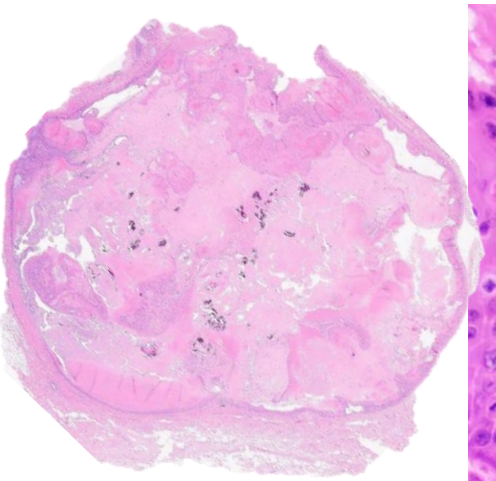
*Aka "ithmus-catagen cyst"*

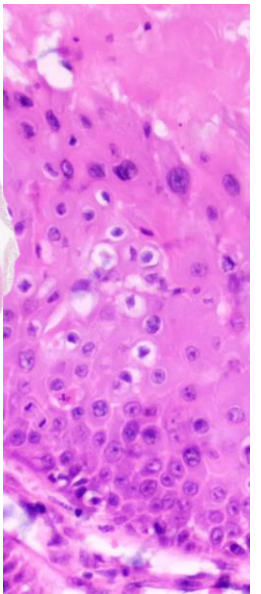
Second most **common** type of cutaneous cyst.
90% on **Scalp**. Usually in **adults**.

Circumscribed simple cyst.
Filled with **dense**, "wet" eosinophilic keratin
Stratified squamous epithelium. Abrupt keratinization.
Granular layer generally **absent**

Virtual slide 2

## Proliferating trichilemmal tumor





Usually benign (but malignant ones exist).
Vast majority on Scalp. Often older women.

Solid-cystic neoplasm with prominent epithelial infoldings into a cystic cavity, composed of irregular aggregates of keratinocytes with trichilemmal keratinization.
Benign = well-circumscribed
Virtual slide 2 3

***Think**: Trichilemmal cyst + papillary infoldings*

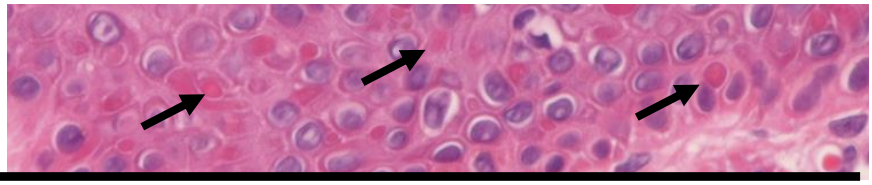
Features of malignancy (can be indistinguishable from SCC): Infiltrative growth beyond cyst, severe nuclear pleomorphism, high mitotic activity.

## HPV-related Epidermal Cyst

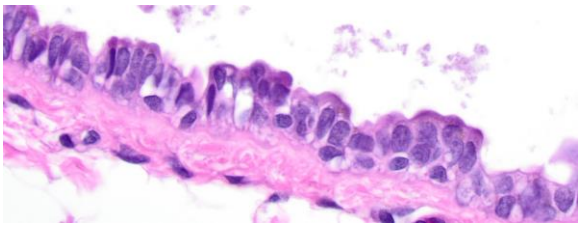
**Rare**. Present in **adulthood**.
Due to **HPV** (types 20, 34, 60, 57)→ Eosinophilic keratohyalin granules (→) and koilocytes.

**Verrucous cysts**
Papillary and acanthotic squamous epithelium. Hypergranulosis. Parakeratosis.
Usual EIC locations (face, neck)

**Epidermoid cyst of the palm and sole**
Mainly in Japanese.

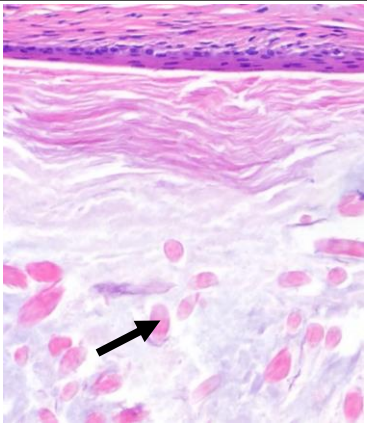


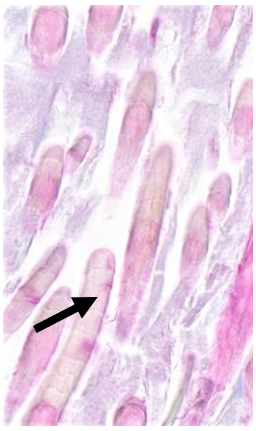
## Median Raphe Cyst



Rare. Midline developmental cyst found at any point from external urethral meatus to anus. Due to defective embryonal closure of median raphe.
Solitary cyst. Most often on ventral glans.
Most often: Pseudostratified columnar epithelium, but can be squamous, mucinous, etc…

## Vellus Hair Cyst





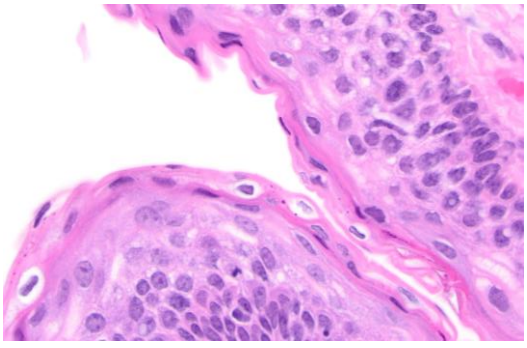
Uncommon. Usually young.
Often multiple on chest.

Similar to epidermoid cysts, but **with multiple intraluminal vellus hairs** (→) (refractile under polarized light).

Stratified squamous epithelium with a granular layer.
Intraluminal keratin and vellus hair shafts.

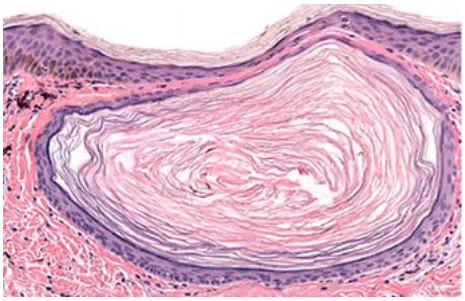
Virtual slide 2

## Cutaneous Keratocyst



Extremely rare cutaneous cysts showing features identical to oral odontogenic keratocysts.
Most cases are associated with Gorlin Syndrome (Nevoid Basal cell carcinoma syndrome).
Bland squamous lined cyst, which typically shows a corrugated eosinophilic lining (cuticle).
*No* follicular or sebaceous differentiation (vs Steatocystoma).

## Milial Cyst



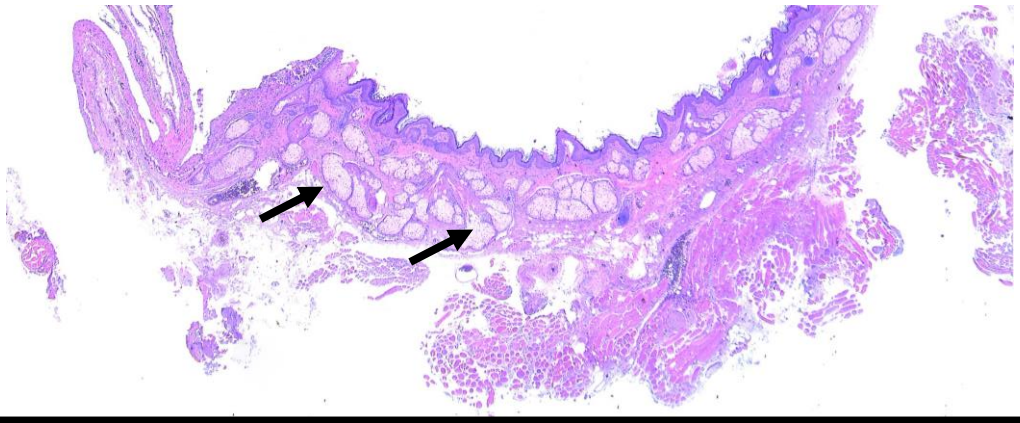
**Very common.** Any age. Small papules.
**Basically, small epidermoid cysts.**

Primary→ spontaneously on the face.
Secondary→ site of trauma
Rarely, can be “eruptive”

## Dermoid Cyst

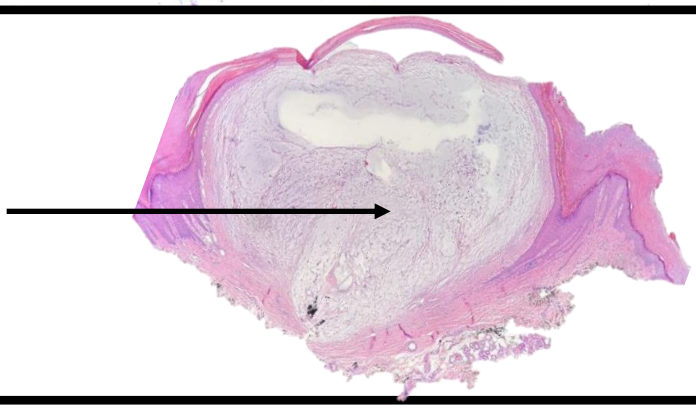
Present at **birth** or infancy. Head or neck, usually around eyes.
Like EIC, but with **hair follicles and sebaceous glands**

Virtual Slide 2



## Digital Mucous (Myxoid) Cyst

Relatively common. Mostly adults.
Unclear etiology.
Usually **dorsum of fingers** or toes.
**Subepidermal cystic space with mucin** and bland stellate fibroblasts. Thinned epidermis.
Mucin stains with colloidal iron and Alcian blue
Virtual slide 2

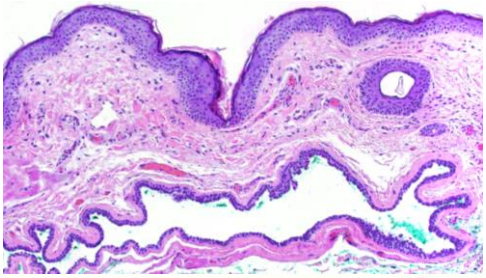


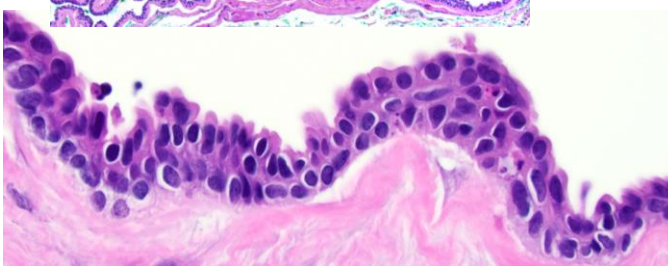
## Hidrocystoma/cystadenoma

Relatively common. Often periorbital.
Spectrum of **benign cystic lesions** of predominantly ductal sweat gland origin, with architecture ranging from **simple cystic, unilocular (hidrocystoma)** to more complex, multilocular (cystadenoma).

**Lined by columnar cells** with or without decapitation secretion. **Surrounded by myoepithelial layer.**

Clinically: solitary, blue-black, small papule.
Most likely reactive from duct obstruction.
Virtual slide 2



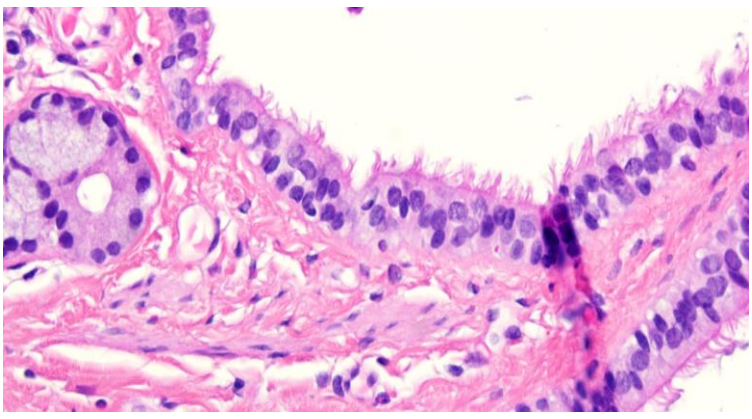


## Bronchogenic Cyst

Lined by **respiratory-type epithelium**

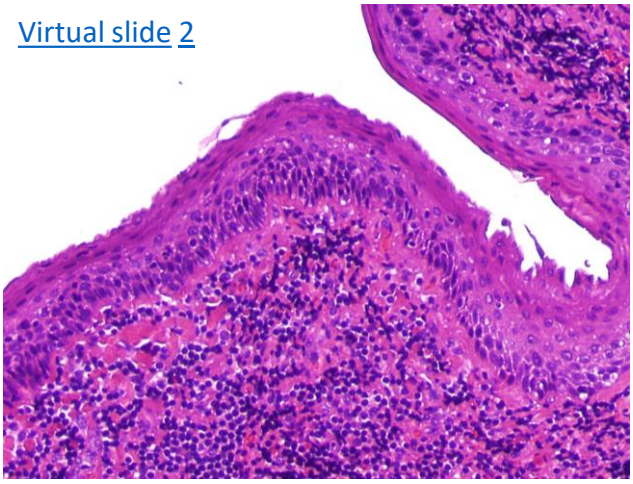
Cyst wall contains **mucoserous glands**, **cartilage**, **smooth muscle**, and scant lymphoid tissue.

**Usually kids. Midline,** near sternum.
May compress nearby structures.
Virtual slide 2



# Branchial Cleft Cyst

Virtual slide 2



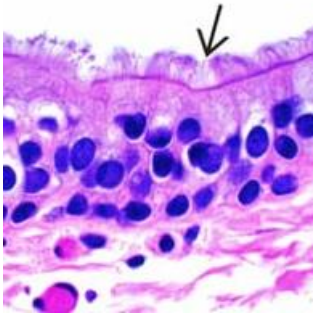
Congenital **malformations of branchial apparatus**.
Can come to attention at any age, but often **young adults**
Found in **lateral** neck. Often near anterior SCM.
Usually non-tender masses (If inflamed→ painful)

Usually lined by **bland squamous epithelium** (rarely glandular lining). The wall often has abundant **lymphoid tissue**, often with germinal centers.

Can also have Branchial Cleft Sinuses and Fistulas.

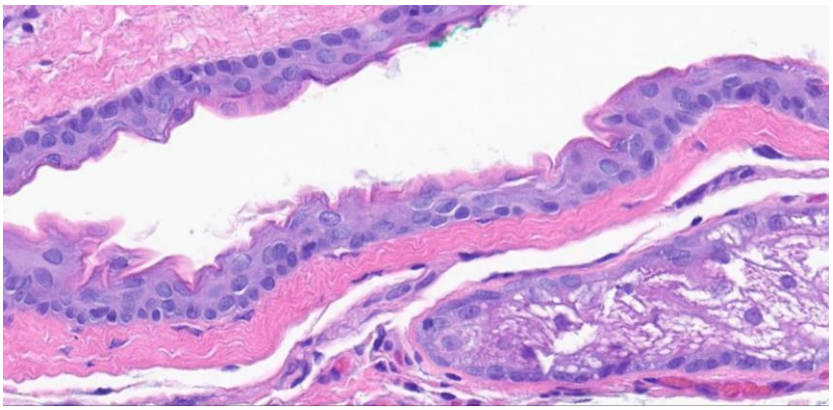
Must exclude SCC metastasis, especially if >50yrs old!

# Cutaneous ciliated cyst



**Very rare**.
Ciliated pseudostratified epithelium.
Usually unilocular.
Likely a combination of Mullerian heterotopia and Eccrine ciliated cysts.
*Must consider/rule out: Bronchogenic, branchial cleft, thyroglossal duct cysts, etc…*

# Steatocystoma



Uncommon. Cyst derived from sebaceous duct that may present as multiple lesions (multiplex, usually adolescents) or a single lesion (simplex, usually adults).

Thin-walled **multiloculated** cyst.
**Undulating eosinophilic cuticle** lining cyst.
**Sebaceous lobules** in cyst wall.
No granular layer. May have vellus hairs.

Virtual slide 2

# Pilonidal Cyst

Relatively common. Often not really cystic.
Inflammatory lesion at the base of the spine or the intergluteal cleft. Often has a sinus tract.

Prominent acute, chronic, and granulomatous inflammation.
Granulation tissue.
Squamous epithelium with reactive changes.
**Free hair shafts** are often seen coursing through the inflammatory focus (→)

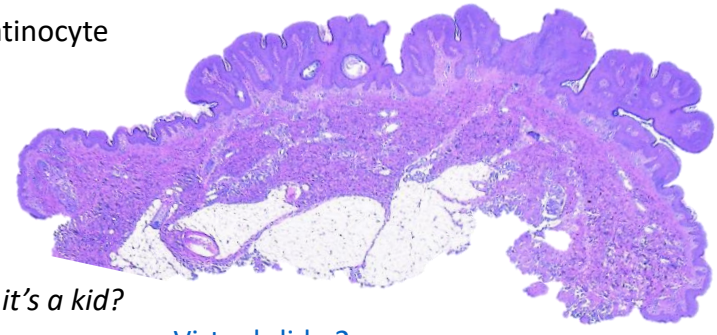
On a spectrum with Hidradenitis suppurativa and severe nodulocystic acne→ all part of "Follicular occlusion tetrad"

Virtual slide

# Miscellaneous

## Epidermal Nevus

Developmental malformation of epidermis with keratinocyte hyperplasia.
Usually present at **birth**, but can develop.
Neck, trunk or extremities.
Many different patterns!
Common: **broad papillomatosis and acanthosis**.



*Something that looks like a Seborrheic keratosis, but it's a kid?*
Think Epidermal nevus!

Virtual slide 2

## Clavus (Corn)/Callus

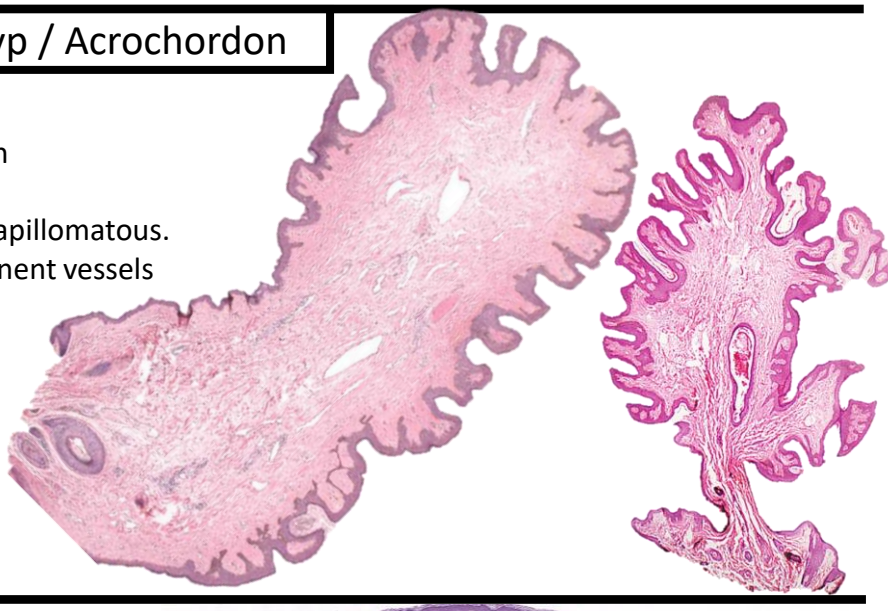
*Both* caused by localized downward and lateral forces.
**Callus**: Less well-demarcated. Useful/protective.
Markedly dense stratum corneum with mild acanthosis and increased collagenization of the superficial dermis
**Corn (Clavus):** Well-demarcated. Pathological and painful.
Very dense collagen plug surrounded by same epidermal changes.


## Skin Tags / Fibroepithelial Polyp / Acrochordon

Very **common**. **Often pedunculated.**
Common sites: eyelids, neck, axilla, groin

Epidermis may be hyperplastic and/or papillomatous.
**Fibrous stroma**, often loose, with prominent vessels
Usually *no* adnexal structures.

Virtual slide 2

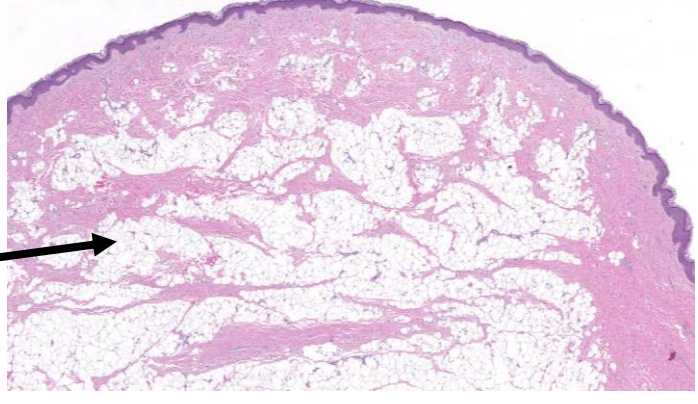


## Nevus lipomatosus

*aka penduculated lipofibroma*
Connective tissue hamartoma.
Often on posterior buttock or thigh.
Papule, plaque, or nodule

**Mature adipose tissue in reticular dermis.**
Absence of adnexal structures.

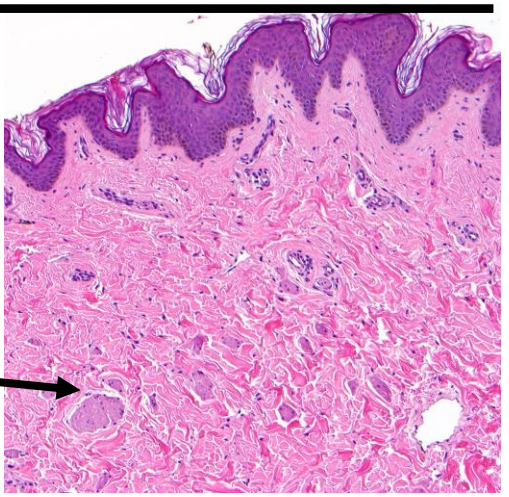
Virtual slide 2

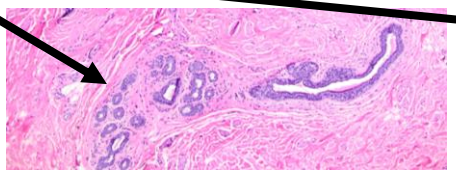


## Accessory (Supernumerary) Nipple

**Extramammary breast tissue**.
May arise **anywhere on "Milk line"** (axilla→ inguinal area)

Epidermal papillomatosis and acanthosis.
Basal layer hyperpigmentation.
Increased dermal pilosebaceous nodules
**Dermal smooth muscle bundles.**
**± underlying breast tissue.**





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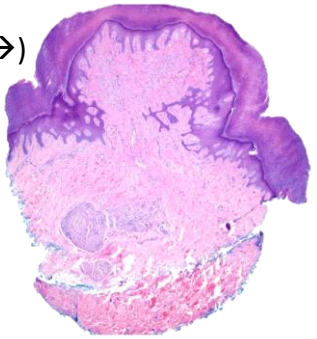
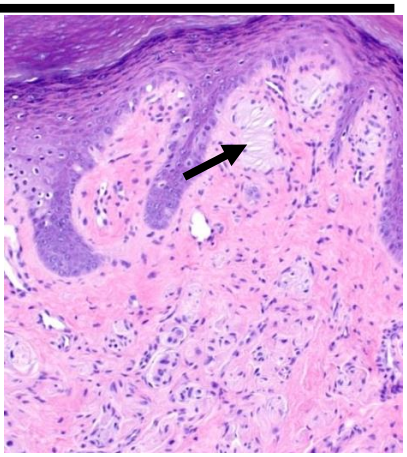
## Supernumerary digit (Rudimentary polydactyly)

**On radial side of fifth digit.**
**Haphazard nerves** with displaced Meissner bodies (→)



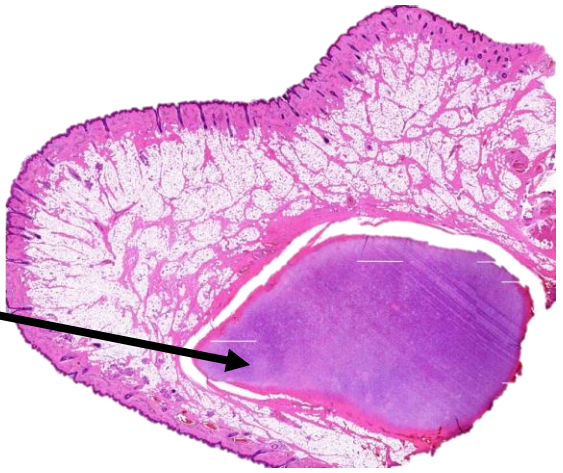


Virtual slide 2

## Accessory Tragus

Usually presents as **neonate or kid**.
Usually anterior to tragus in **preauricular skin**.
(Can be anywhere in migration of 1st branchial arch: angle of mouth→ ear)

**Cartilage** usually present and a distinguishing clue.
Also often has vellus hairs, fibrous tissue, adipose tissue



Virtual slide 2

## Cutaneous Metastases

**Most common: Melanoma** (it's epidermotropic and specifically gravitates to the skin. Look for an epidermal component to suggest a primary lesion, but history is really the key as even mets can secondarily involve the epidermis!)

Next most common offender: **Breast**.
Sometimes: Lung, colon

**Usually requires History and/or IHC!**

Metastatic prostate cancer to the skin (rare)