



American University of Beirut
Faculty of Medicine
& Medical Center



Sebaceous Tumors

May2017

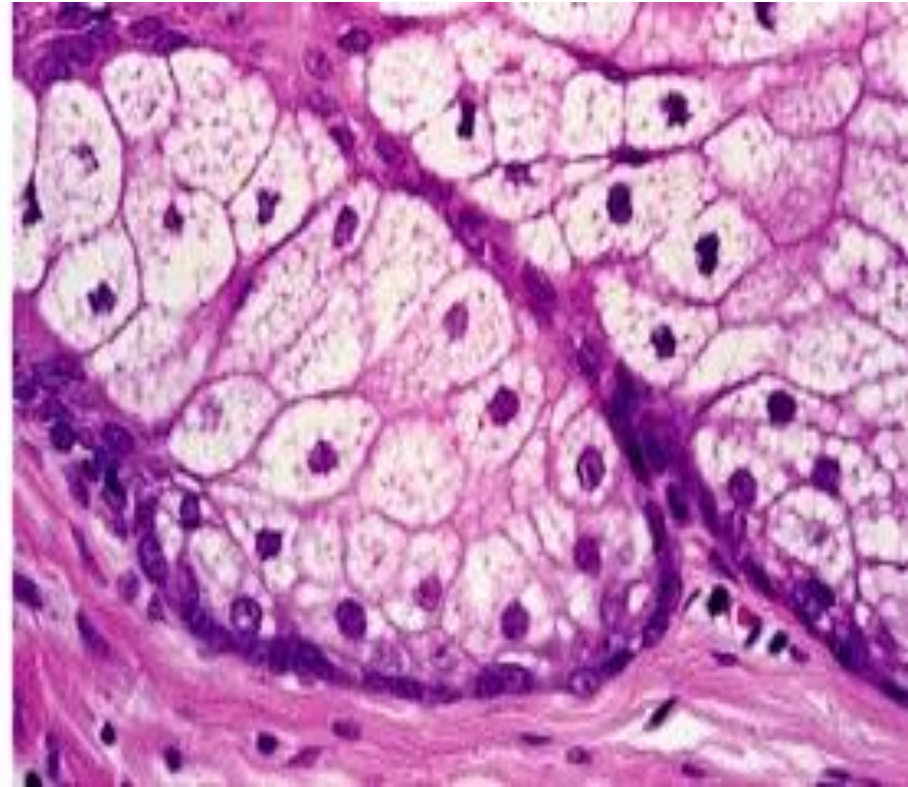
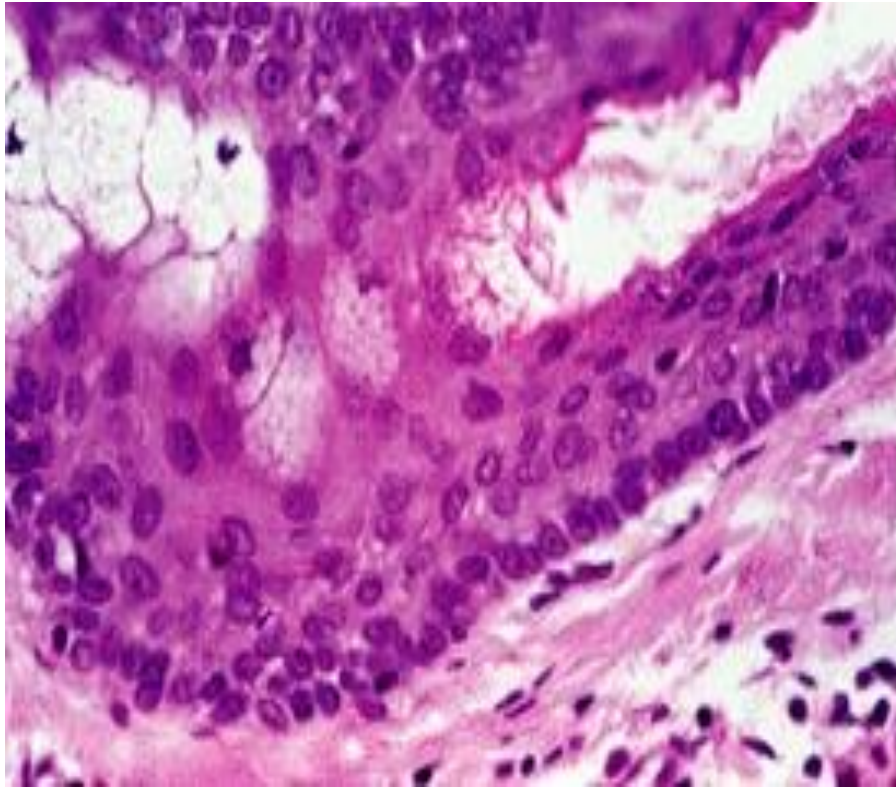
Ossama Abbas, MD
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Department of Dermatology
American University of Beirut Medical Center

Outline

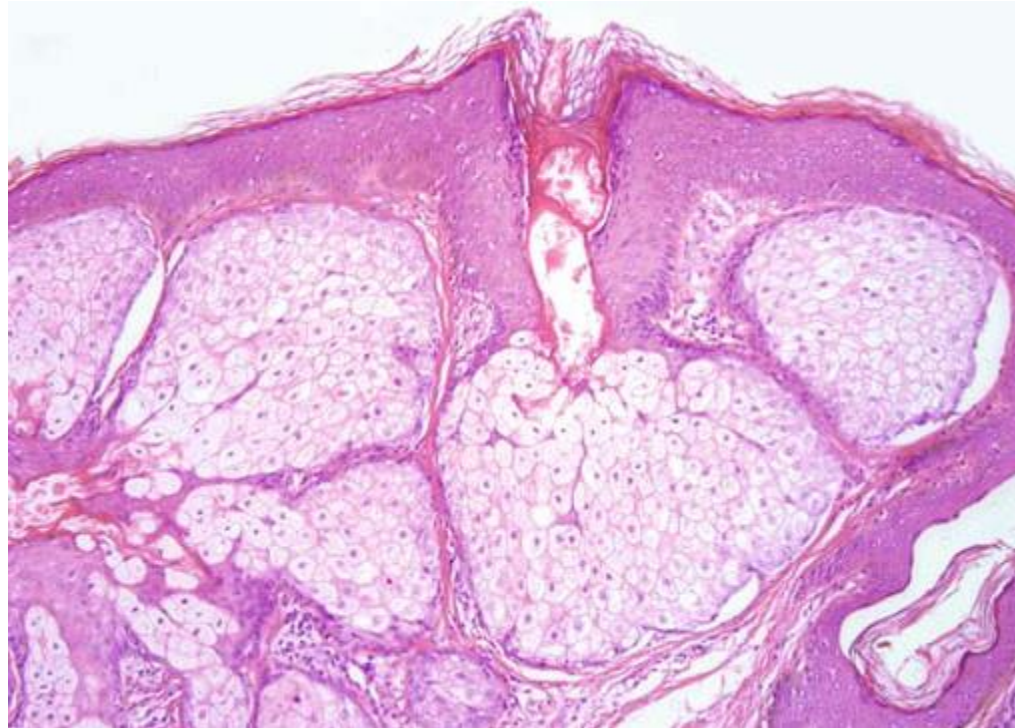
- Normal sebaceous glands
- Sebaceous hyperplasia
- Sebaceous adenoma
- Sebaceous epithelioma
- Sebaceous carcinoma
- Muir-Torre Syndrome
- Other sebaceous tumors

Sebaceous Glands

- Many on face (especially nose)
- None on palms and soles
- Ectopic glands on mucous membranes are called Fordyce spots
- Meibomian glands on eyelids and Montgomery tubercles on areolae are sebaceous glands
- Large at birth, smaller pre pubertal, then enlarge again during puberty (under hormonal control)



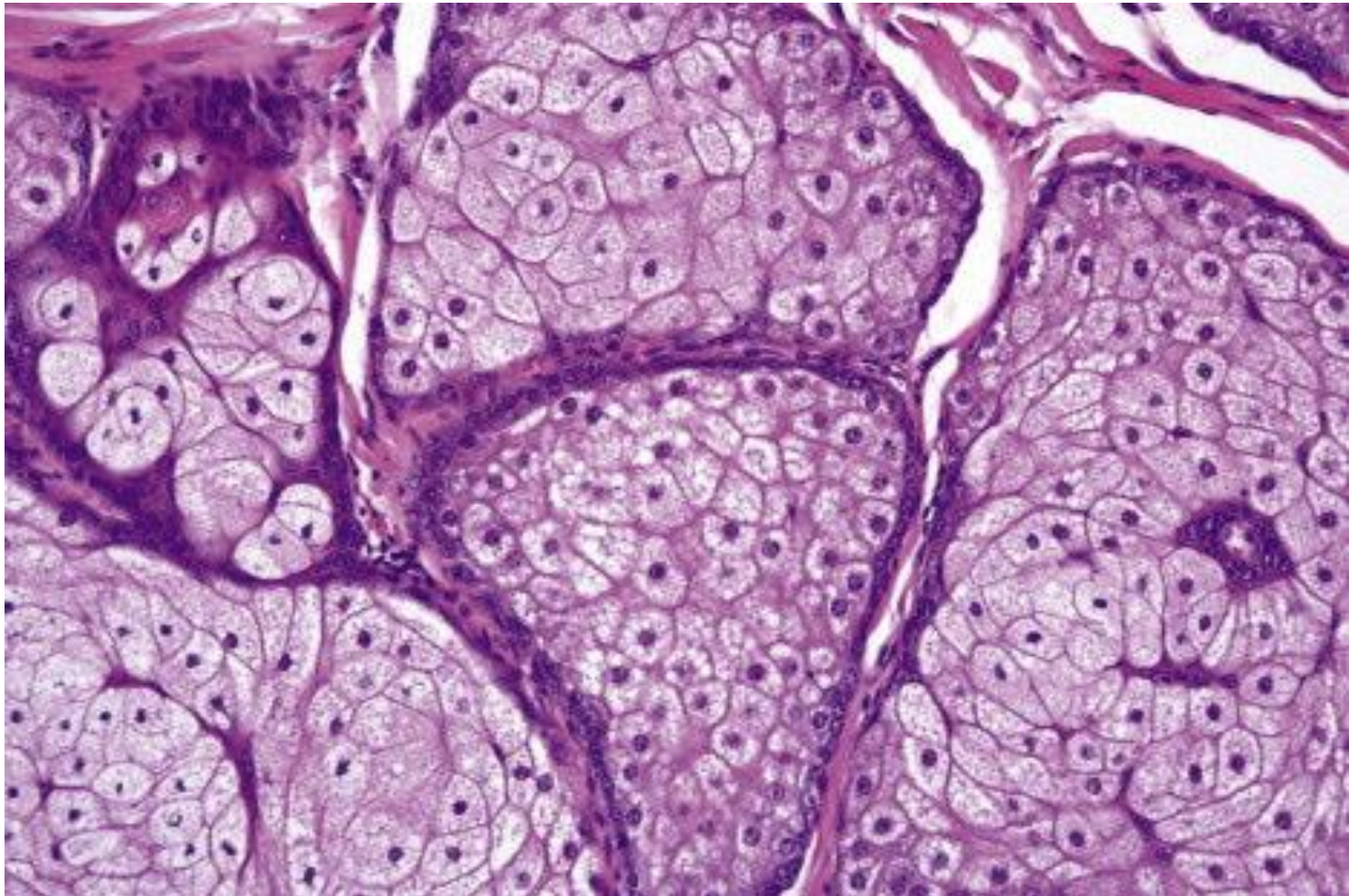
- A sebaceous gland may consist of only 1 lobule, but often has several lobules leading into a common excretory duct composed of stratified squamous epithelium



Embryology

- Sebaceous glands usually develop as lateral protrusions from the outer root sheath of hair follicles
 - But at certain sites (eyelids, lips, areolae, nipples, labia minora), they appear to arise independently and drain directly onto skin's surface

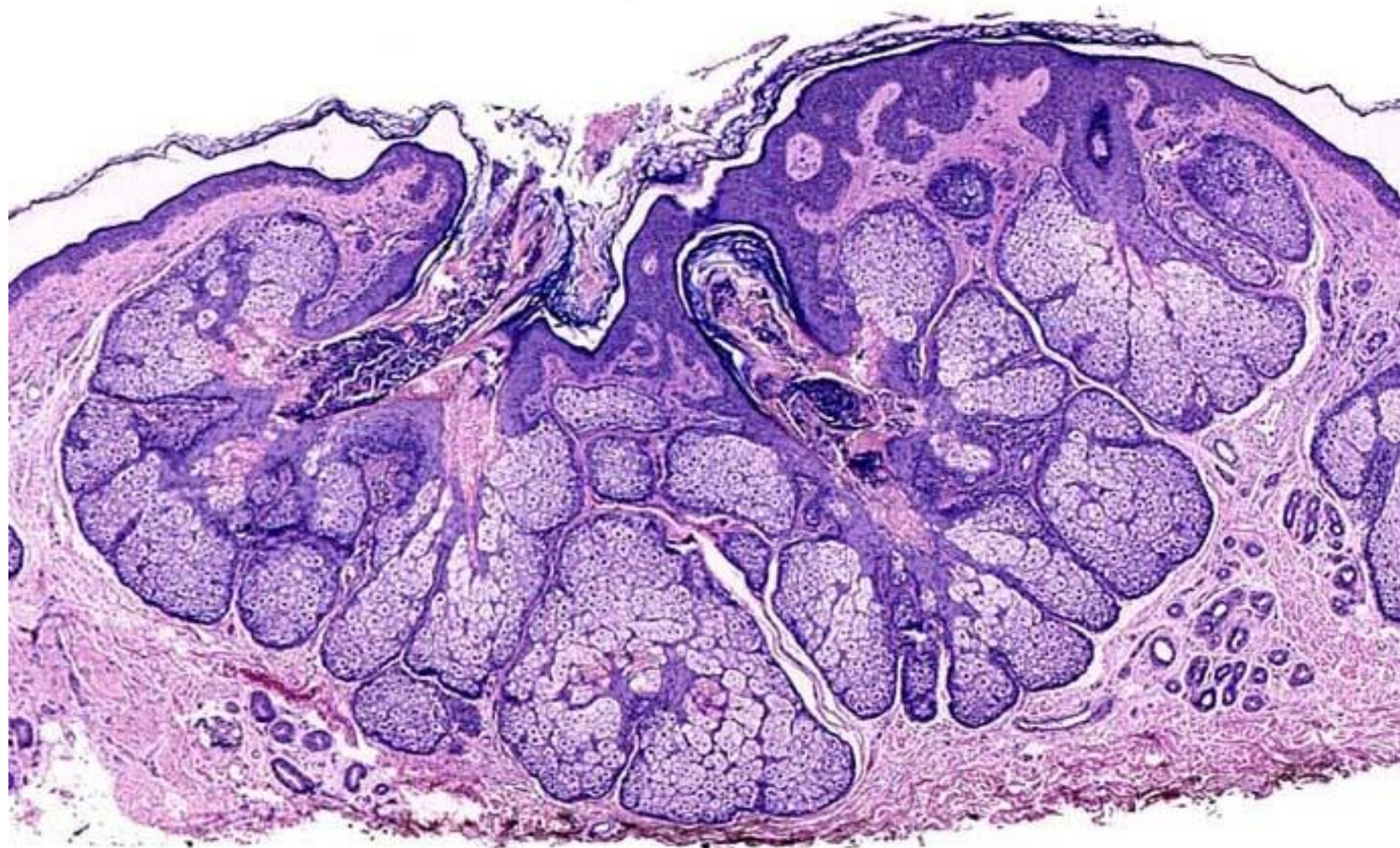
Sebaceous glands consist of several lipid-containing lobules
Each lobule is composed of an outer layer of small cuboidal
or flattened basophilic germinative cells, from which arises
the inner zone of lipid-laden vacuolated cells

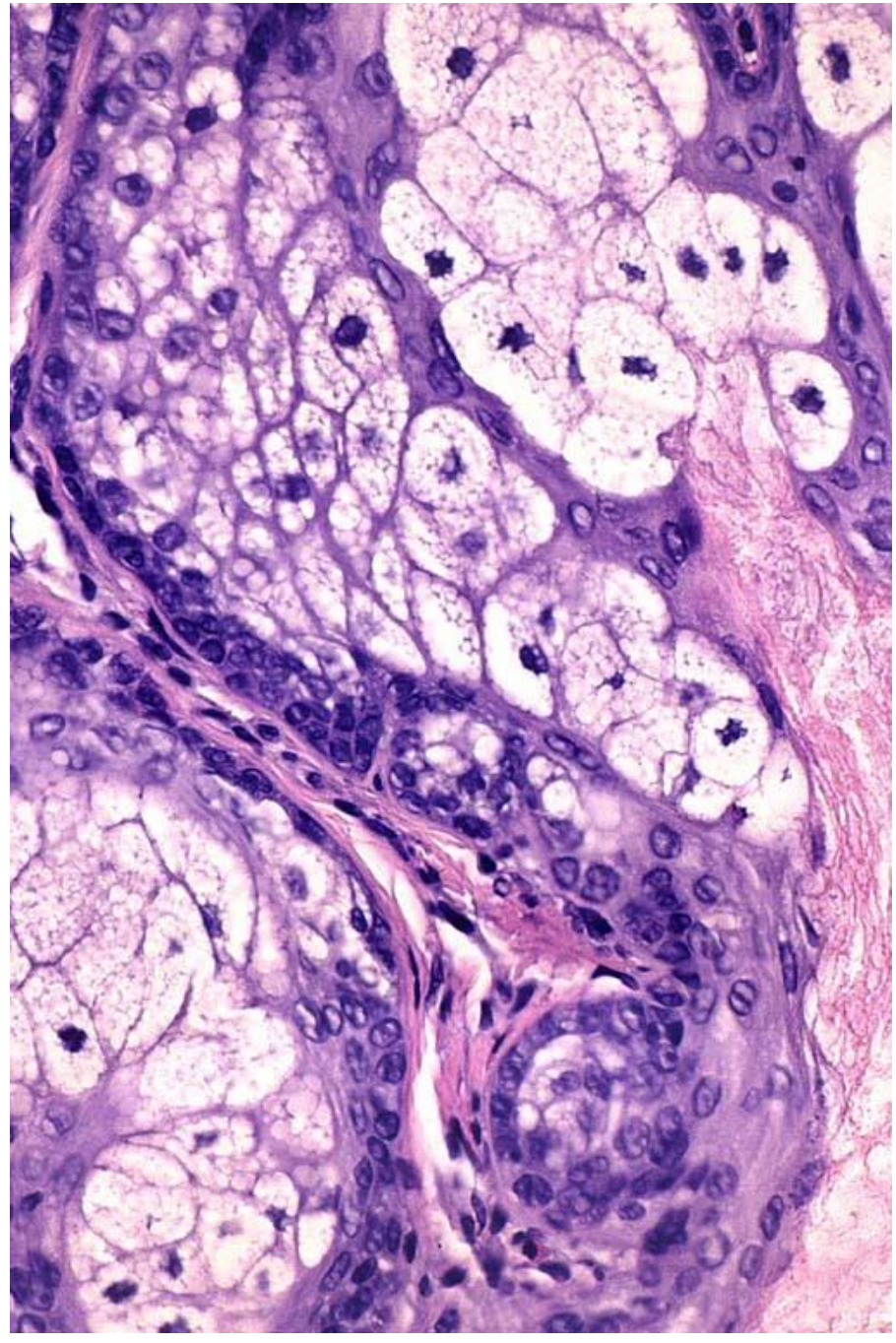
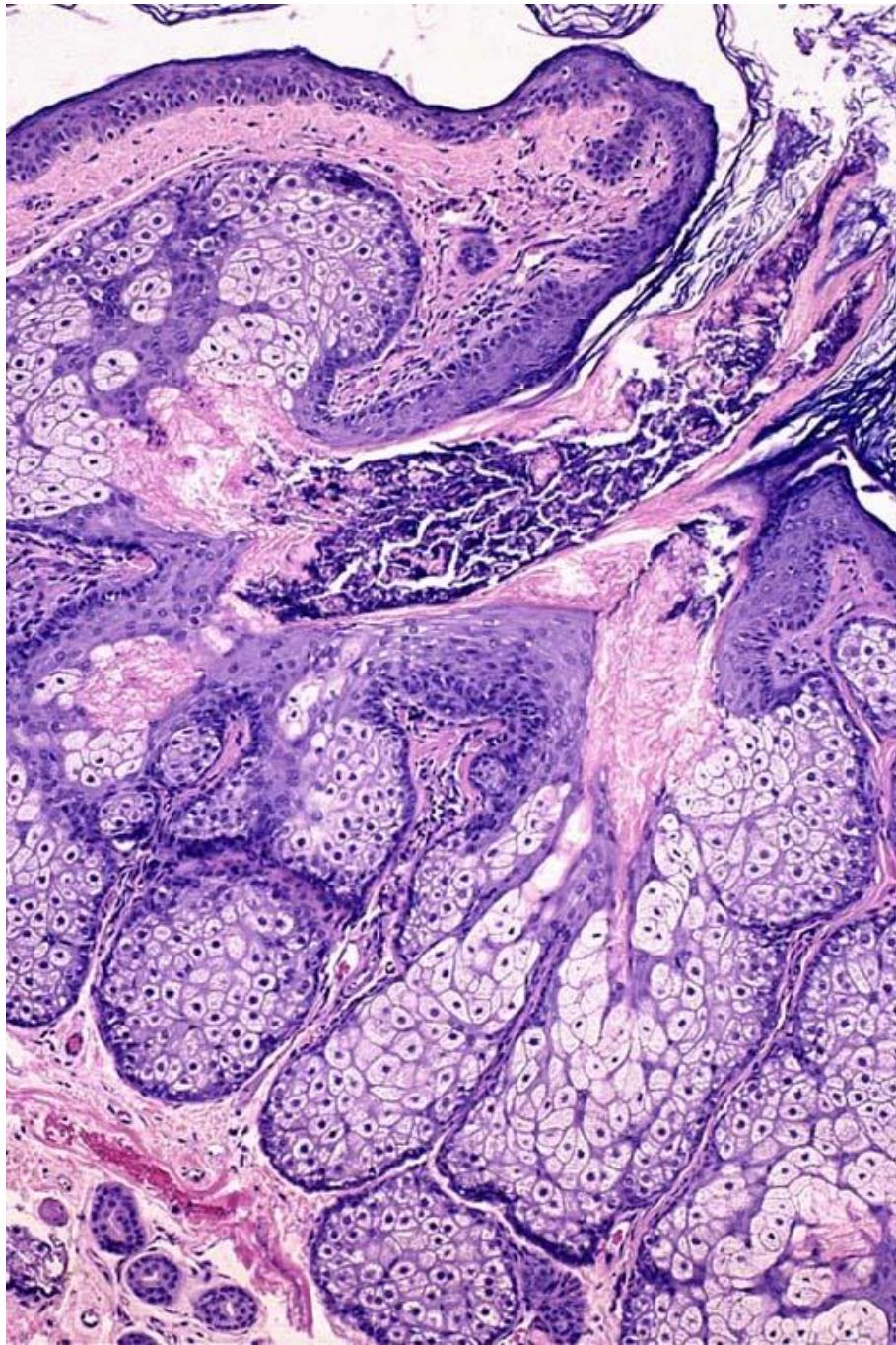


Sebum

- Sebum, lipid mixture that includes
 - Triglycerides (57%)
 - Wax esters (26%)
 - Squalene (12%).
- Function includes
 - Waterproofing
 - Control of epidermal water loss
 - Protective function, inhibiting the growth of fungi and bacteria
- Secreted sebum undergoes significant changes due to presence
 - *Propionibacterium acnes* (triglyceride hydrolysis) within the pilosebaceous canal
 - *Staph. epidermidis* (cholesterol ester formation) on the perifollicular skin

Case





Diagnosis

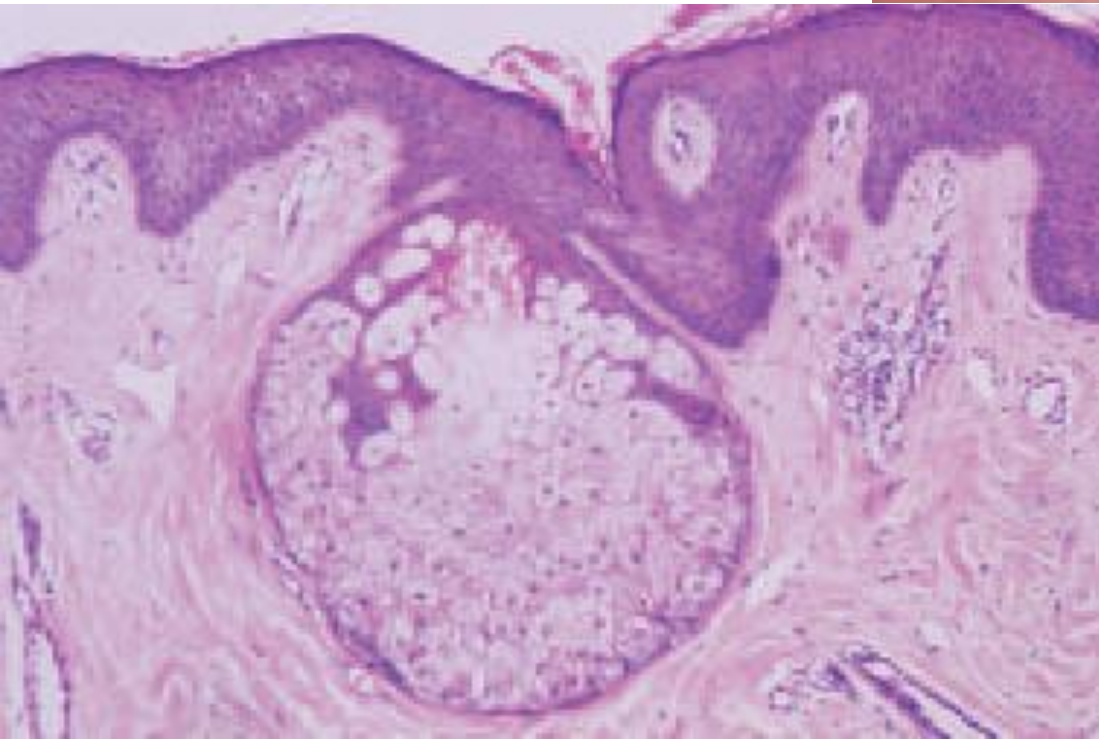
Sebaceous hyperplasia

Sebaceous hyperplasia

- Benign proliferation of enlarged sebaceous glands
- Clinical:
 - Small yellow papule with central dell or pore, usually on face.
 - Predisposing factors: genetic predisposition, seborrhea, immunosuppression
 - Usually biopsied to exclude BCC



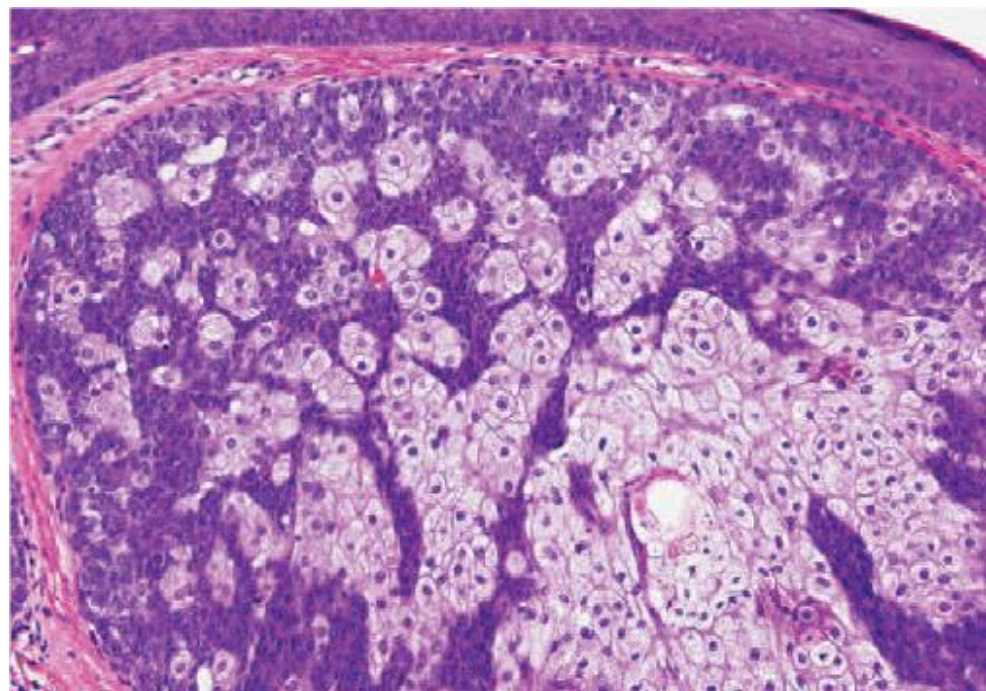
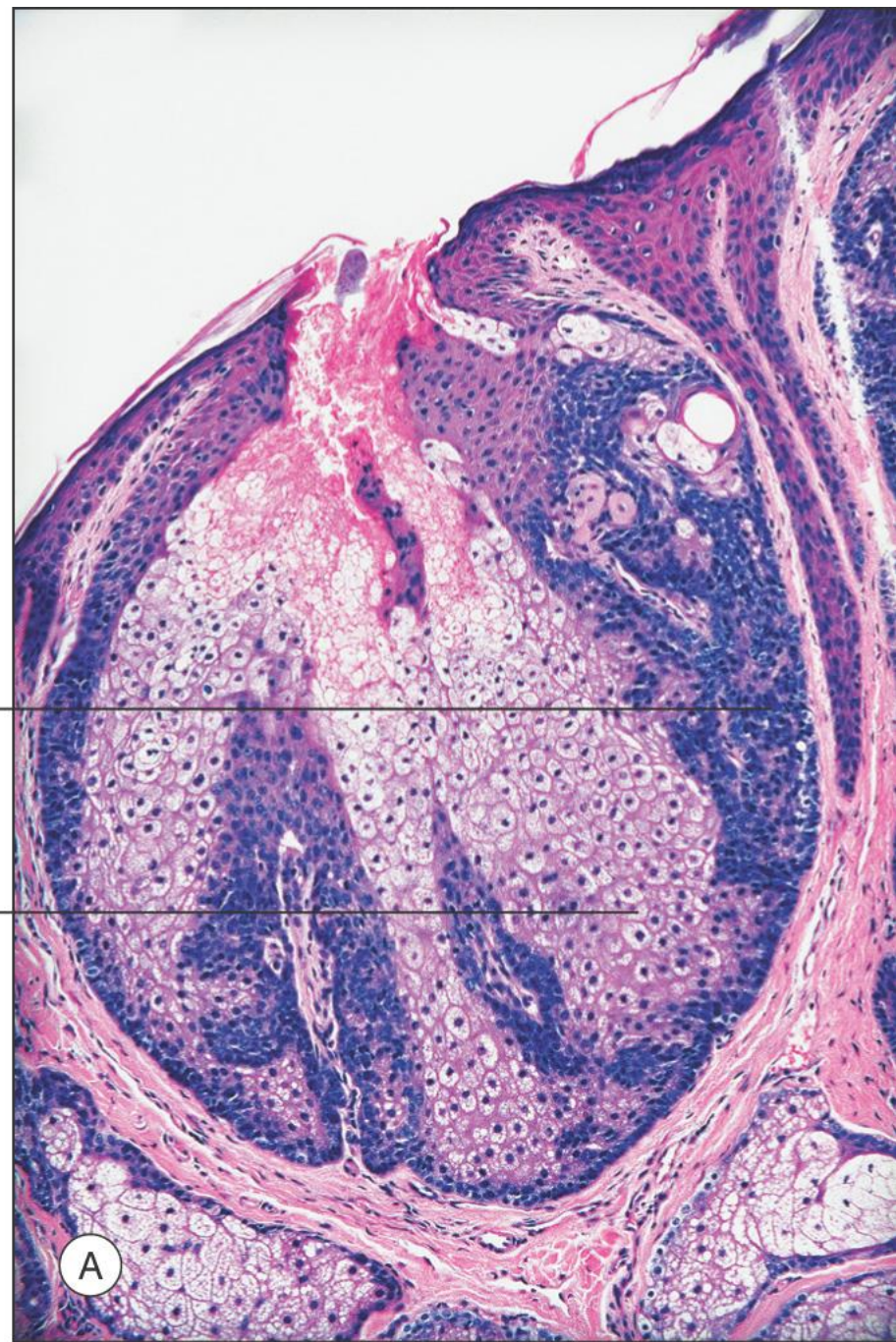
Case



Diagnosis

Ectopic Sebaceous glands

Case



Diagnosis

Sebaceous adenoma

Sebaceous adenoma

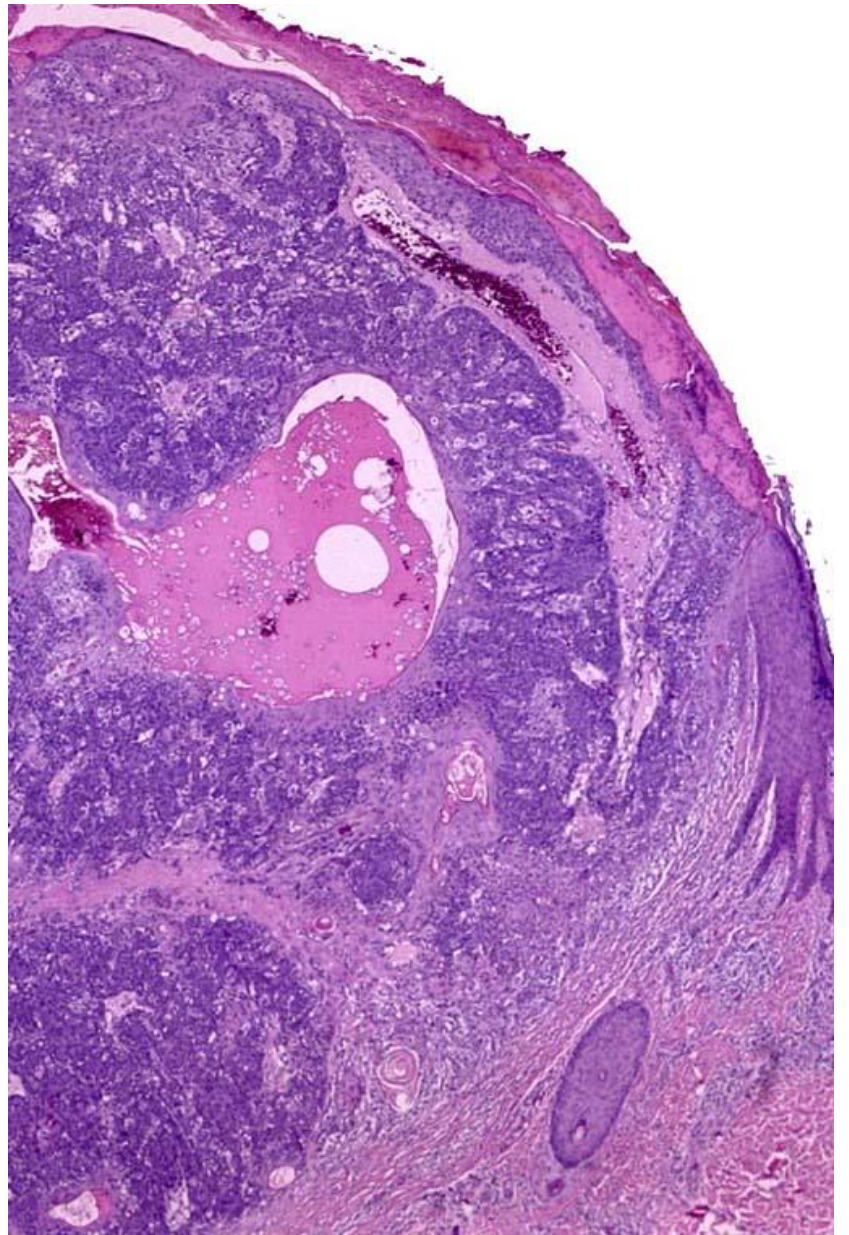
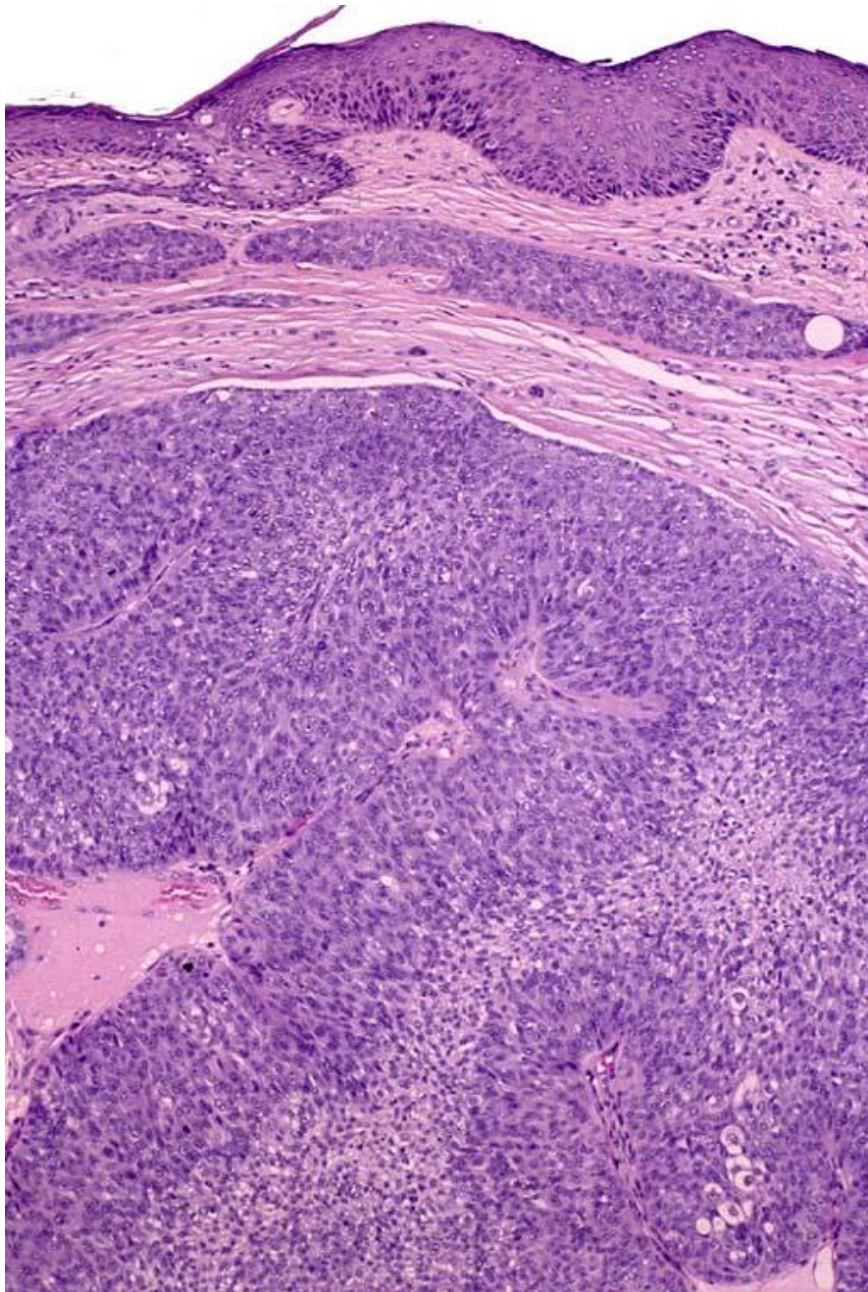
- Benign neoplasm of sebaceous origin
- Germinative cells are present beyond the normal one to two layers seen in sebaceous hyperplasia, but still make up proportionally less of the lesion than mature sebocytes
- Associated with MuireTorre syndrome

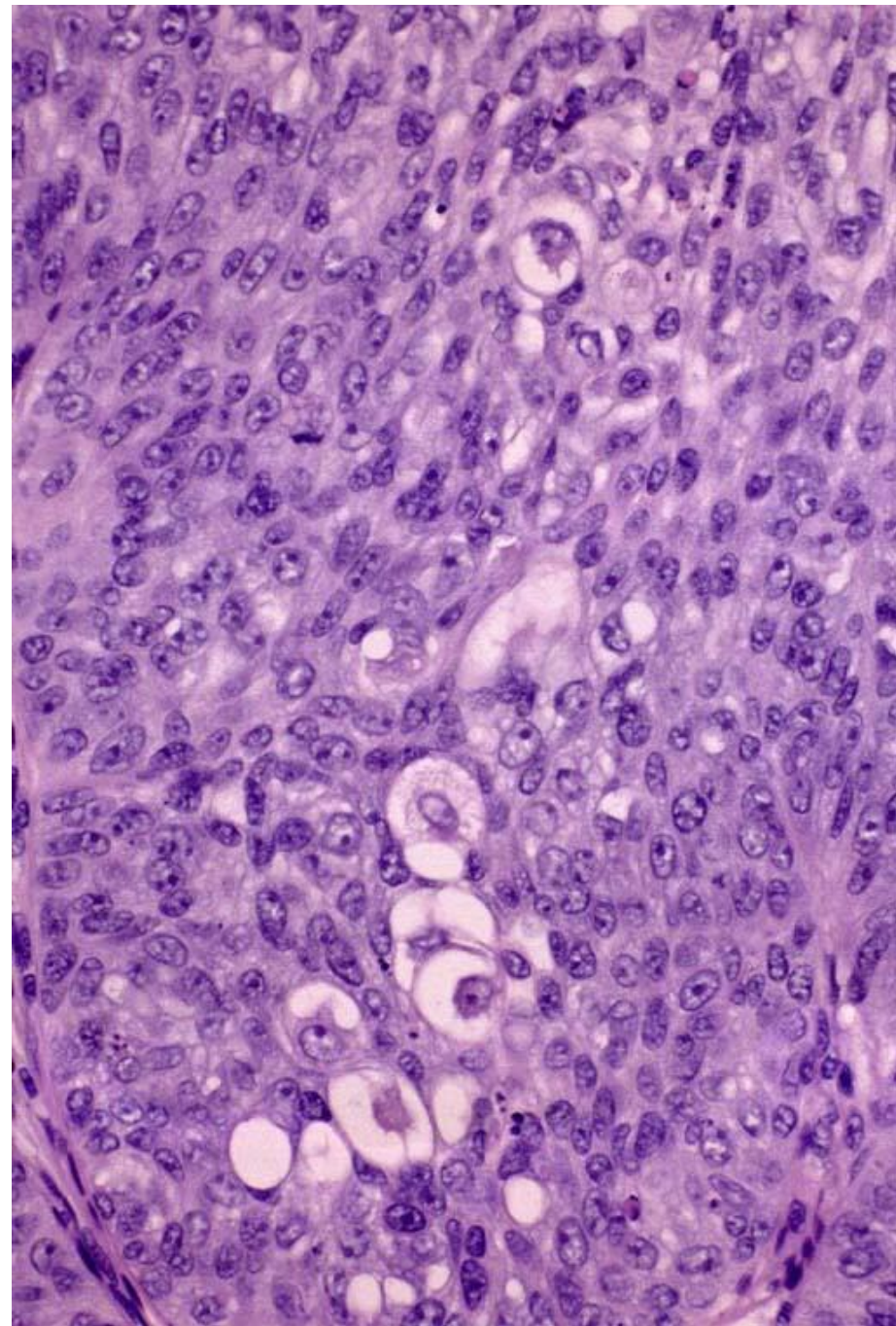
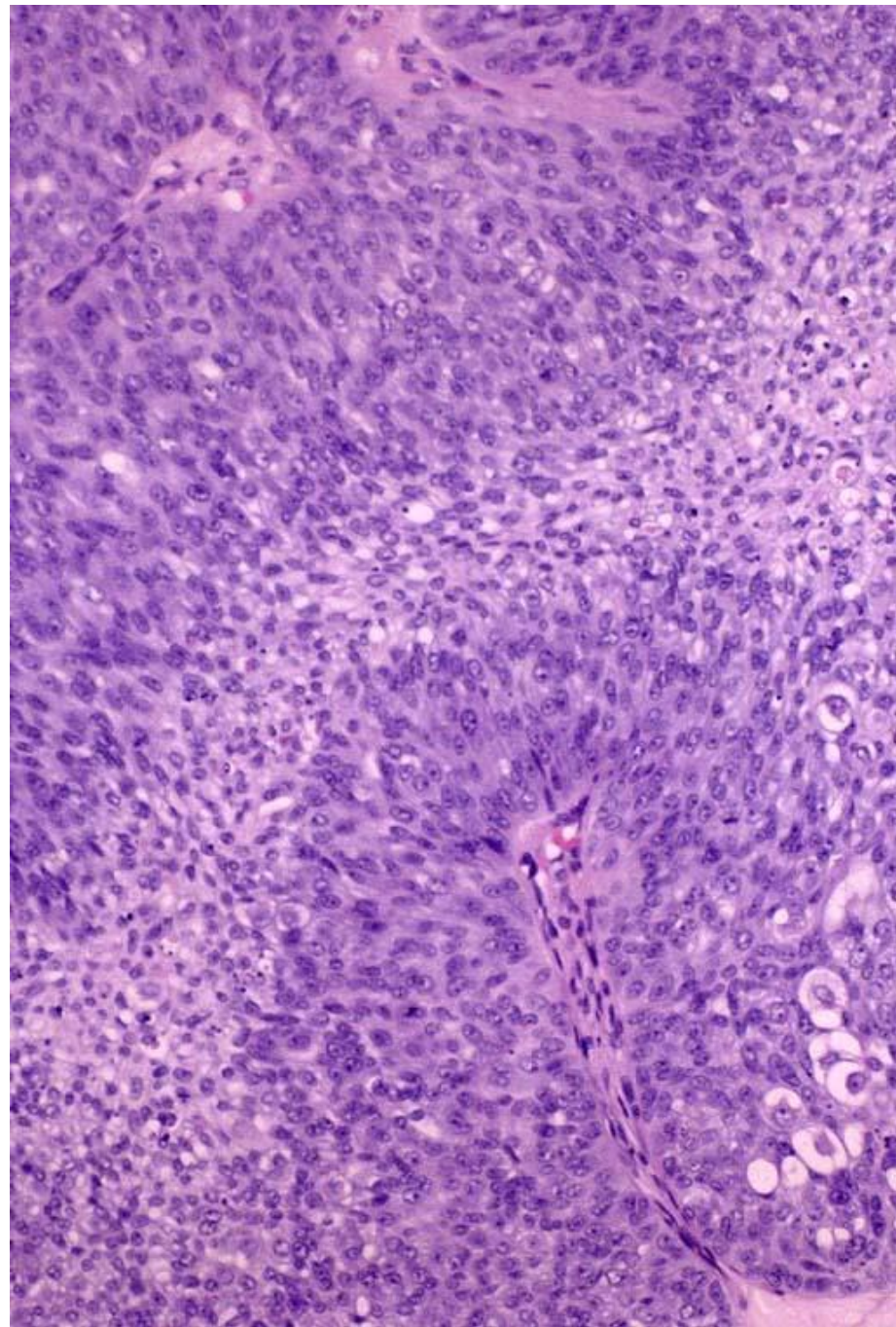


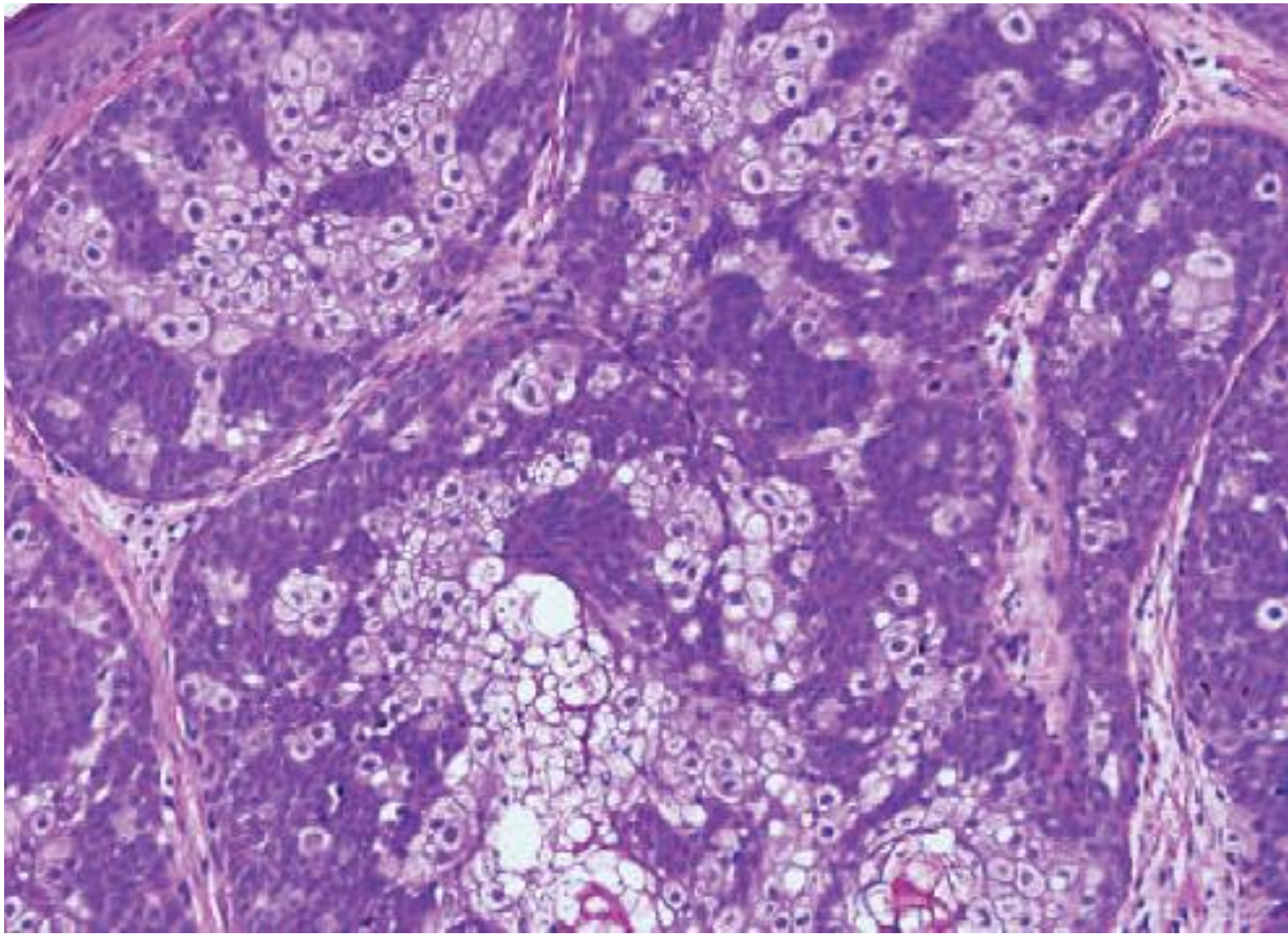
Histopathology

- Multilobular tumor with sebaceous differentiation.
- Cells mature from small germinative peripheral cells at the margin of the tumor to mature sebocytes with increasing amounts of lipid in their cytoplasm
- Mature sebocytes outnumber small germinative cells

Case







Diagnosis

Sebaceous epithelioma

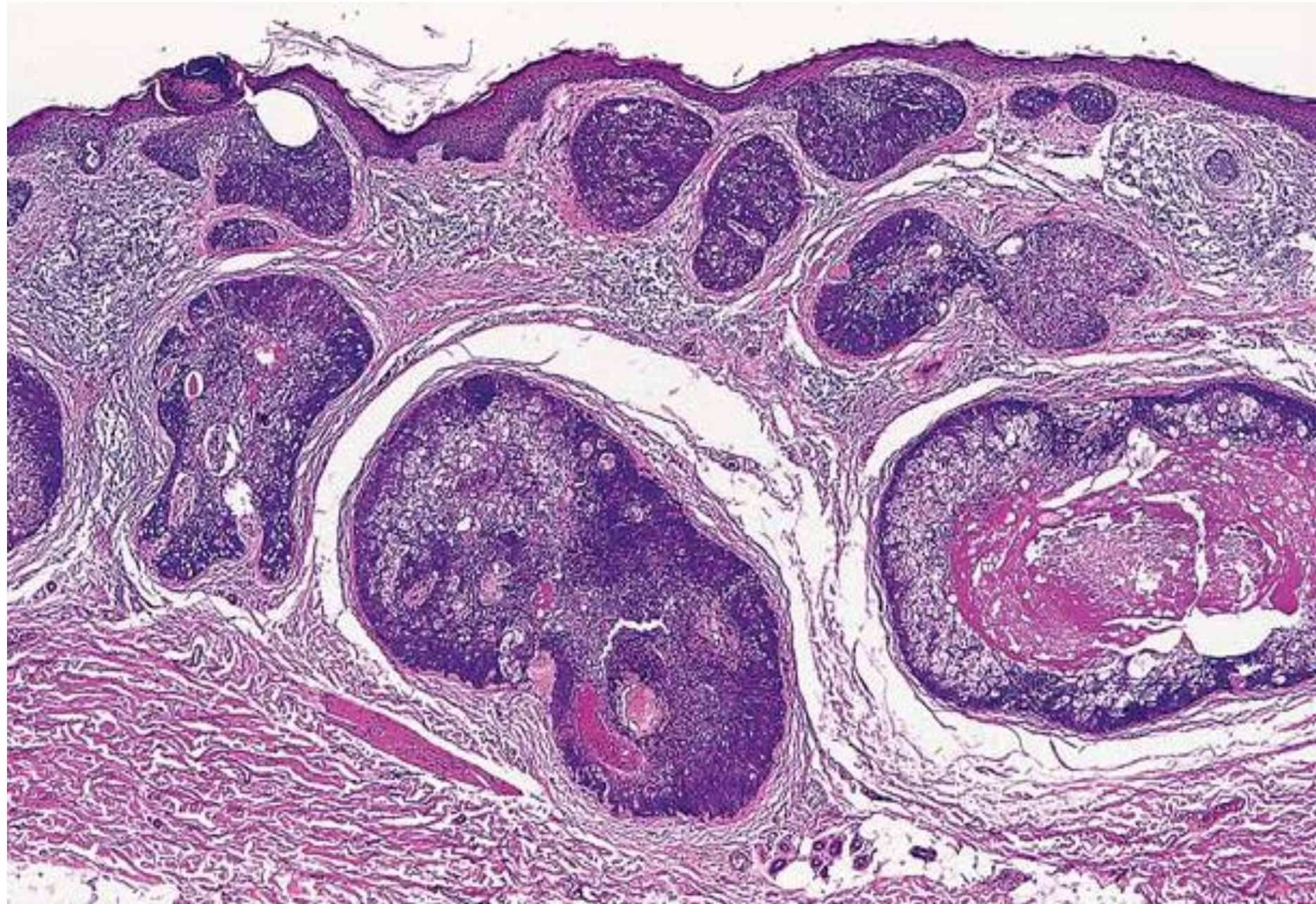
Sebaceous epithelioma

- Controversy exists regarding the nomenclature of this benign tumor
- Associated with MTS

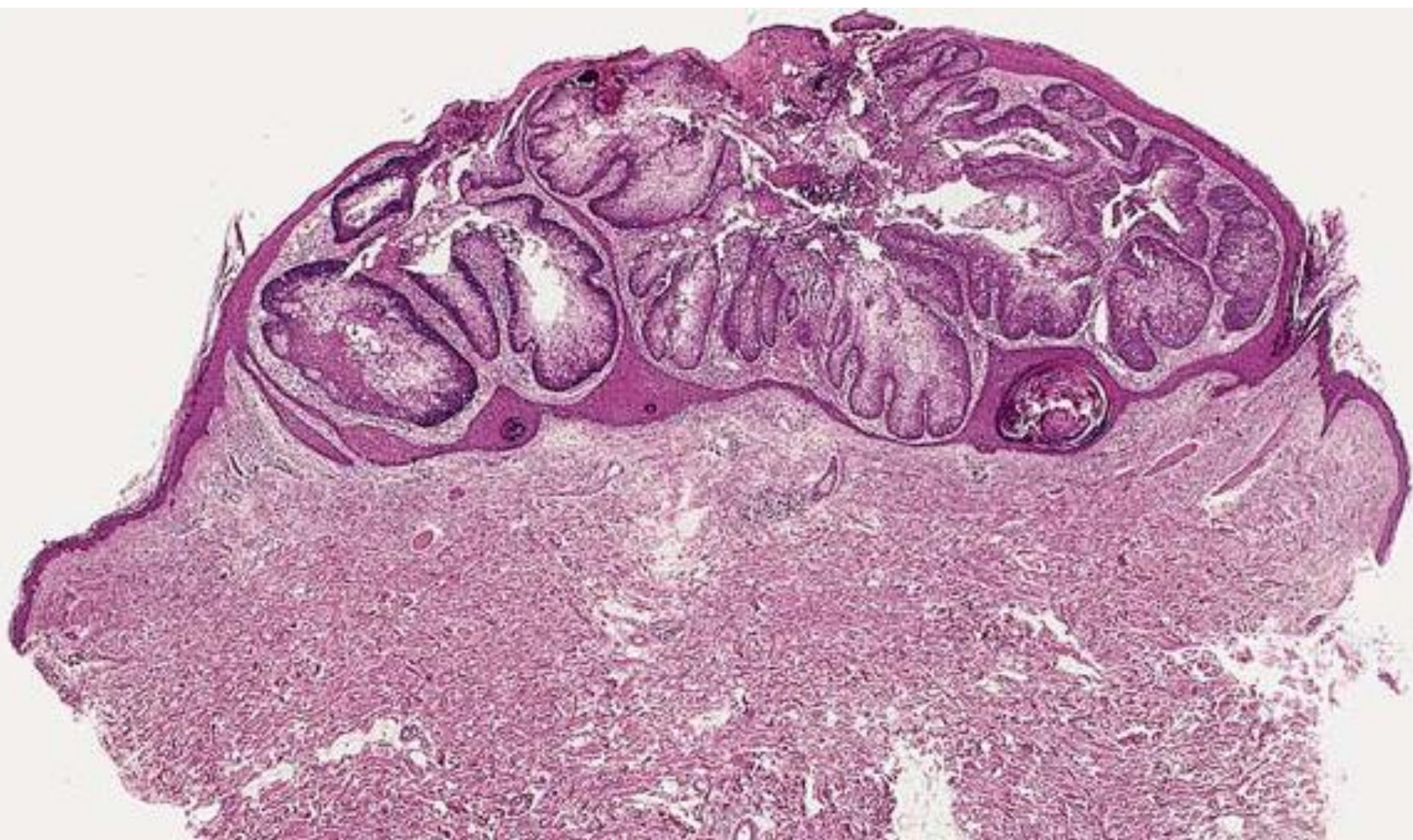


Histopathology

- Basaloid cells with sebaceous differentiation.
- Germinative cells outnumber sebocytes, a feature differentiating this tumor from sebaceous adenoma
- Neoplasm is surrounded by a sclerotic stroma



Case

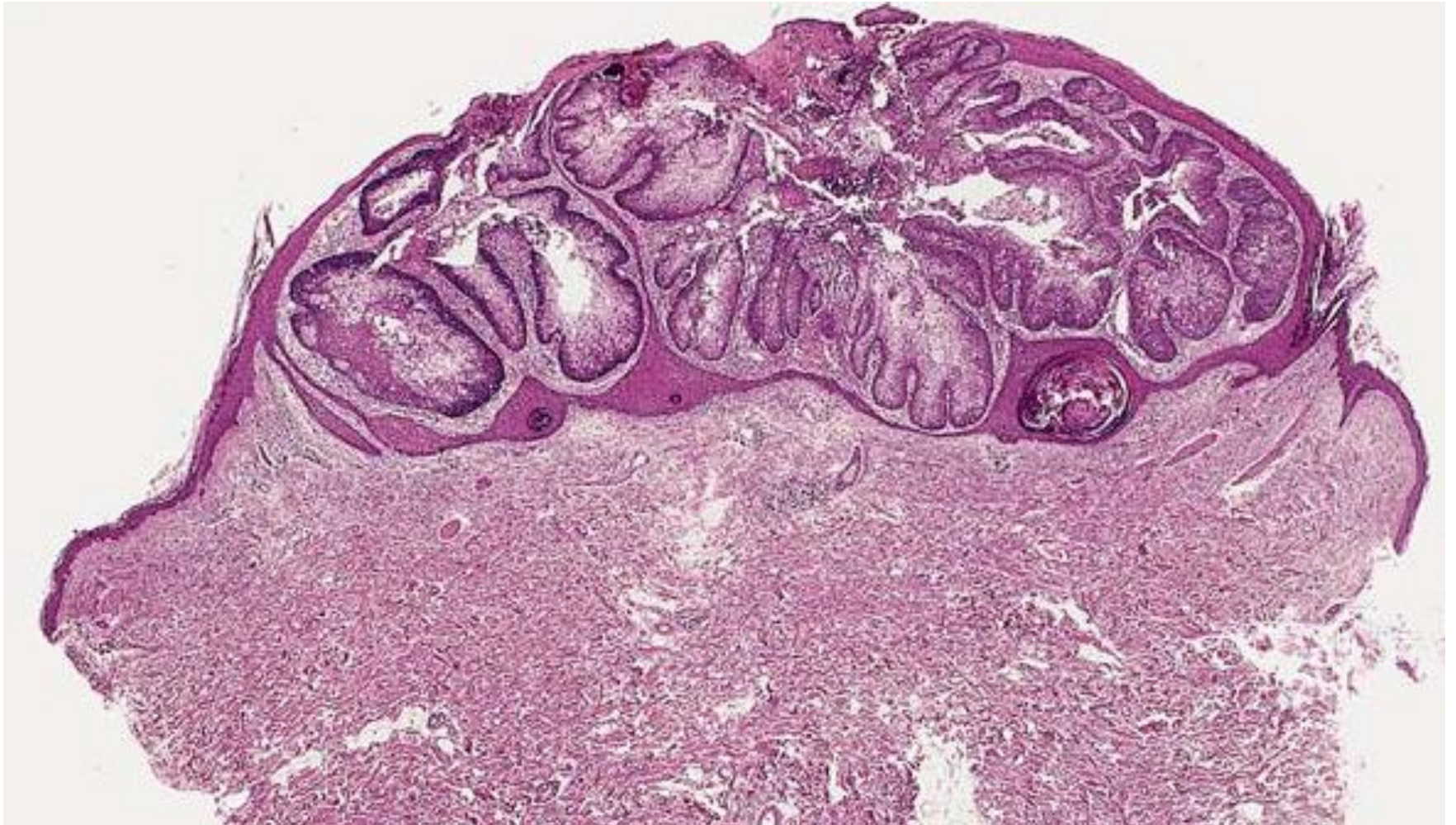


Diagnosis

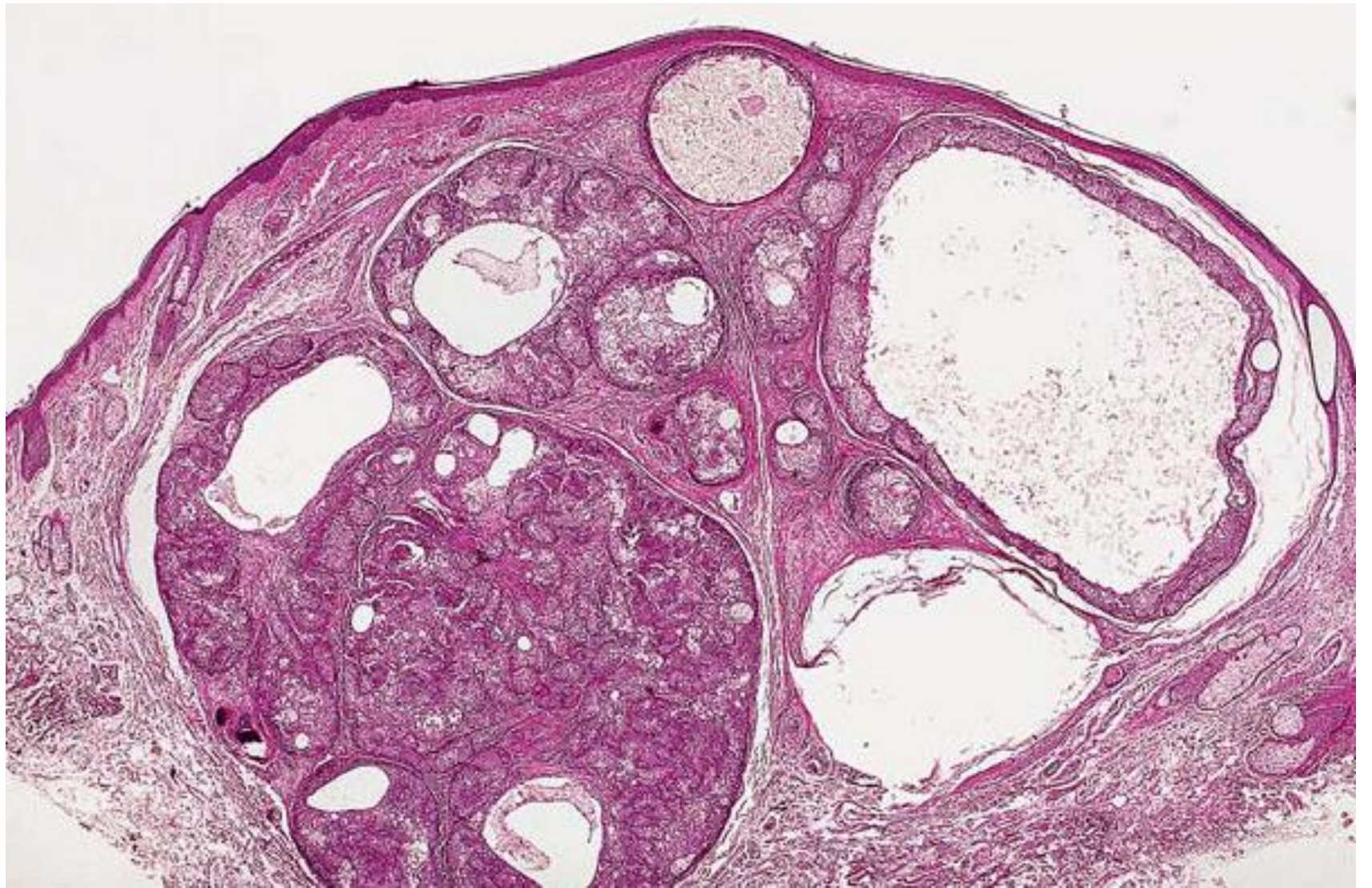
- Additional work-up ????

Sebaceous adenoma with KA-like architecture

Sebaceous tumors showing a keratoacanthoma-like architecture are likely to indicate MTS



Case

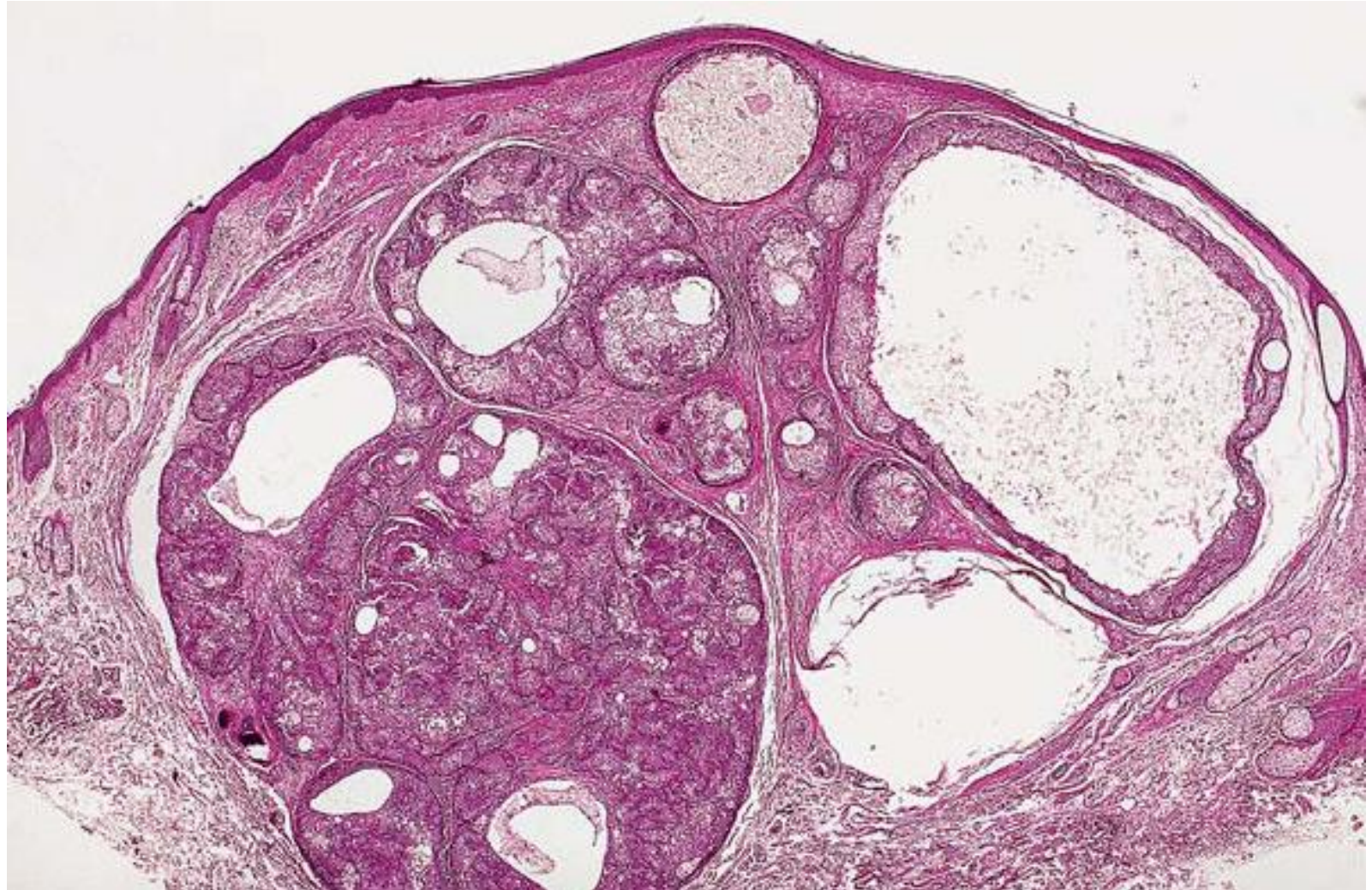


Diagnosis

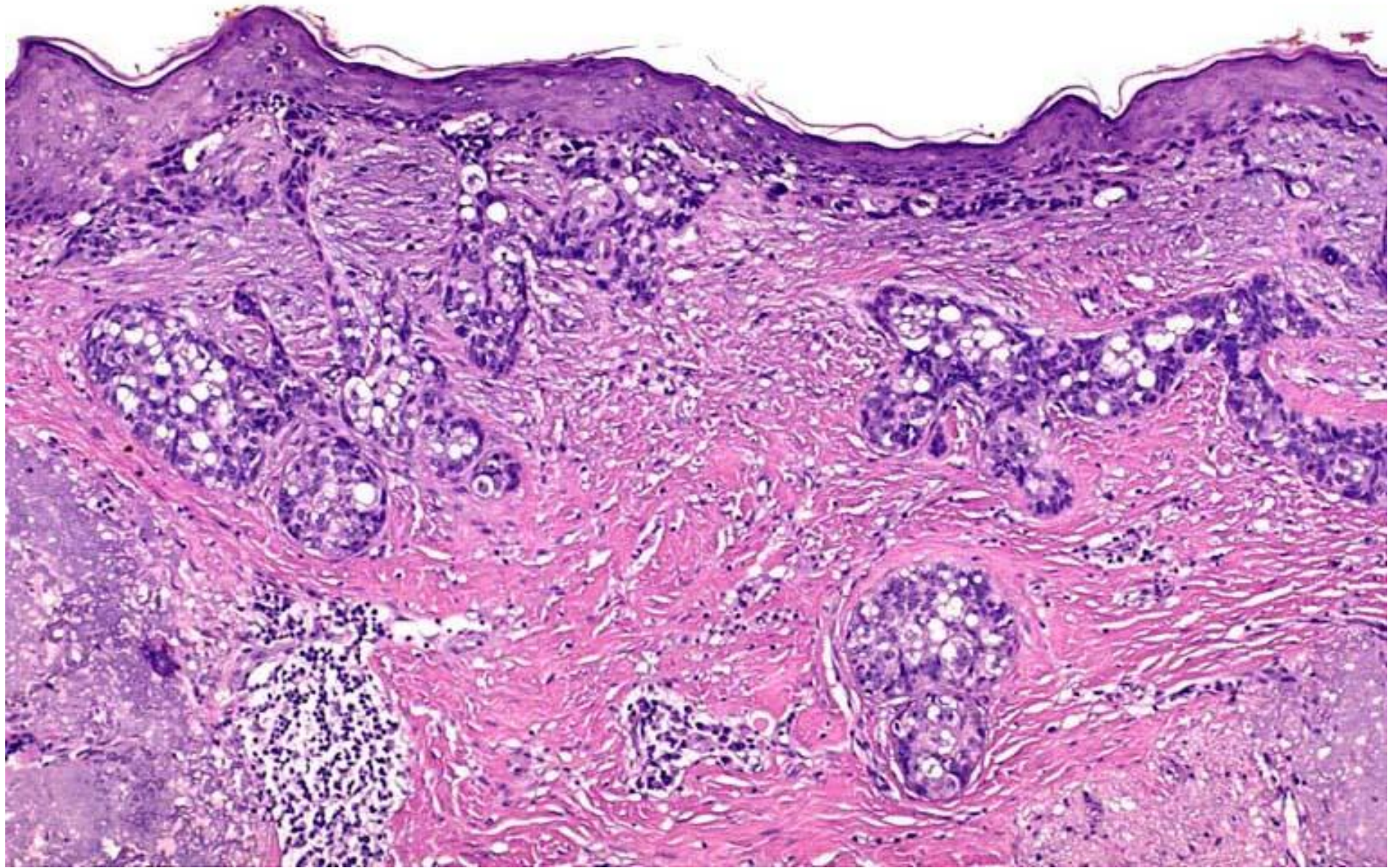
- Additional work-up ????

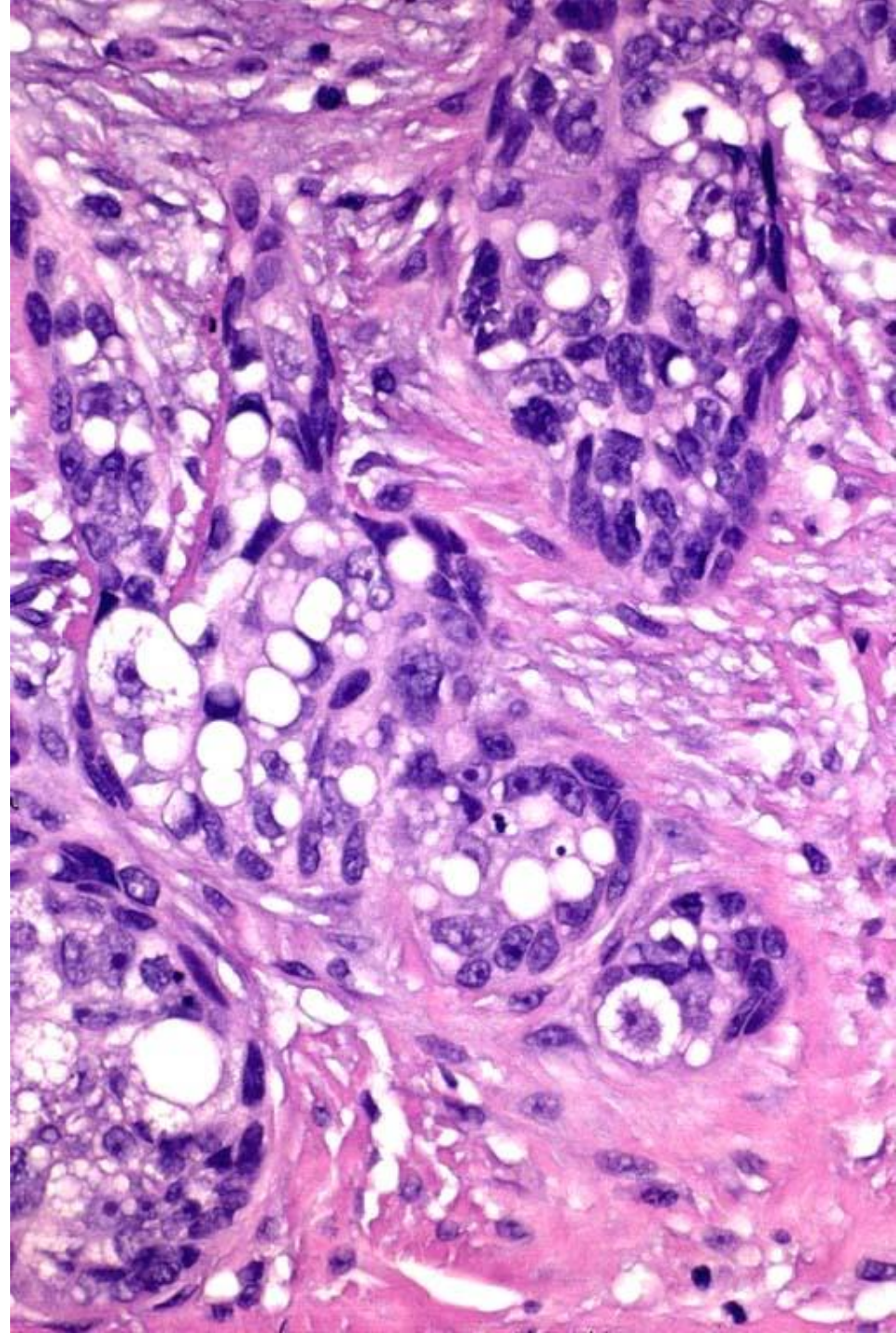
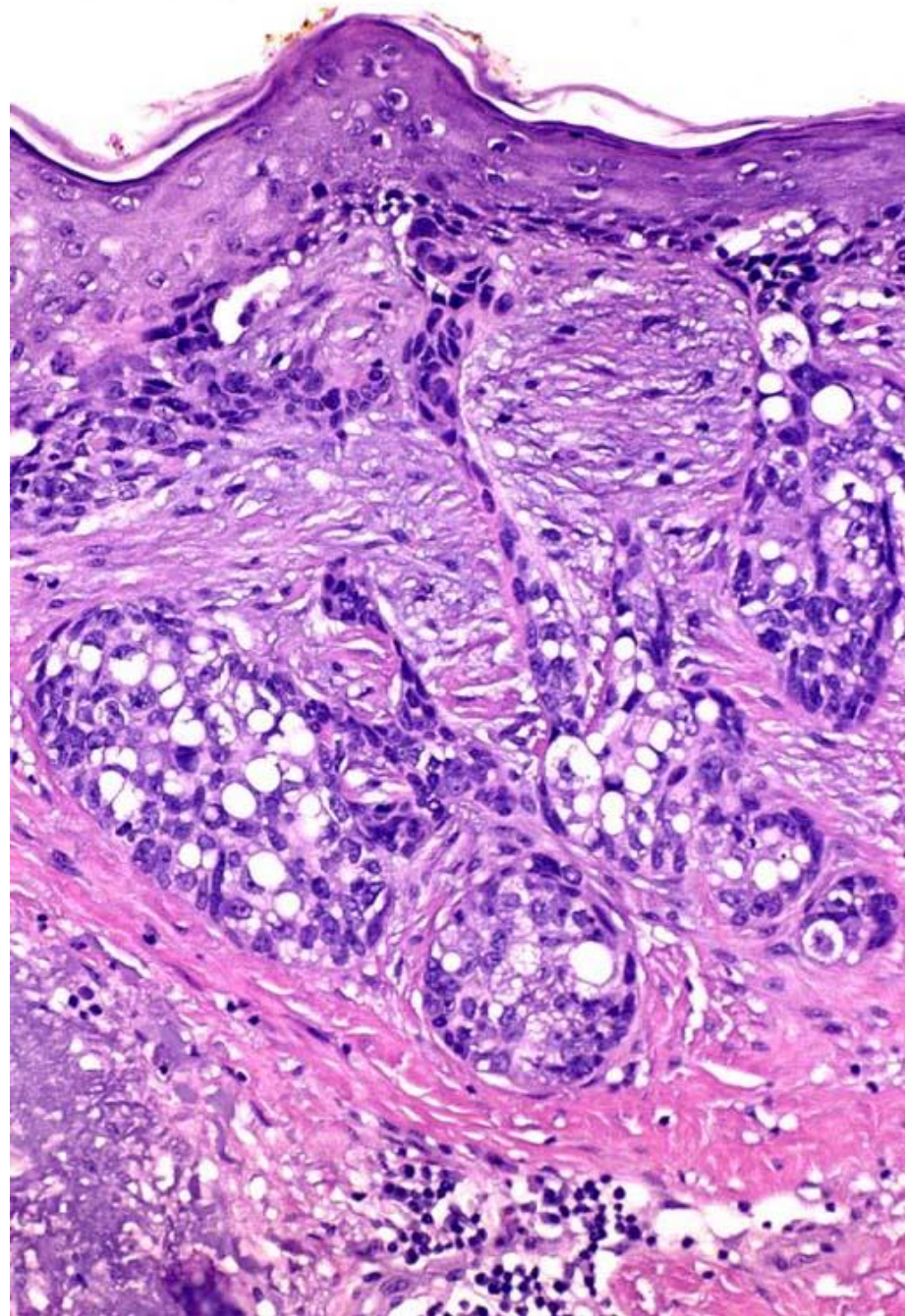
Sebaceous epithelioma showing cystic change

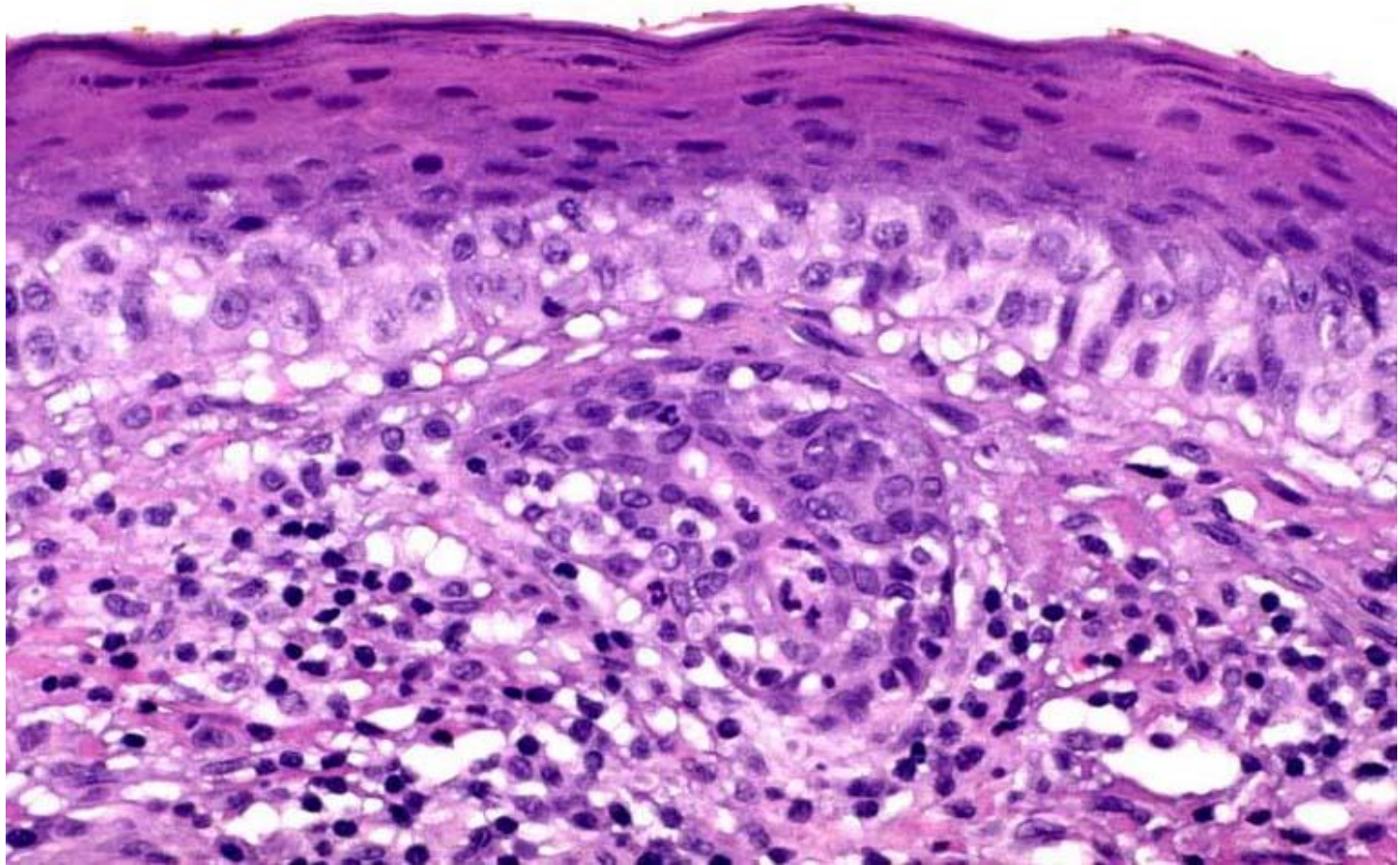
Sebaceous tumors showing cystic change are suggestive of MTS

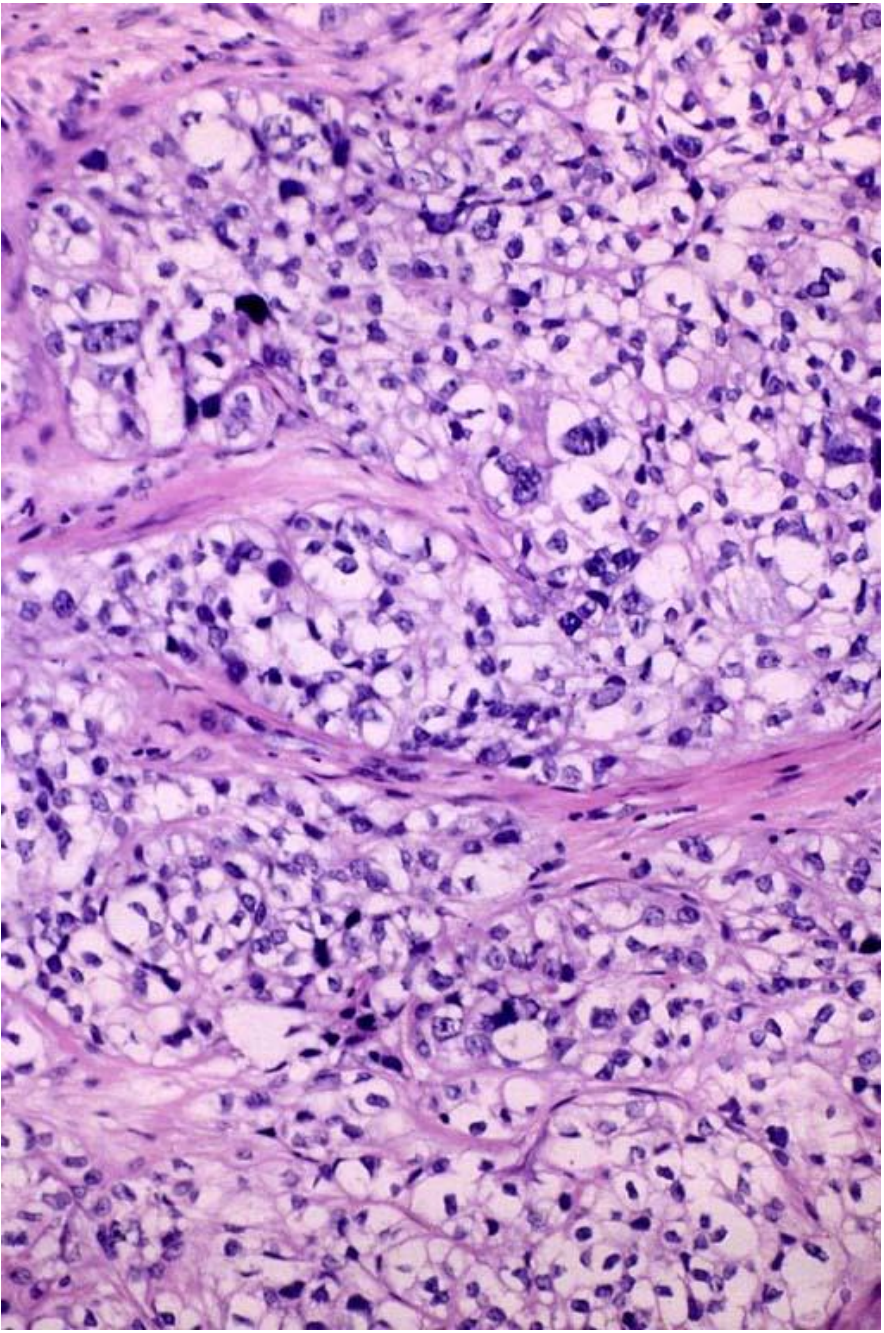


Case

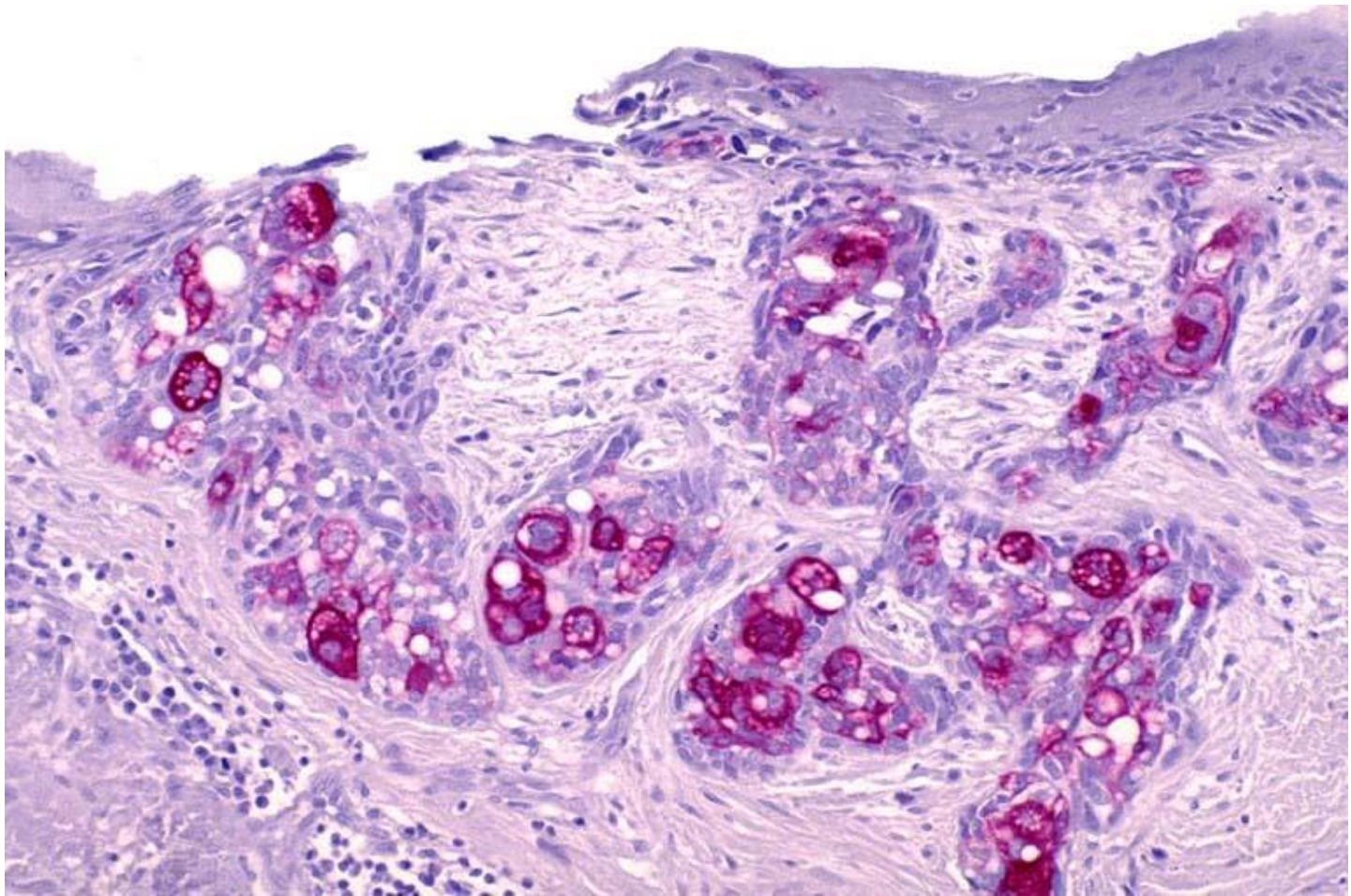








EMA +ve

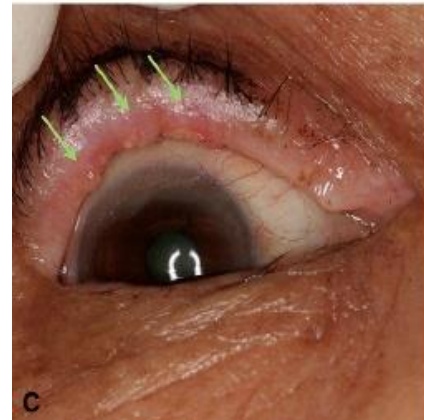


Diagnosis

Sebaceous carcinoma

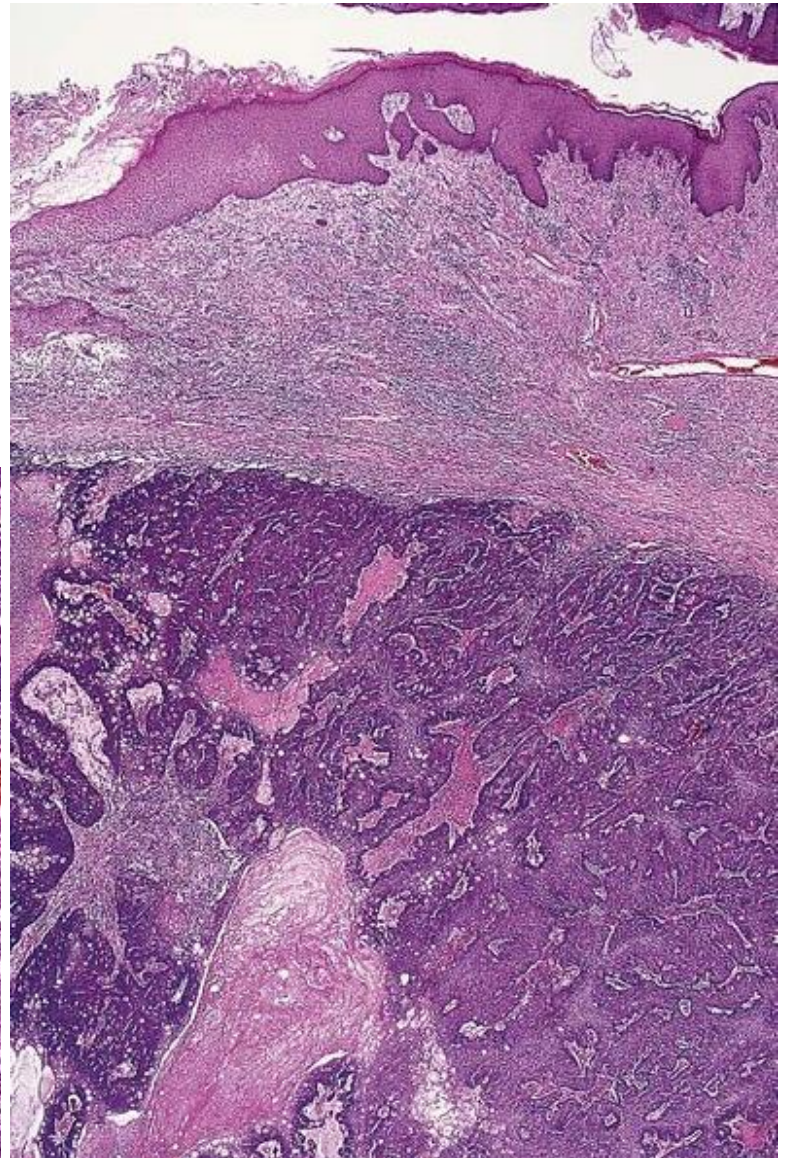
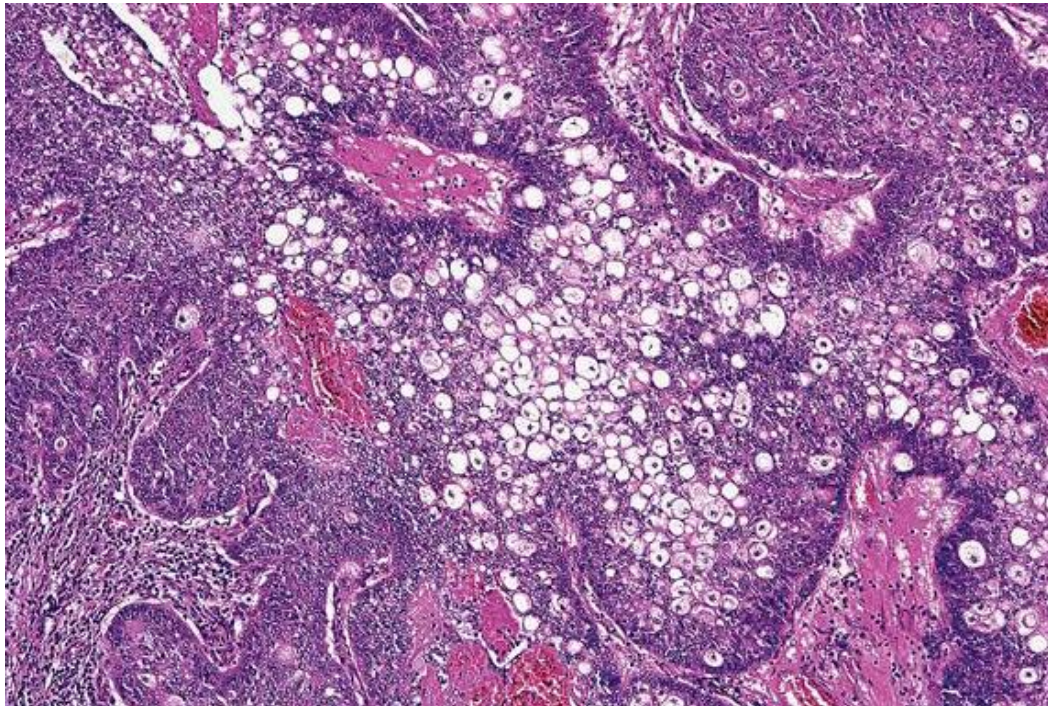
Sebaceous carcinoma

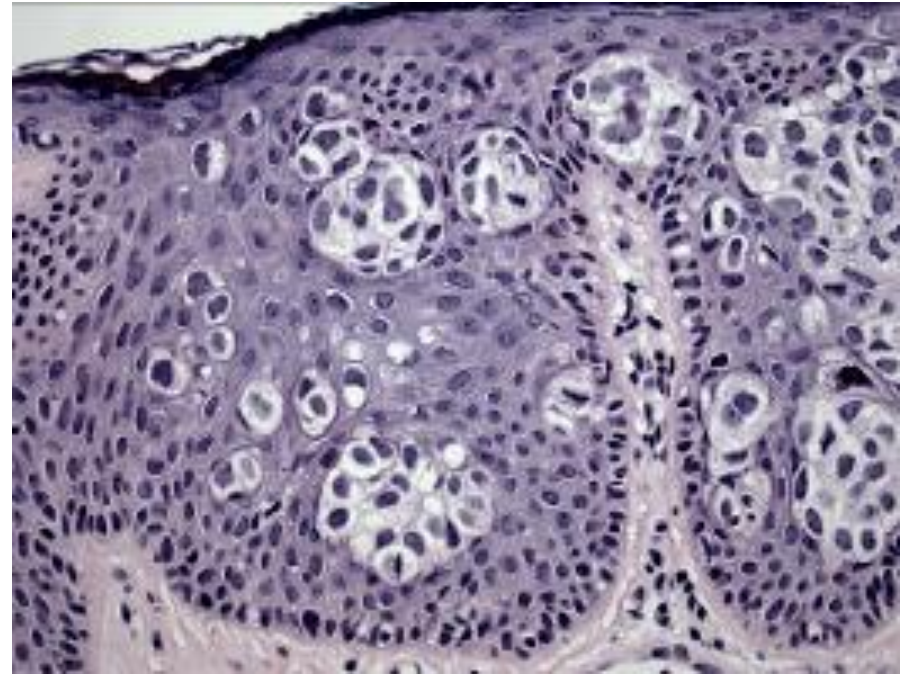
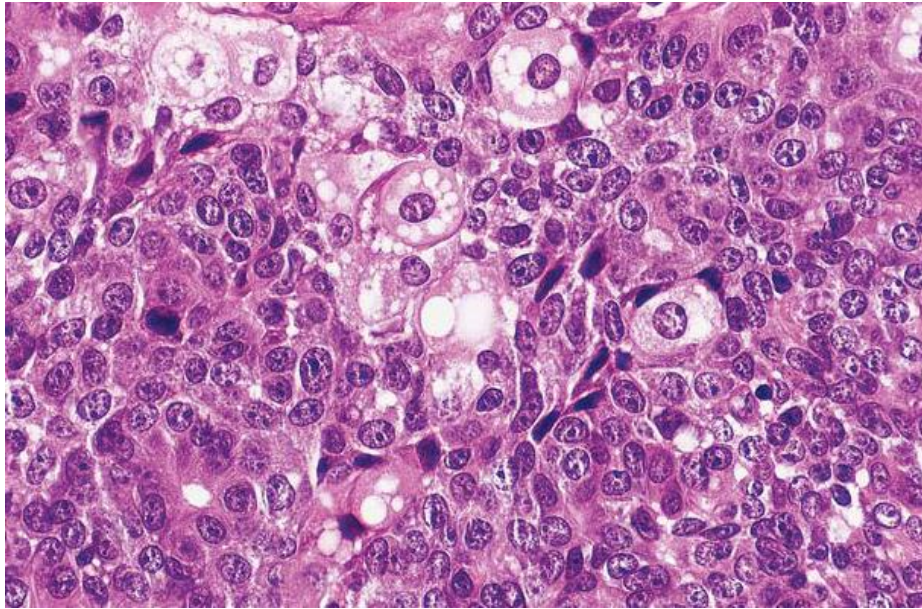
- Malignant neoplasm is most often found in the periocular area
- Nonspecific appearance
- Mohs surgery may be more efficacious than wide excision
- Associated with MTS



Histopathology

- Nuclear pleomorphism, prominent nucleoli, and mitotic figures can be seen.
- Prominent pagetoid spread





Association of sebaceous neoplasms with MTS

MTS

- Rare autosomal dominant genodermatosis characterized by the occurrence of
 - Sebaceous gland neoplasms and/or keratoacanthomas
 - Visceral malignancies that include GI and GU cancers



Perspectives in Dermatopathology

Cutaneous sebaceous neoplasms as markers of Muir-Torre syndrome: a diagnostic algorithm

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Table 1. Percentage of MTS among patients presenting with sebaceous neoplasms

	SA as marker of MTS	SE as marker of MTS	SC as marker of MTS
Popnikolov et al. ⁶	(3 of 12) 25%	—	—
Kruse et al. ⁷	(2 of 6) 33%	(5 of 16) 31%	(2 of 3) 66%
Chhibber et al. ⁹	(9 of 15) 60%	(6 of 7) 86%	(5 of 5) 100%

MTS, Muir-Torre syndrome; SA, sebaceous adenoma; SE, sebaceous epithelioma; SC, sebaceous carcinoma.

Underlying mutations: MMR genes

- MTS is usually the result of germline mutation in one or more of the DNA mismatch repair (MMR) genes which include
 - *MLH-1*
 - *MSH-2*
 - *MSH-6*
- Recent evidence suggests *that* IHC is very sensitive and effective in detecting these defects in cutaneous tumors in MTS

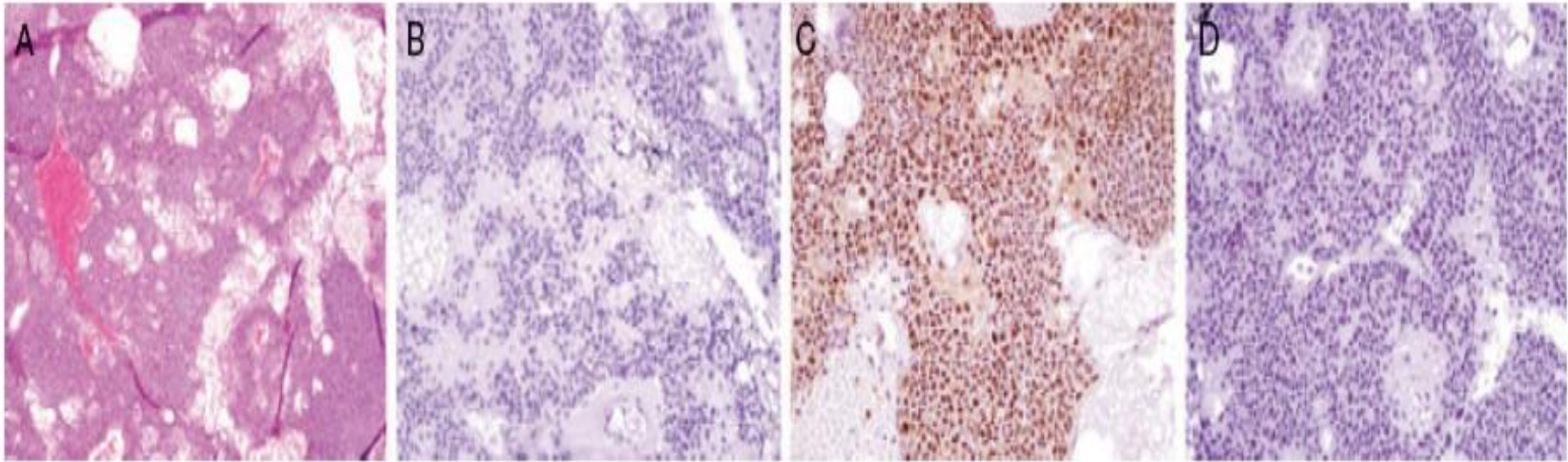


Fig. 1. Representative example of immunohistochemical staining demonstrating lack of expression of *MLH-1* in a sebaceous neoplasm.

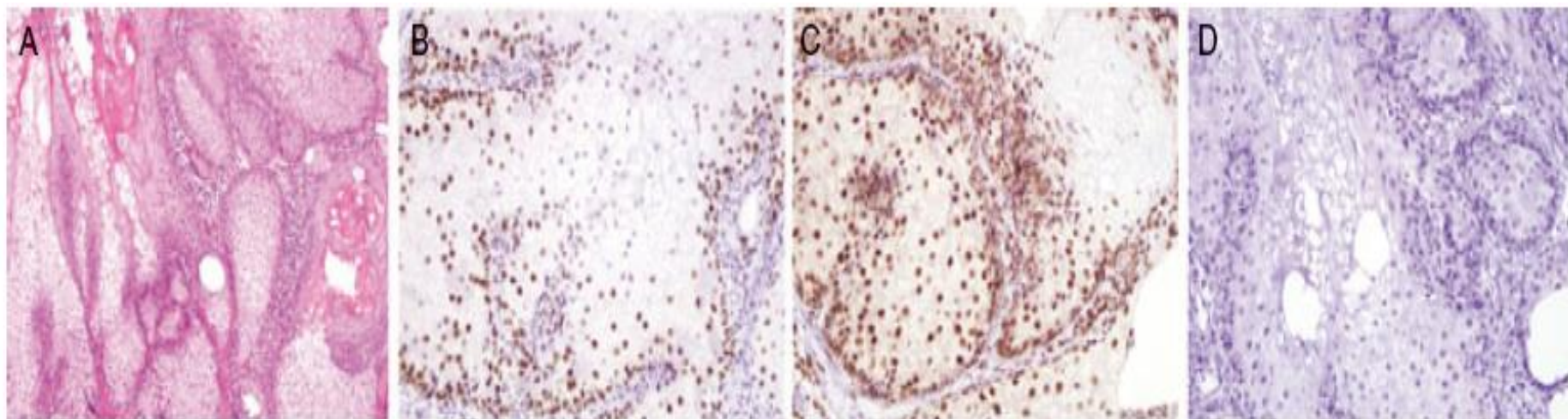


Fig. 2. Representative example of immunohistochemical staining demonstrating lack of expression of *MSH-6* in a sebaceous neoplasm.

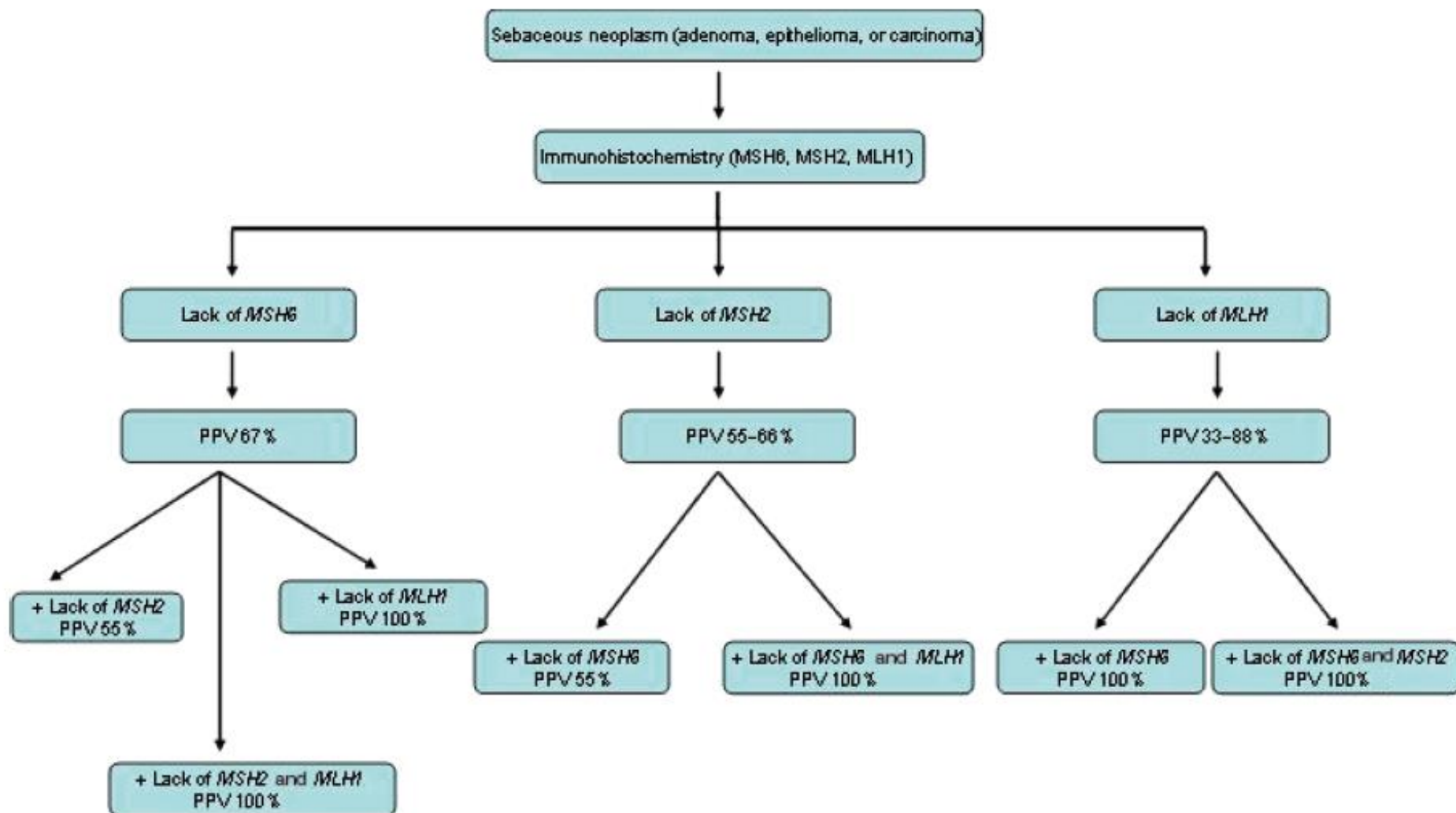


Fig. 4. Positive predictive values (PPVs) of MMR proteins (*MLH*-1, *MSH*-2, *MSH*-6) in MTS.

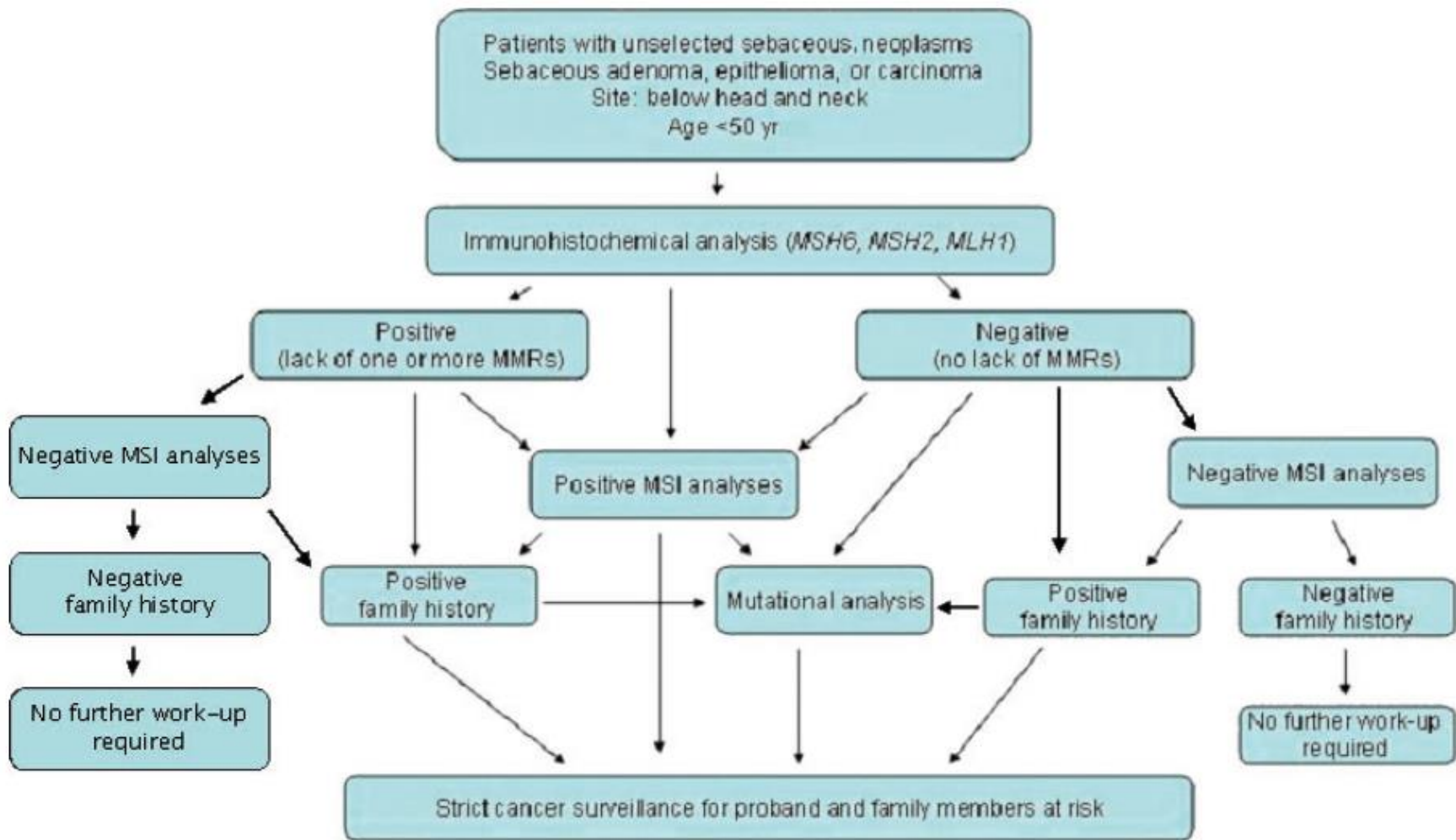
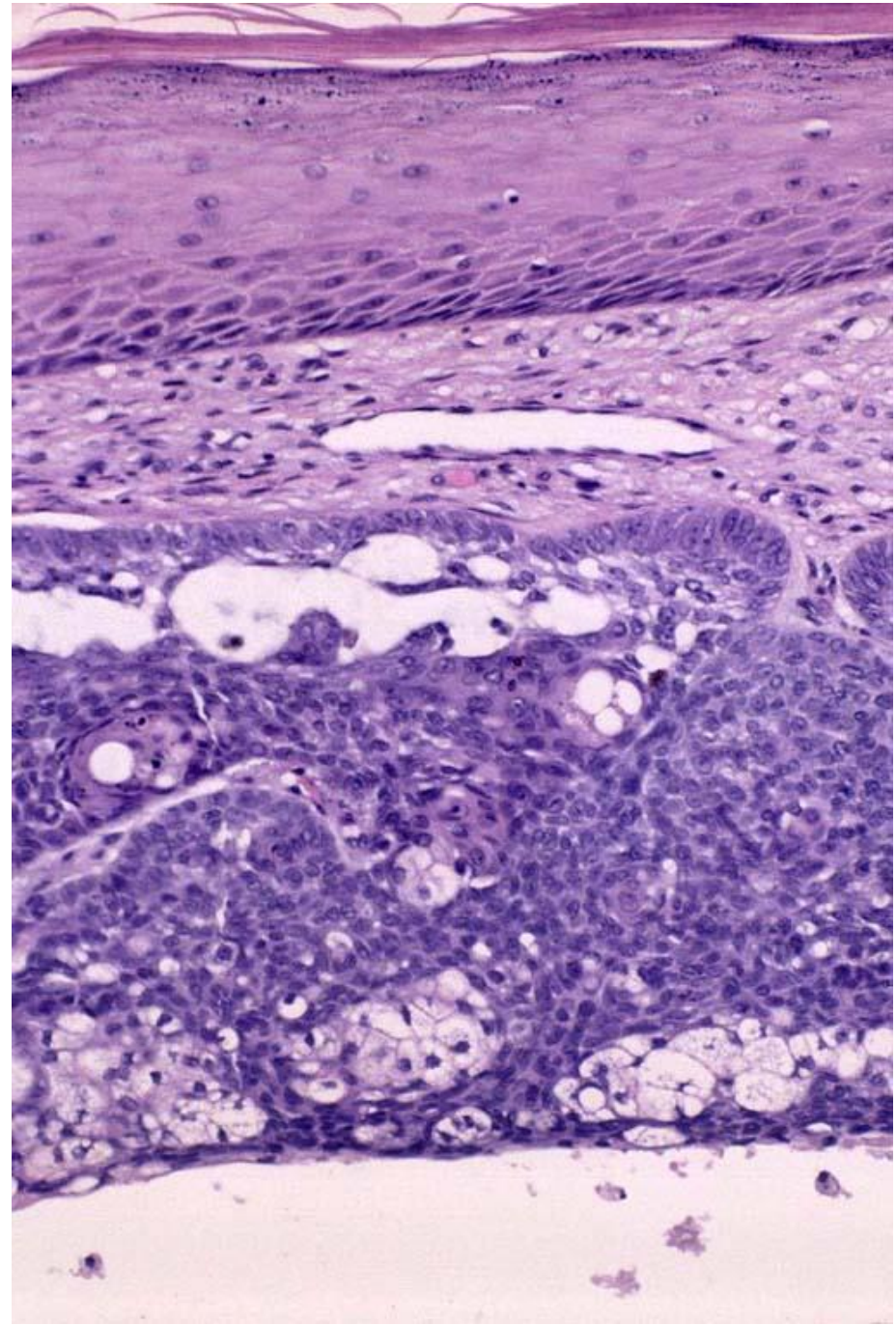
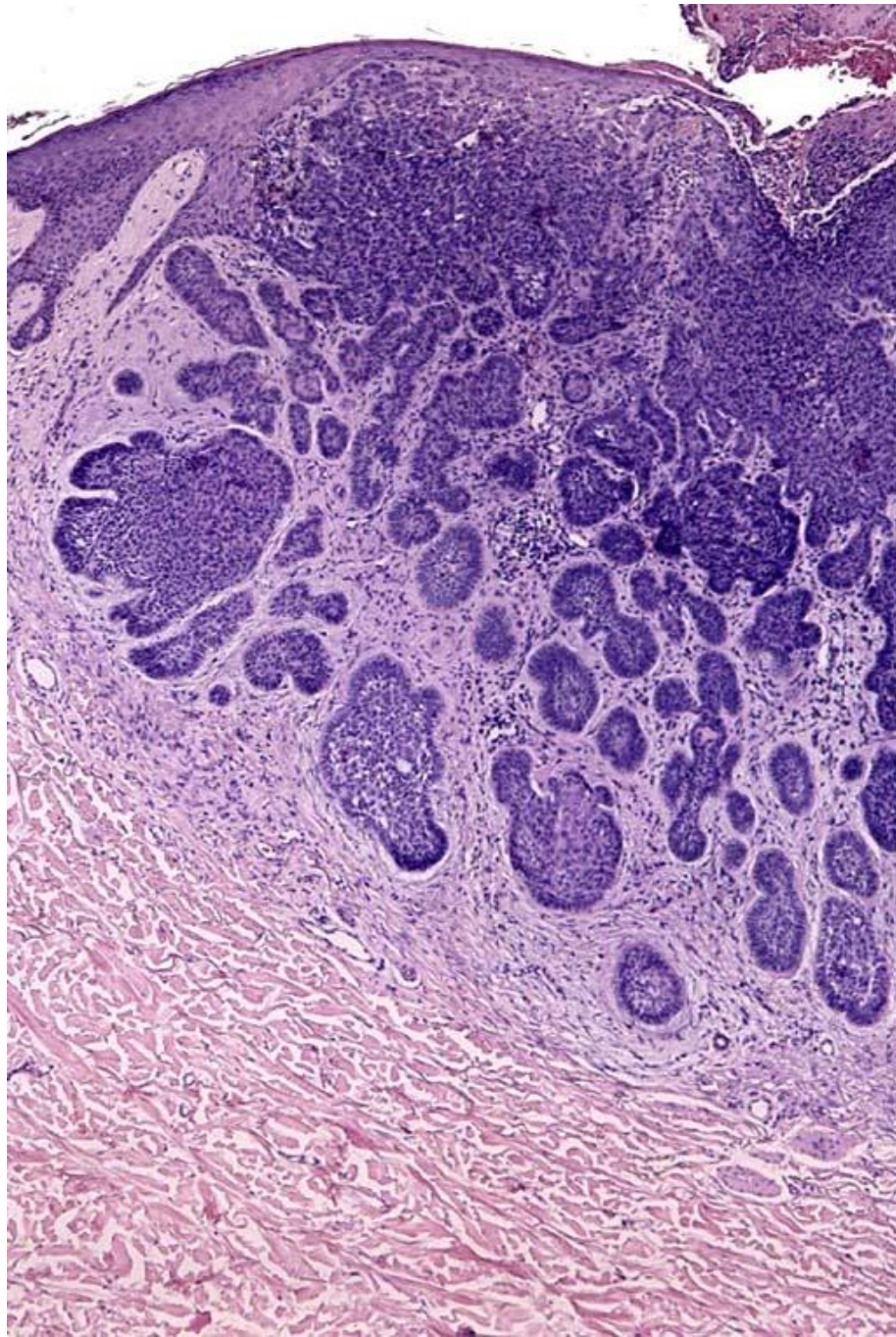
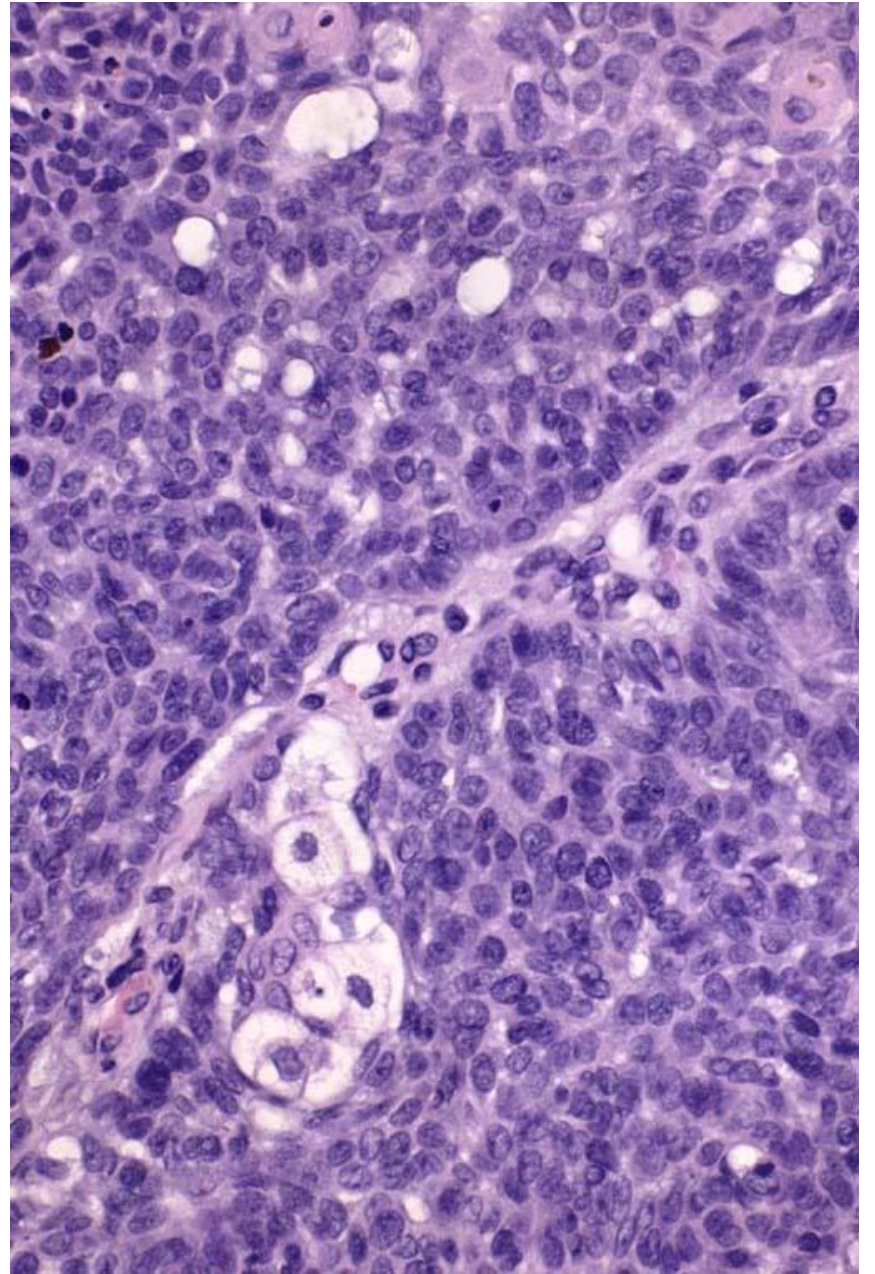
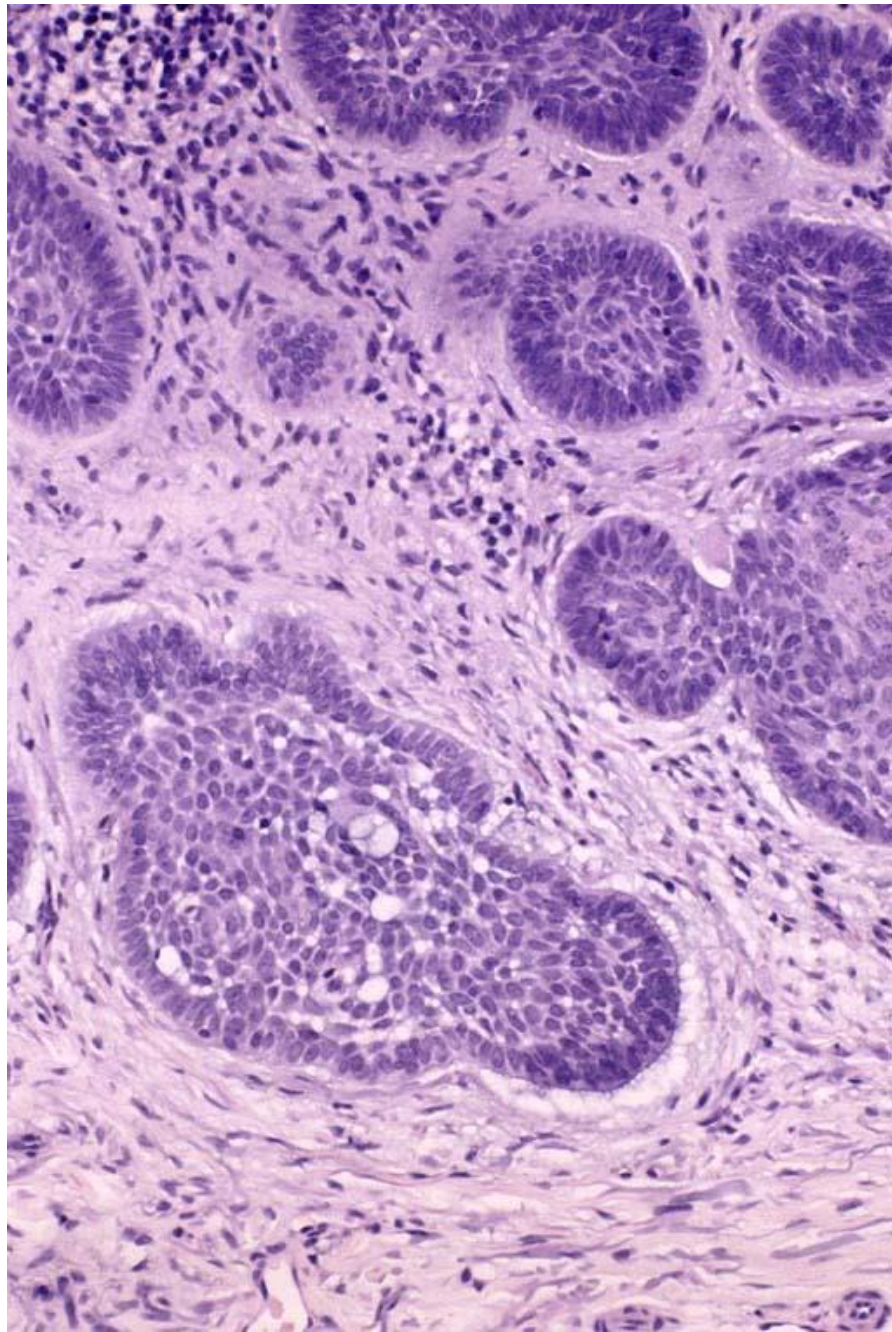


Fig. 5. Diagnostic algorithm for a patient presenting with an unselected sebaceous neoplasm.

Case

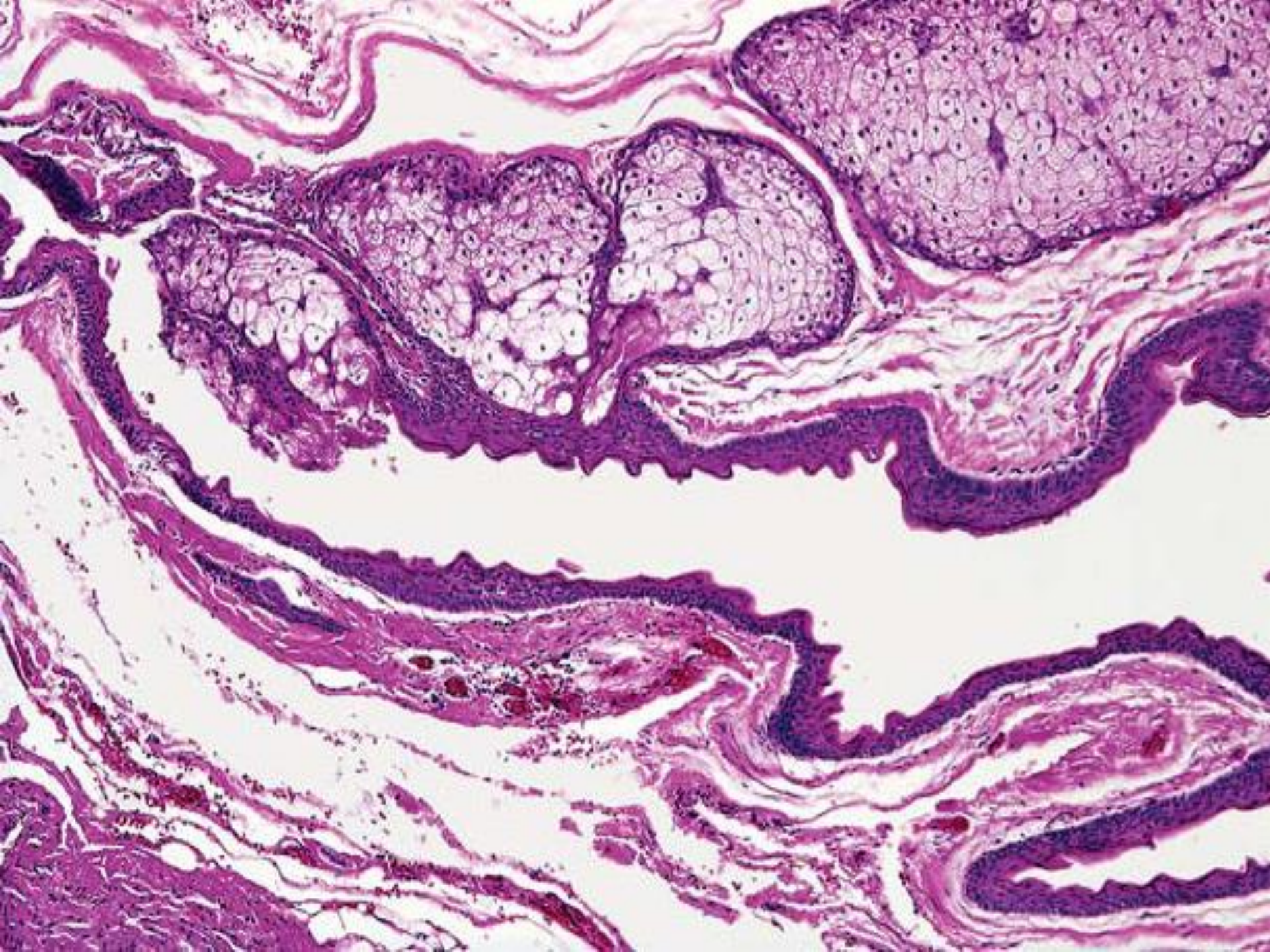




Diagnosis

BCC with sebaceous differentiation

Case



Diagnosis

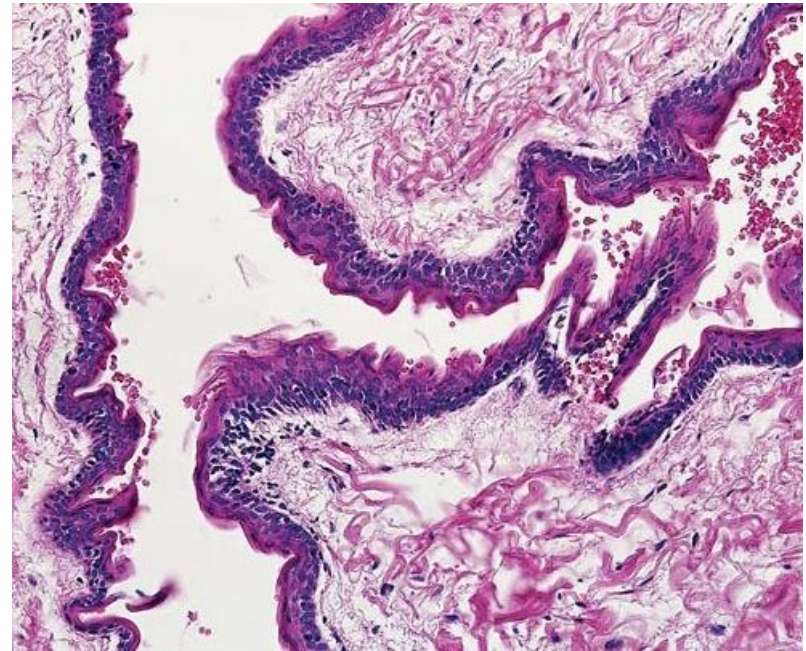
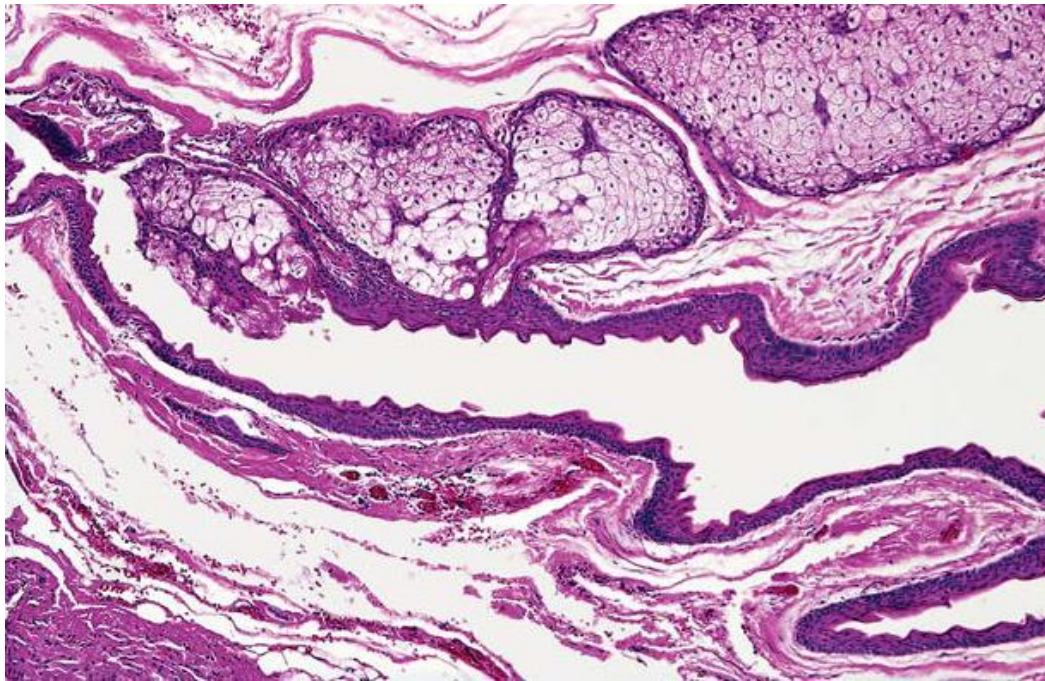
Steatocystoma multiplex

Steatocystoma multiplex

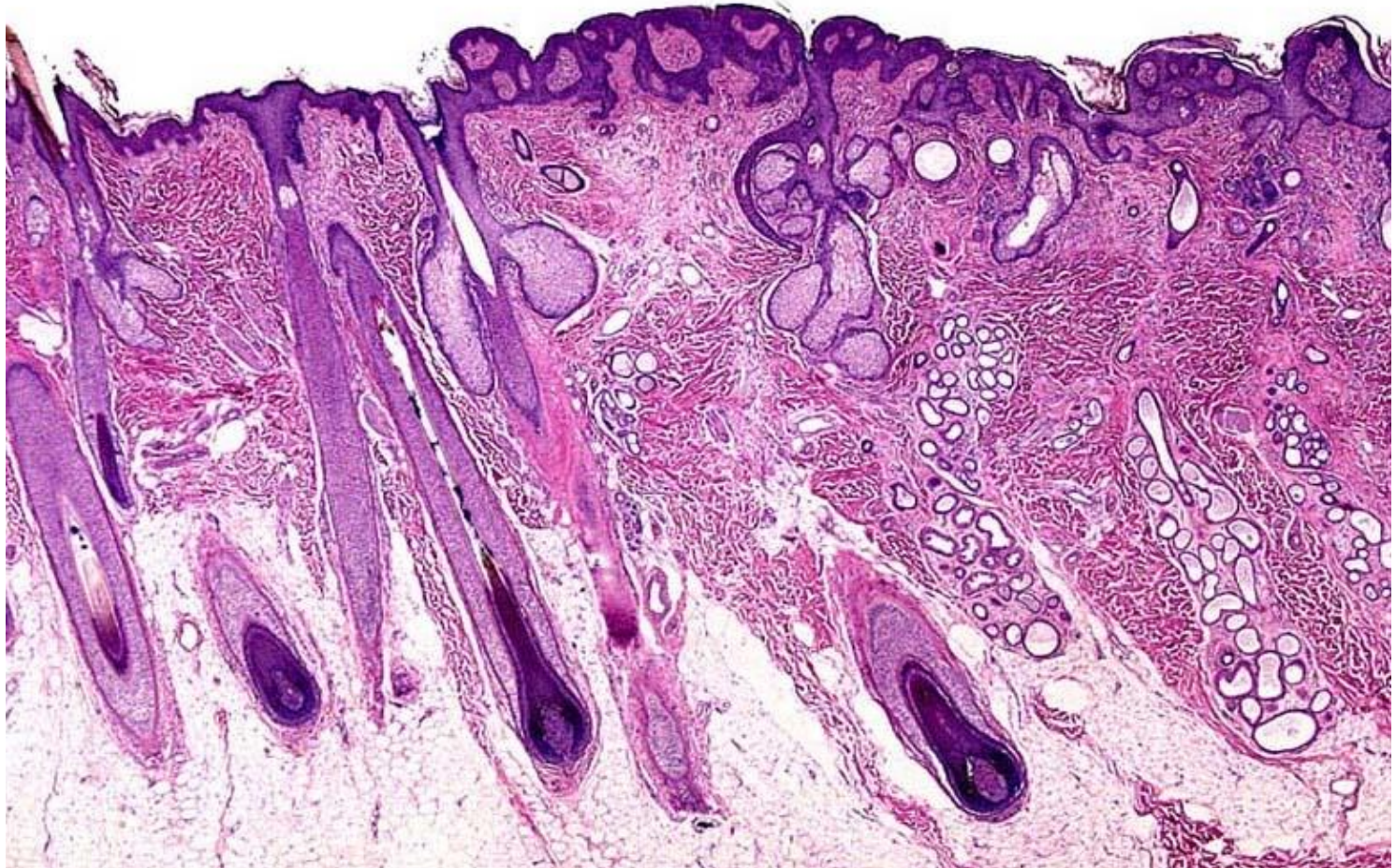


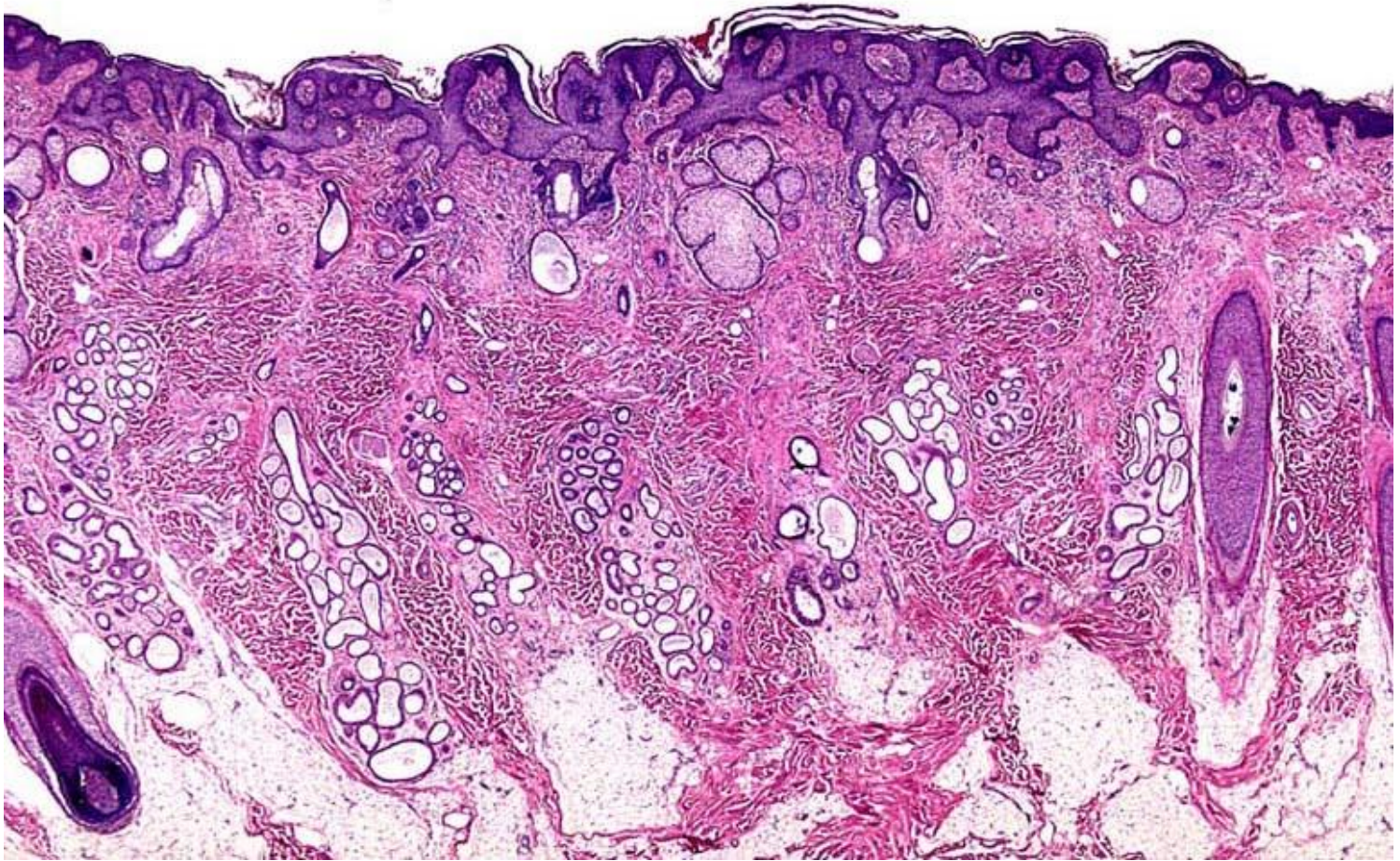
Histopathology

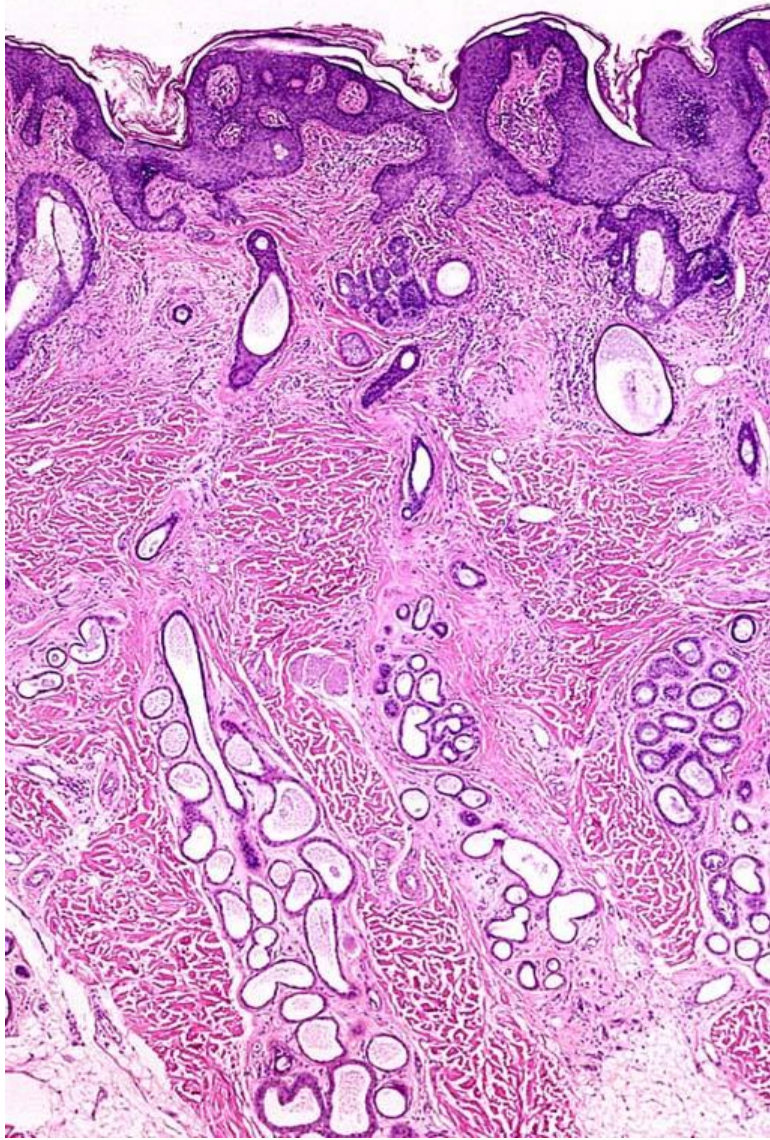
- Collapsed empty cyst lined by squamous epithelium which contains sebaceous glands
- A thick, wavy refractile hyaline cuticle covers the surface of the epithelium



Case







Diagnosis

Nevus sebaceus

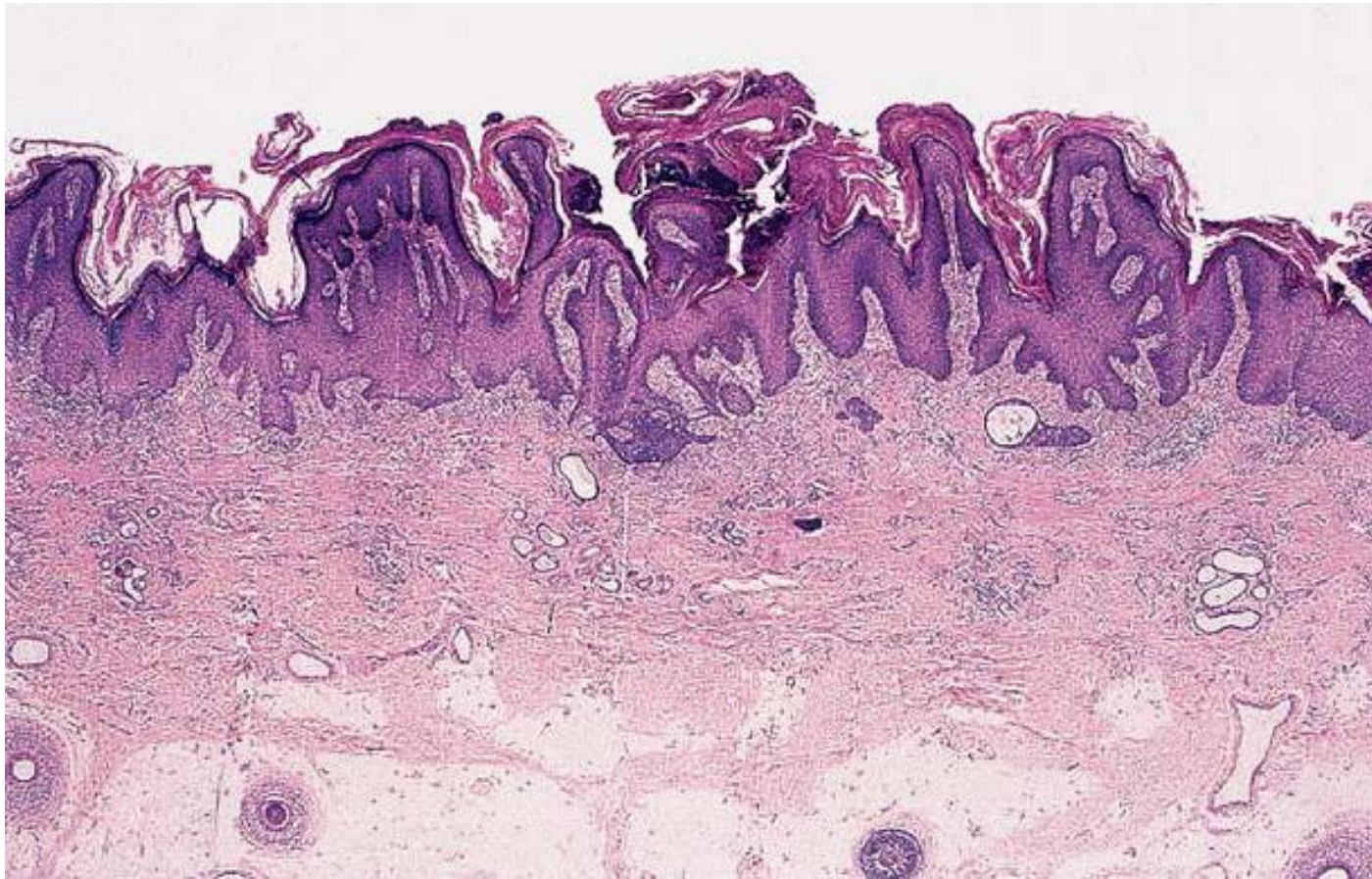
Nevus sebaceus

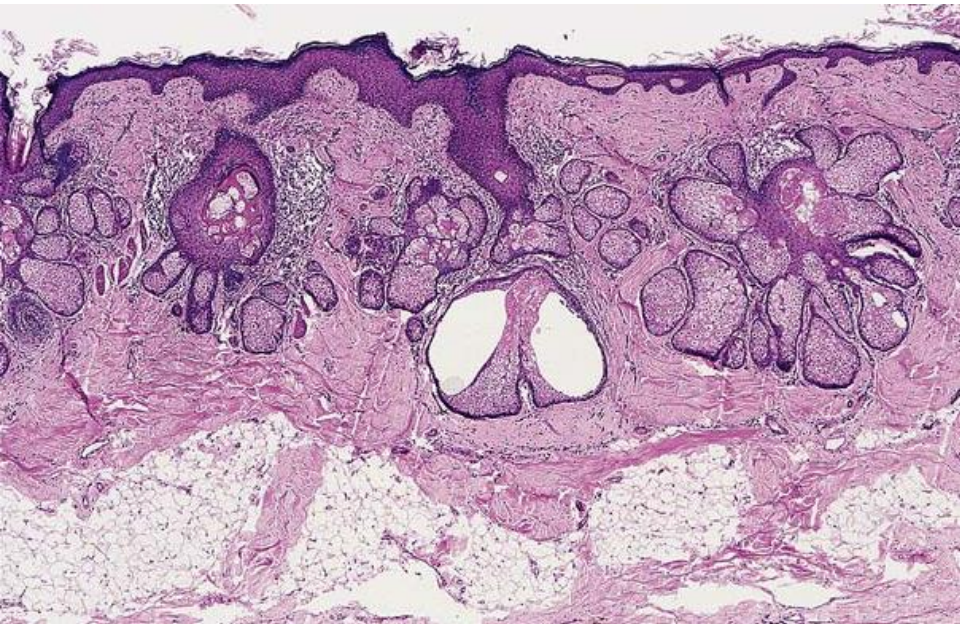
- Scalp
- Yellow cerebriform appearance
- Hamartoma with epidermal, follicular, sebaceous, and apocrine elements
- The risk of malignant neoplasms is small and occurs primarily in older individuals



Histopathology

- Papillomatosis with hyperkeratosis
- Increased sebaceous glands which may communicate directly with the epidermis
- Absence of hair follicles
- Dilated apocrine glands





References

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Thank you