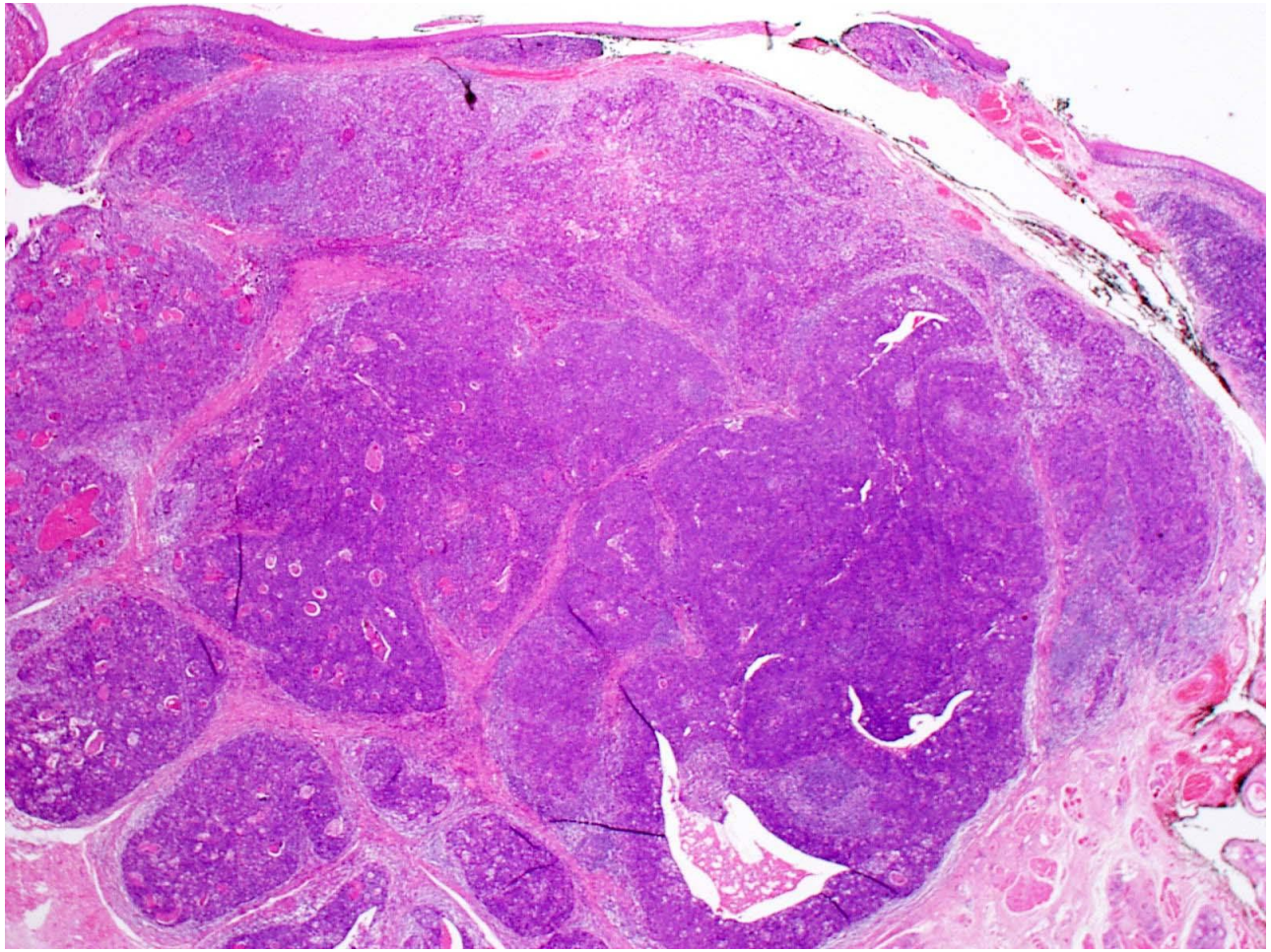
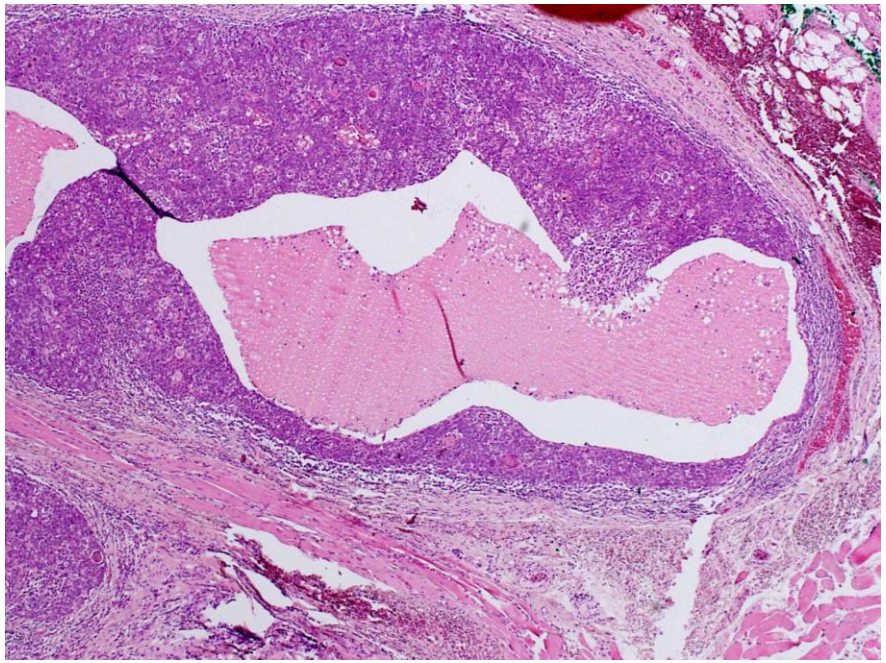
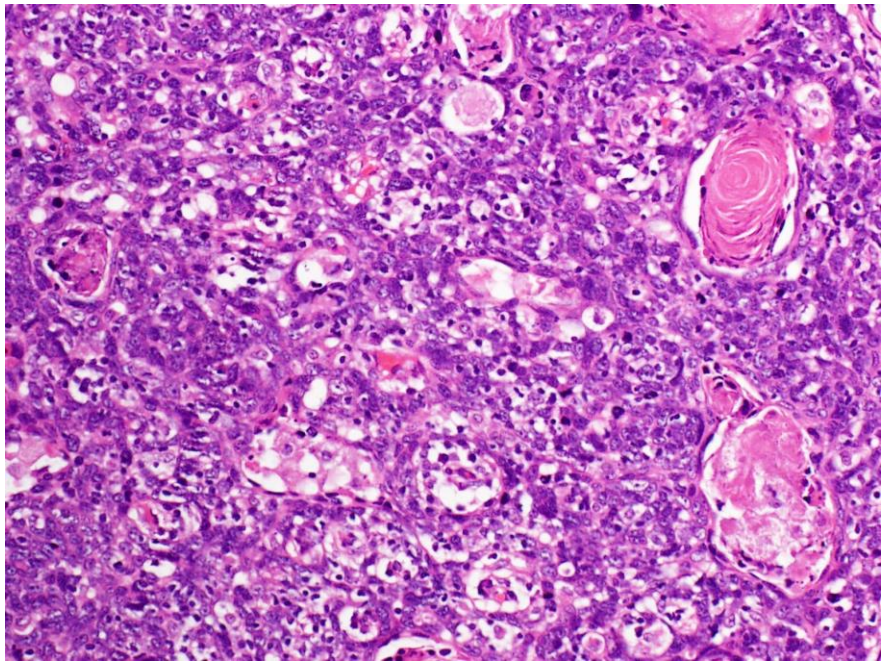
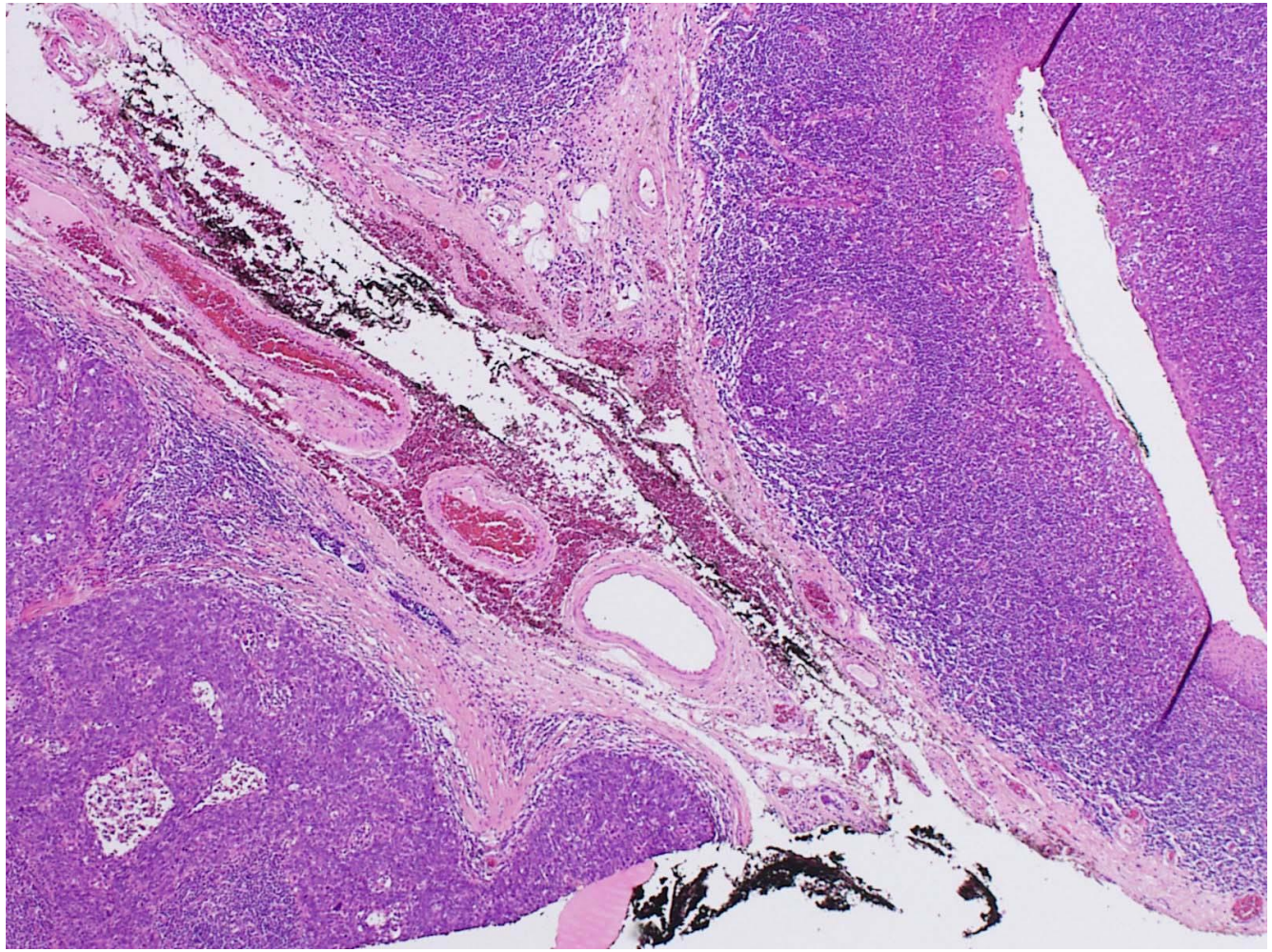
Case 1. 58 yr female
Left tonsil mass, ipsilateral lymphadenopathy

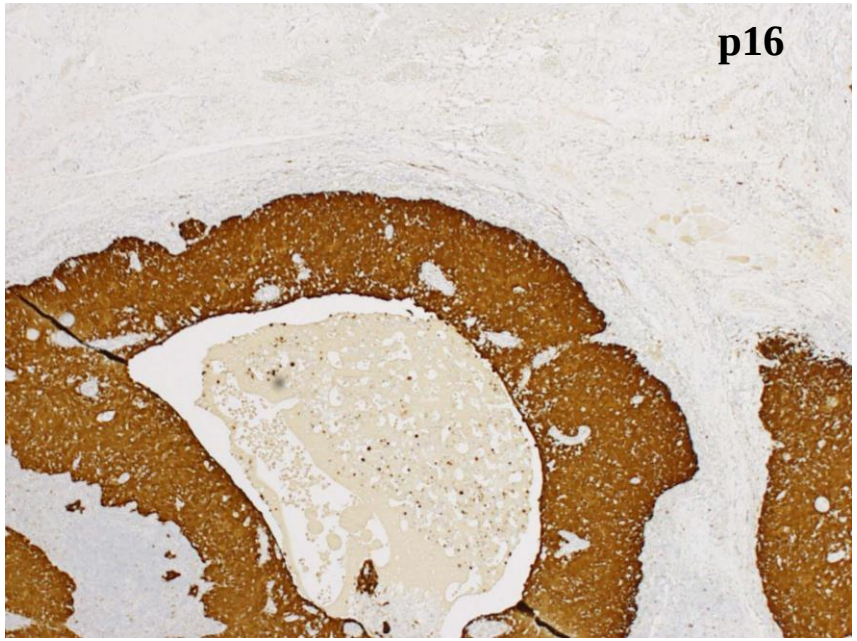
Histology

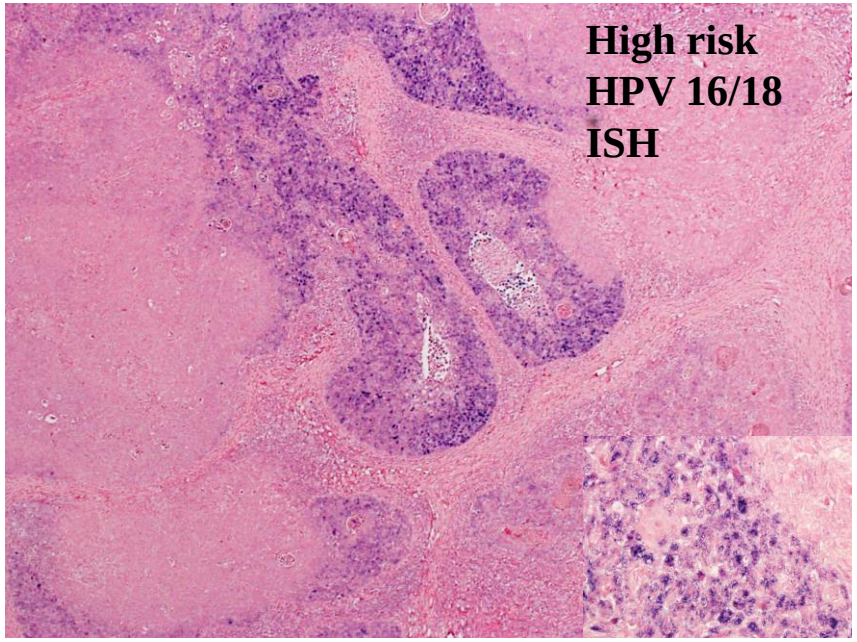









p16


High risk
HPV 16/18
ISH

Diagnosis: Squamous cell carcinoma, HPV positive

- Non keratinising SCC
- p16+
- High risk HPV+

Aetiology	Clinical features	Histology	HPV testing methods	Management
HPV	**Males** **(M:F is 4:1)**	***Primary tumour often small, so may not be easily seen on gross examination (process entire tonsil)*** ***(low T stage compared to conventional)***	***IHC for p16 (tumour suppressor gene)*** ***>70% of tumor cells with cytoplasmic & nuclear staining)*** (Tumour morphology and location acceptable)	***Chemotherapy & Radiotherapy***
HPV type 16 (more than 90%)	***Risk factor: Oral sex***	***Mostly nonkeratinsing, few with minimal or abrupt keratinization*** ***May appear in situ with smooth pushing type periphery.***	***ISH for high risk HPV***	
	Palatine tonsil & lingual tonsil (tongue base)	***High N:C ratio (basaloid), indistinct cytoplasmic boundaries,*** High mitotic & apoptotic rate. ***Do not grade.***	PCR (sensitive but less specific) ***Not to be used as stand alone test, as it will detect non-pathogenic HPV***	
	Present with cystic lymph node metastasis ***(higher stage)*** Small primary usually.	No dysplasia. ***Arise from crypt reticulated epithelium*** Often crypt like distribution or anastomosing ribbons without dispersed invasive islands. Lymphocytes permeate the tumour. **IHC: CK5, p63, p40**		
	(82% 3 yr) Better survival than Keratinising SCC Less likelihood of recurrence	Variants: Adenosquamous, basaloid, Papillary, ciliated, sarcomatoid, *small-cell Neuroendocrine carcinoma*. ***DD: Lymphoma***		**HPV vaccines for prevention.**

Oropharyngeal squamous cell carcinoma

(palatine tonsil, lingual tonsil (tongue base), vallecula)

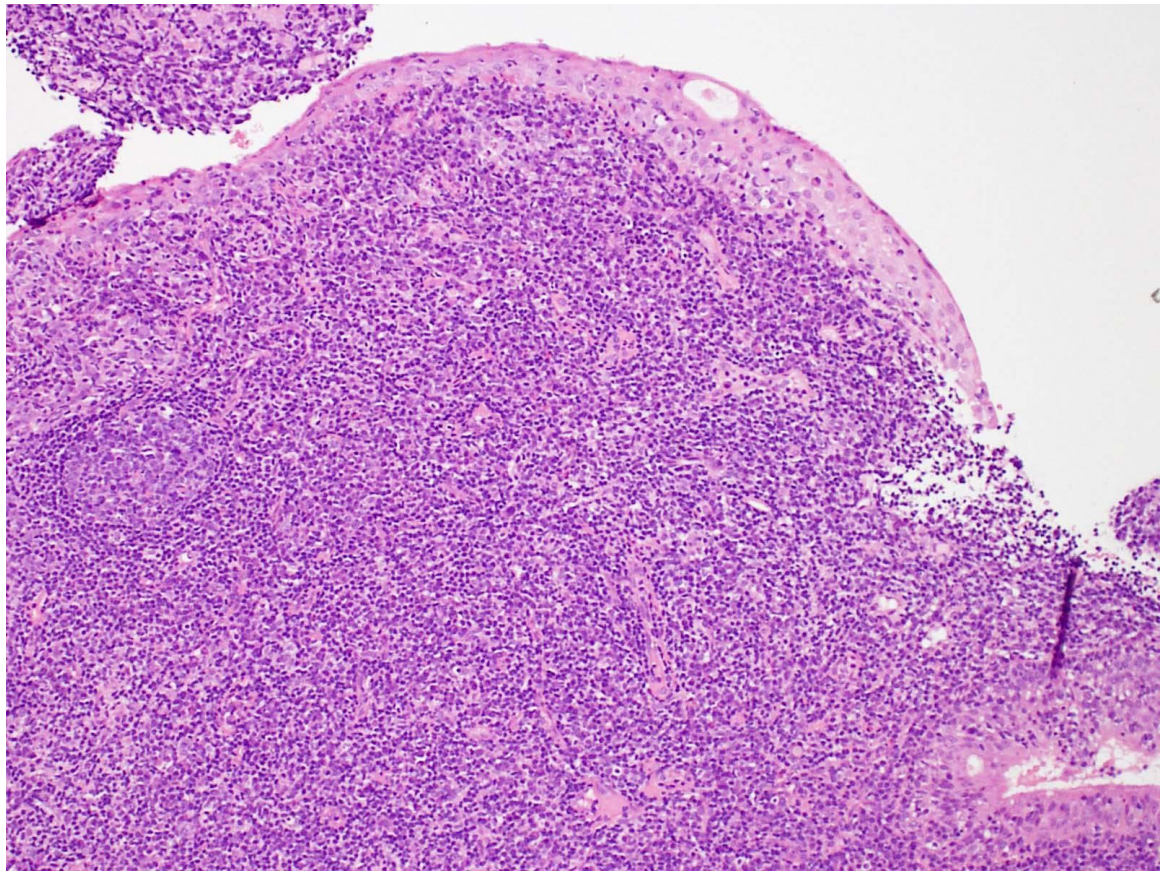
(WHO classification)

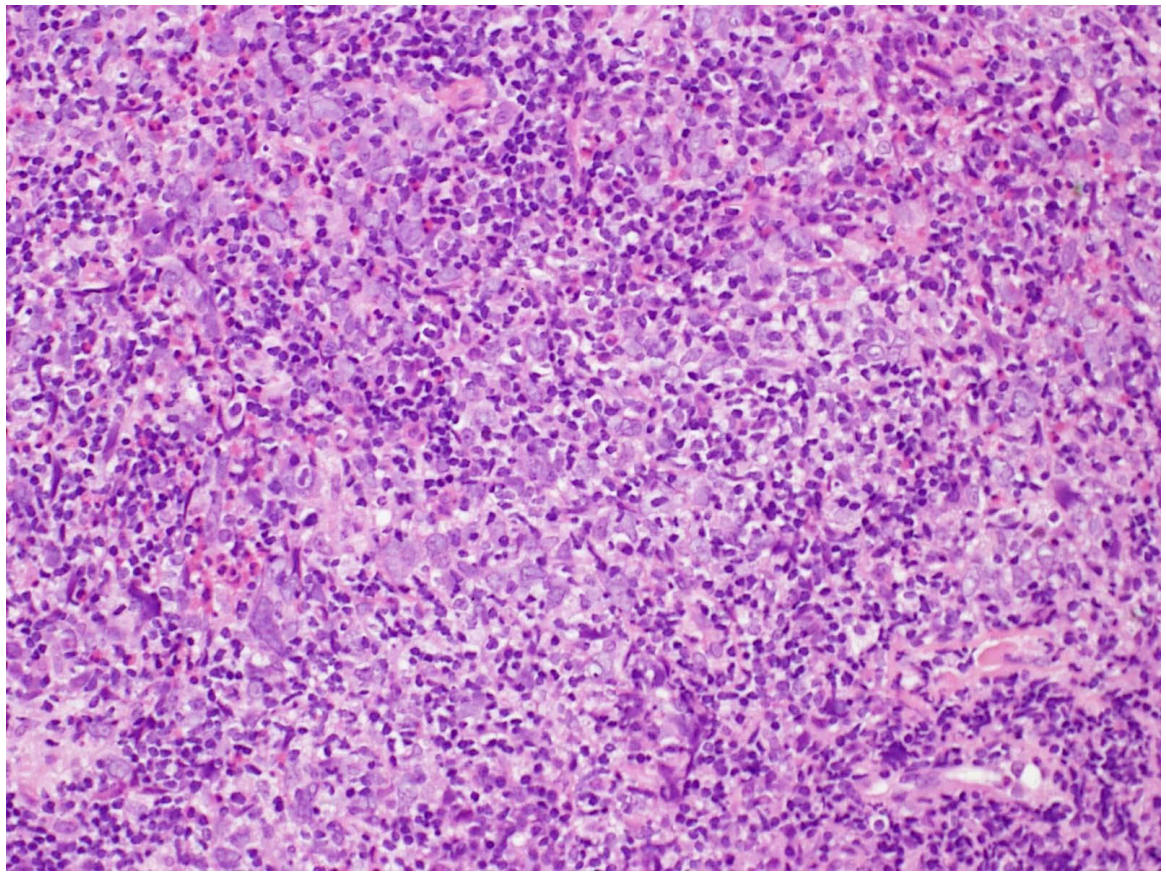
HPV positive

HPV negative

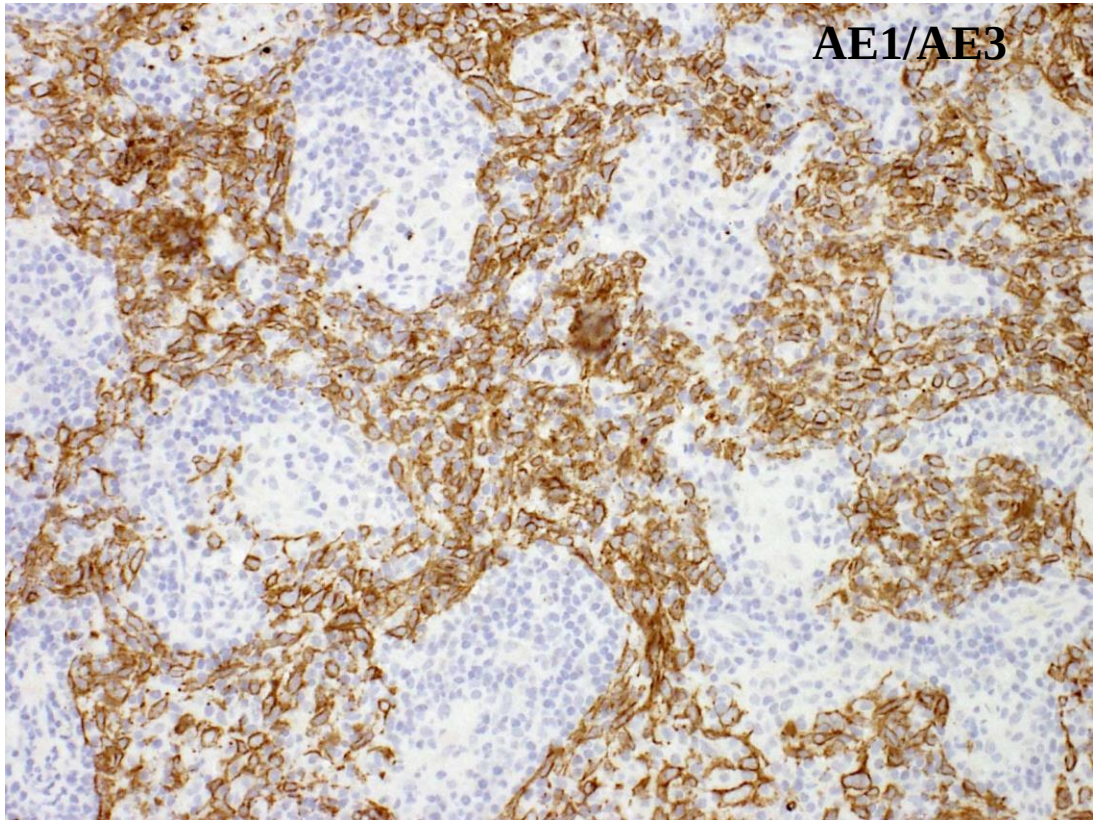
Case 11. 58 yr male
Post nasal space mass

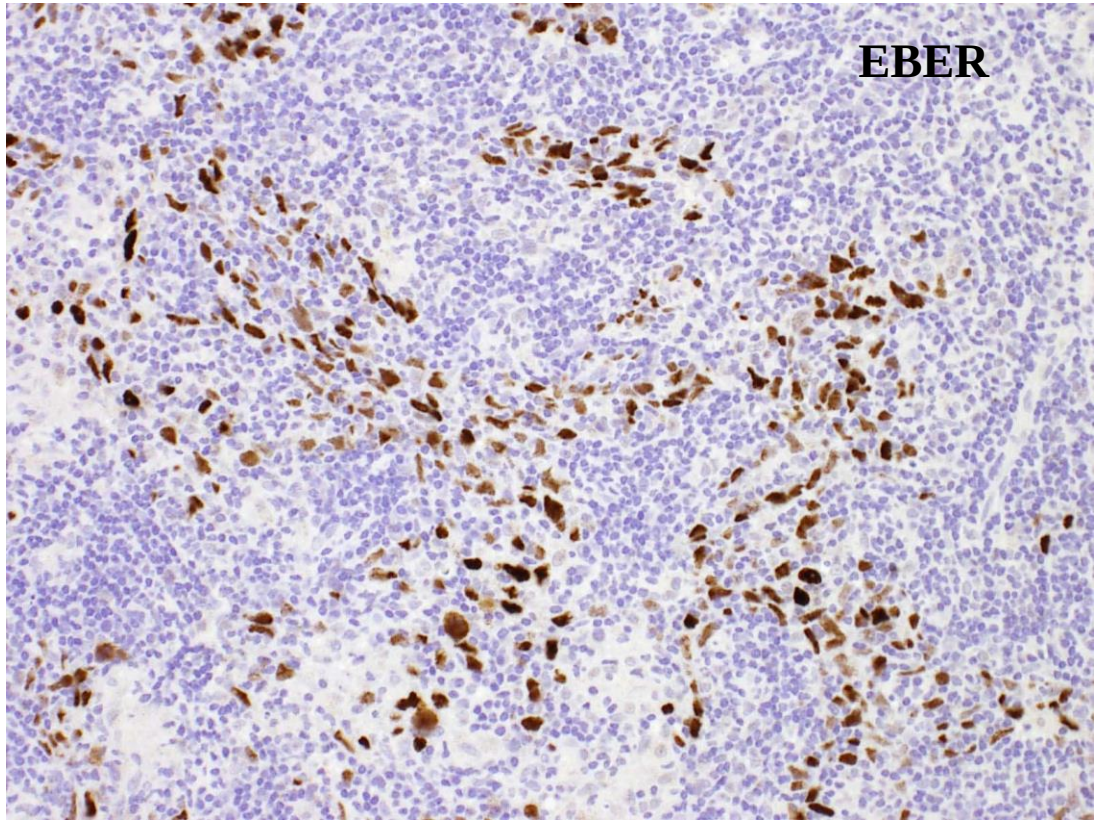
Histology



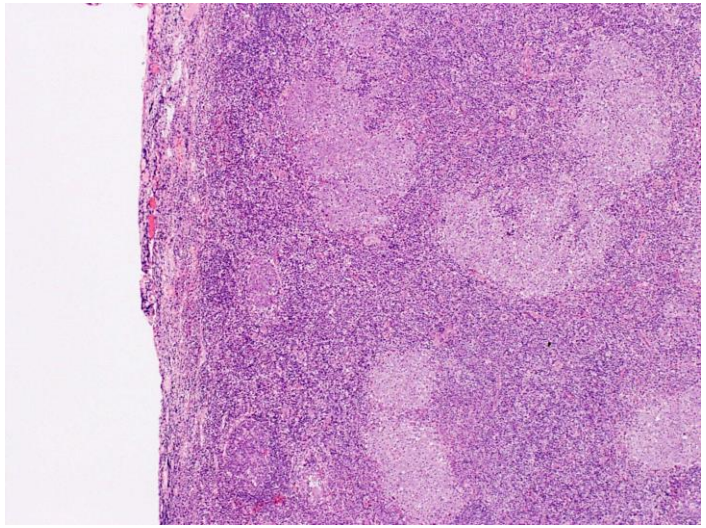
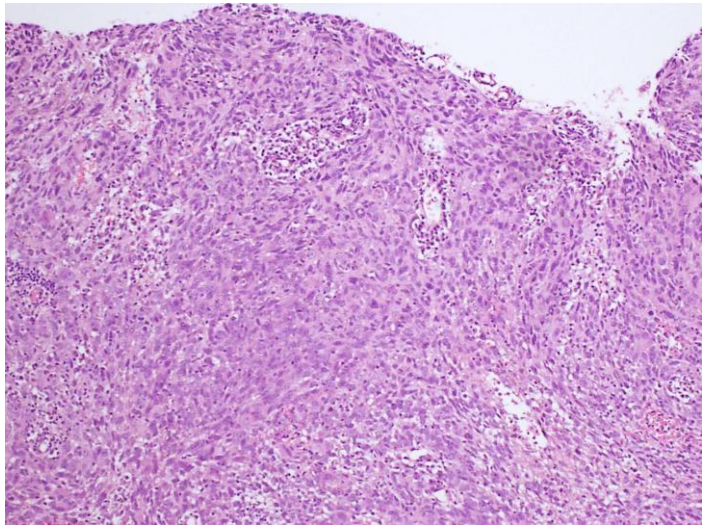
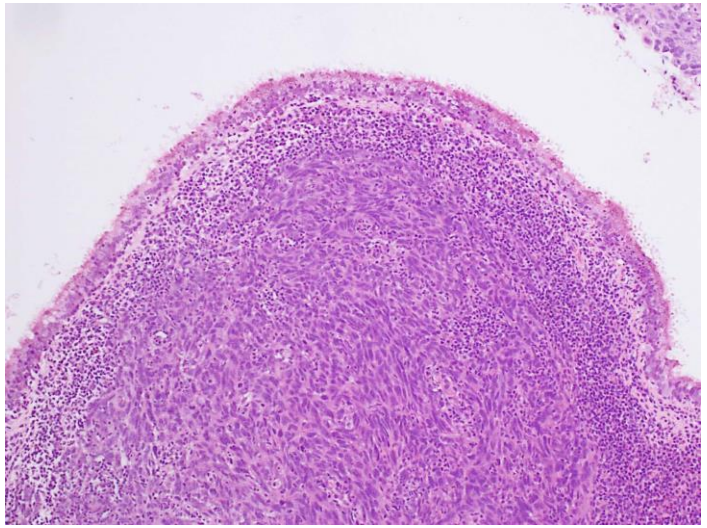
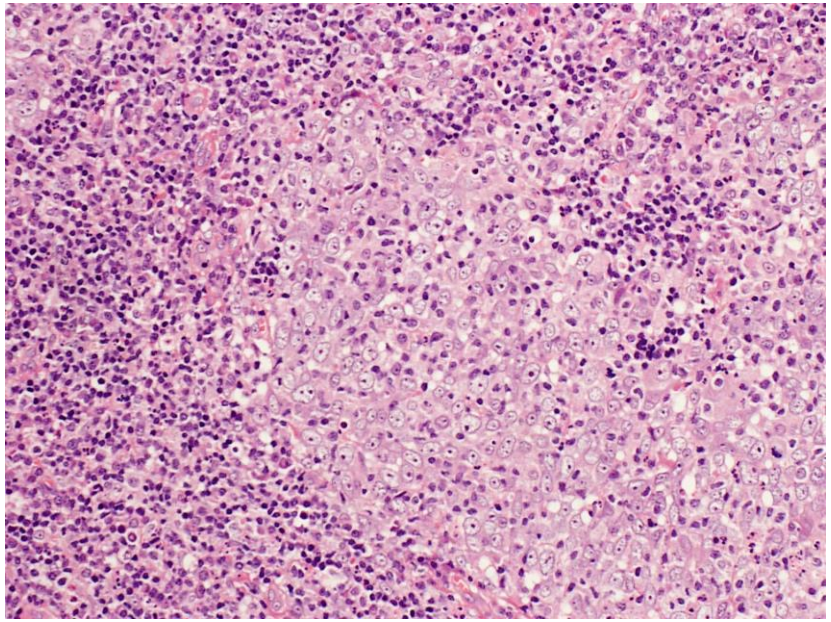
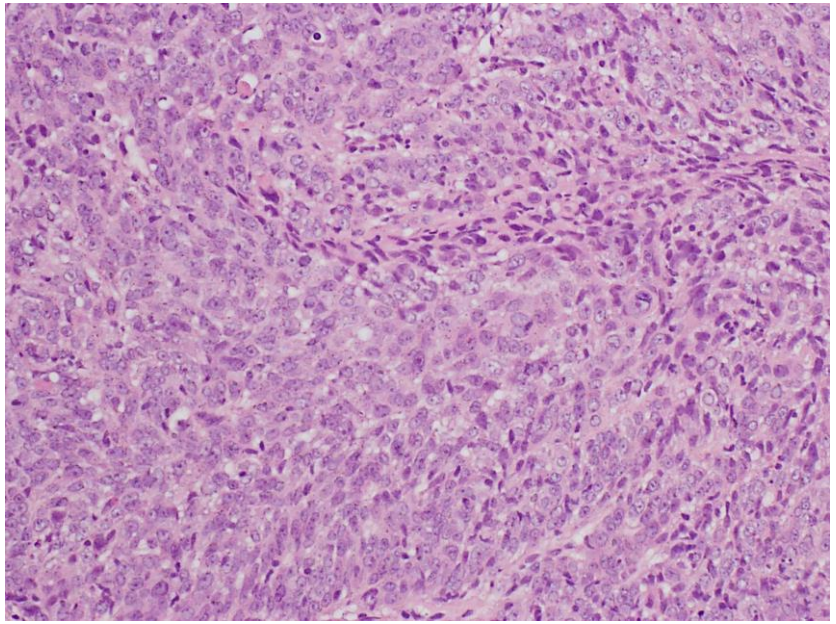


Immunohistochemistry





Microscopic appearances

Diagnosis: Non keratinizing Squamous cell carcinoma EBER positive

Nasopharyngeal carcinoma

(post nasal space)

(WHO classification)

Nasopharyngeal carcinoma

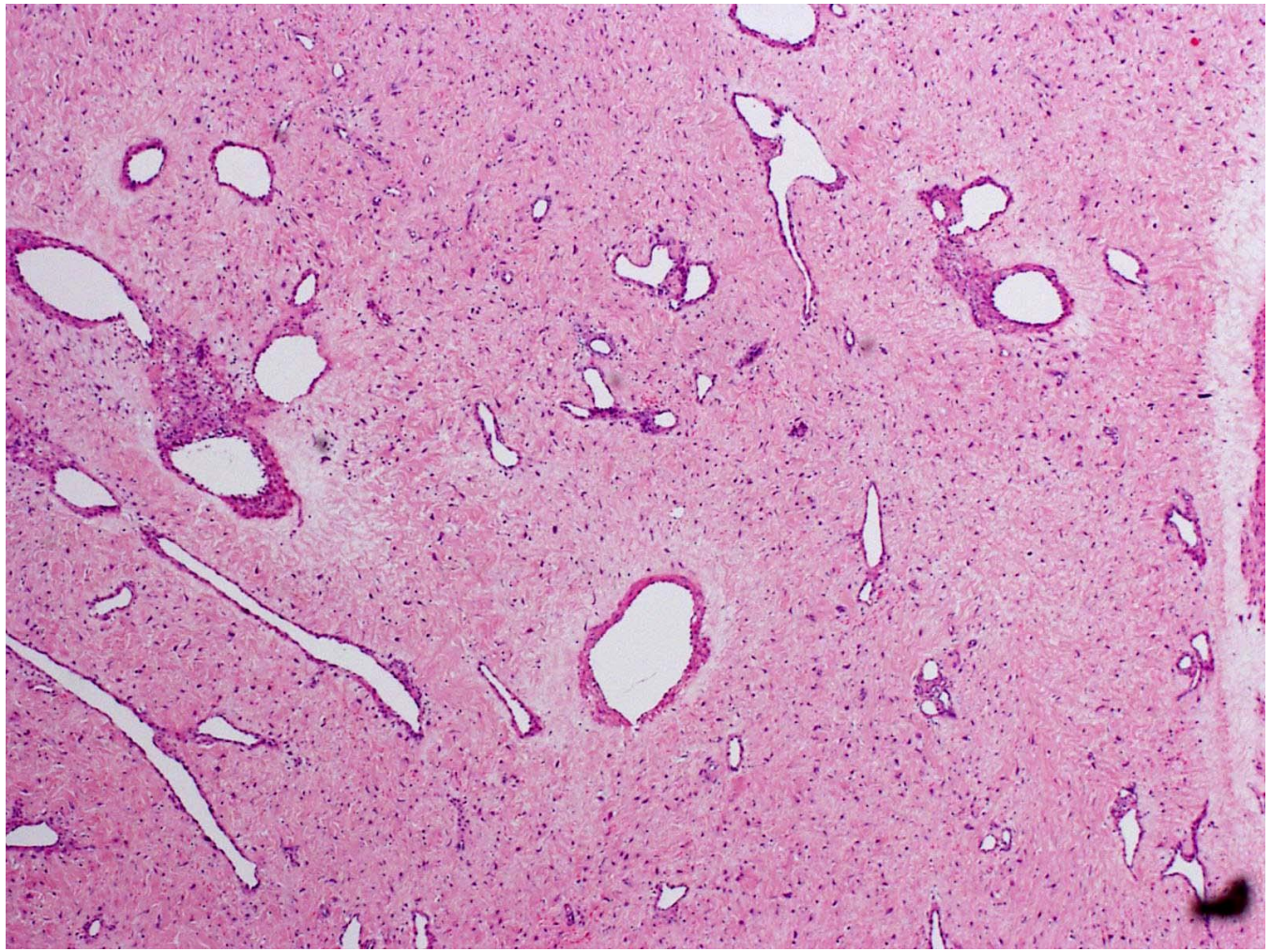
- Non keratinizing squamous cell carcinoma
- Keratinising squamous cell carcinoma
- Basaloid squamous cell carcinoma

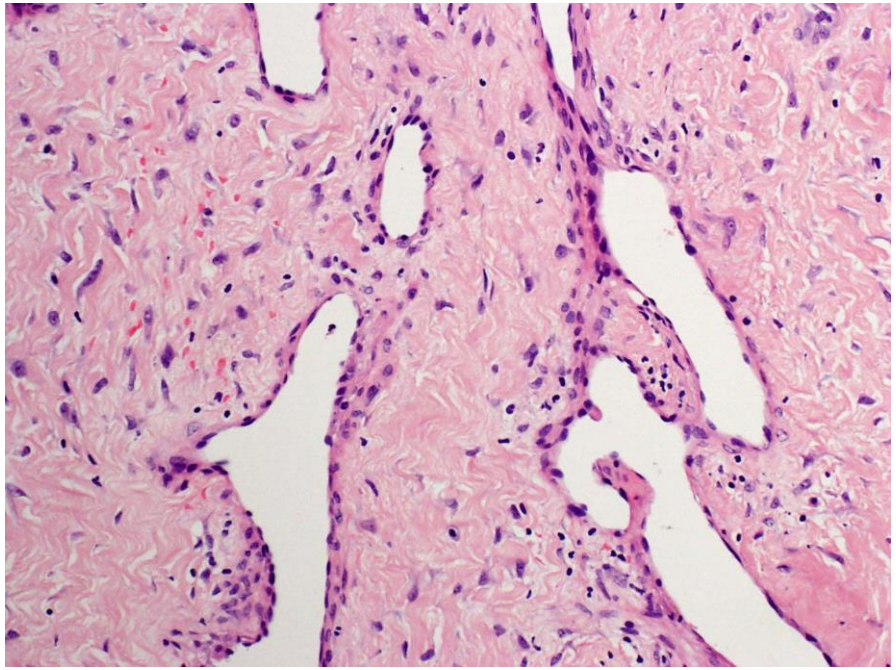
Nasopharyngeal papillary adenocarcinoma

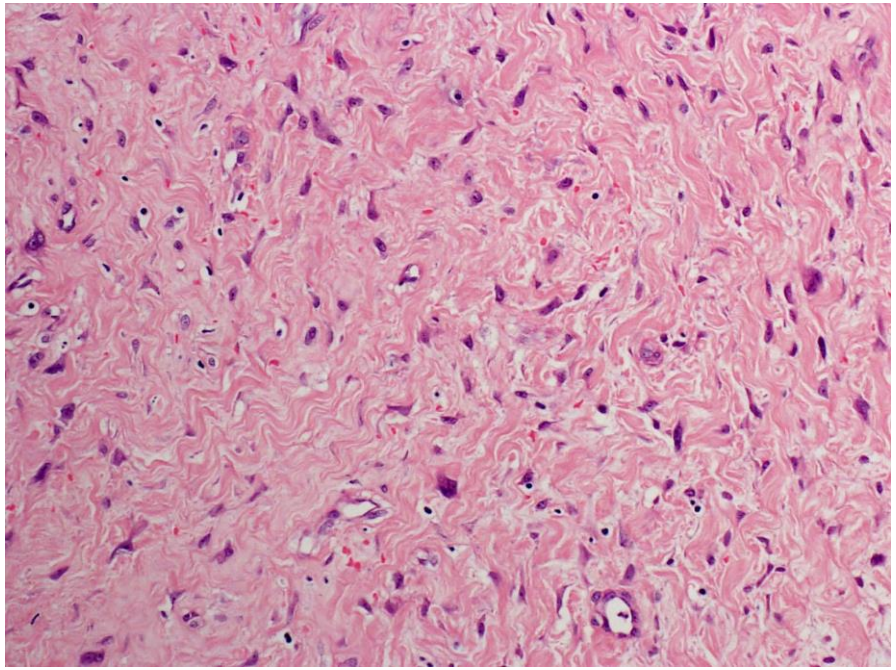
Aetiology	Clinical features	Histology	EBV testing methods	Management
Race, genetic, environment, EBV ***Diet: preserved (salted & fermented food with high nitrosamines (high intake in first decade)***	Wide age range (peak in 3rd & 5th decade) ***Can be seen in children*** M:F ratio 2/3:1 ***Unique geographic & ethnic distribution (Chinese, also in North Africans, Alaskan Eskimos & Indians)***	Spindle to ovoid cells with vesicular nuclei, in syncytial pattern. Intermingled with lymphocytes, occasionally abundant eosinophils or granuloma. Amyloid in some.	**EBER (Epstein Barr virus encoded RNA**	***Radiotherapy*** +/- Chemotherapy
Smoking tobacco & alcolhol in keratinising type	***May present with asymptomatic neck mass (posterior triangle or upper jugular),*** ***Uni or bilateral*** Cranial nerve palsies	+ve for AE1/AE3, CK5/6, CK8, CK19, p63. -ve CK7, CK20, +EBER (in non keratinising ca)	EBV LMP may be negative.	Prognosis dependant on stage
Wood dust, formaldehyde, chemical fumes	<5% with distant metastasis at diagnosis. Distant met to bone, lungs, liver, LN's below clavicle in 20-60%.	**DD: Lymphoma, sarcoma, melanoma**		
High risk oncogenic HPV (a small proportion of cases)				

Case 3. 14 yr male
Large mass in the post nasal space

Histology





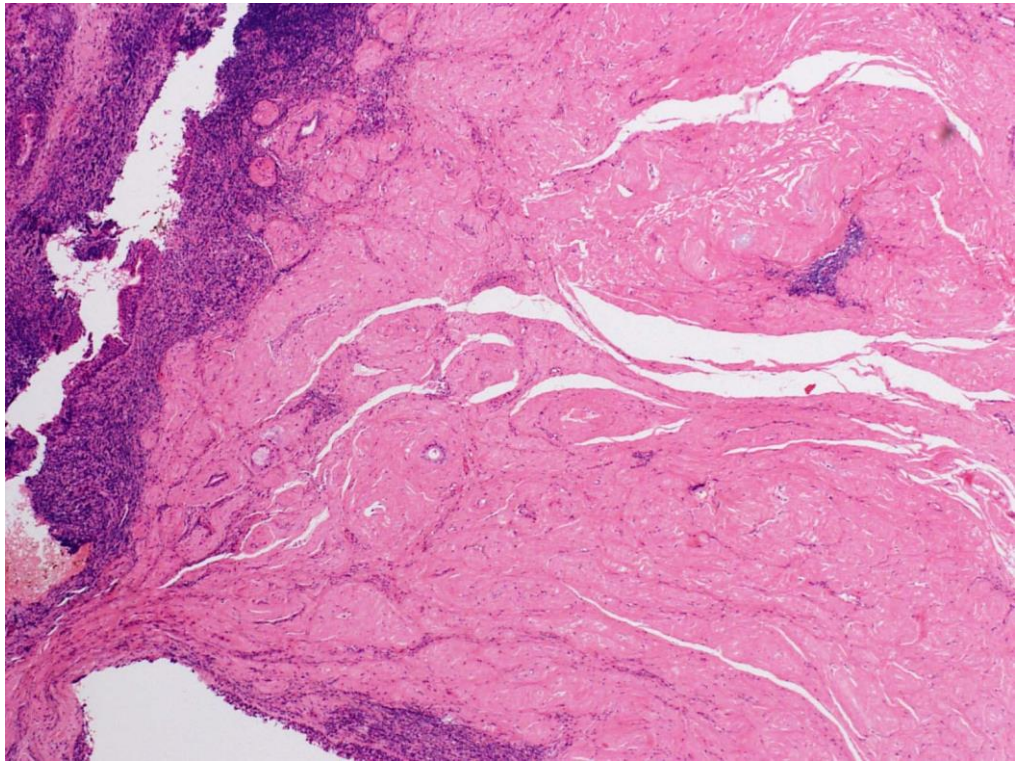


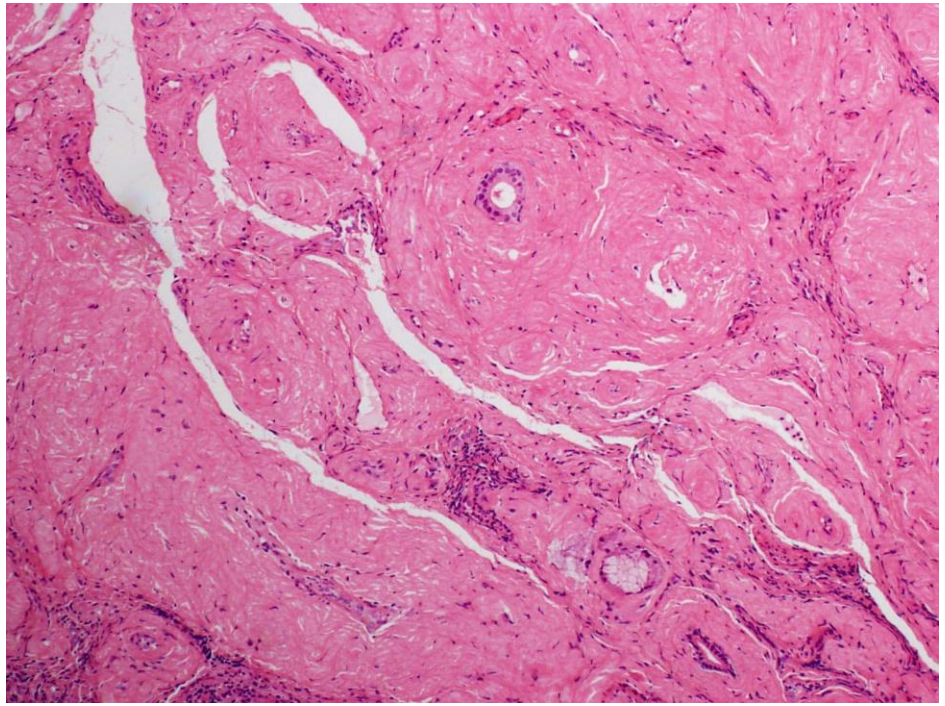
Diagnosis: Nasopharyngeal Angiofibroma

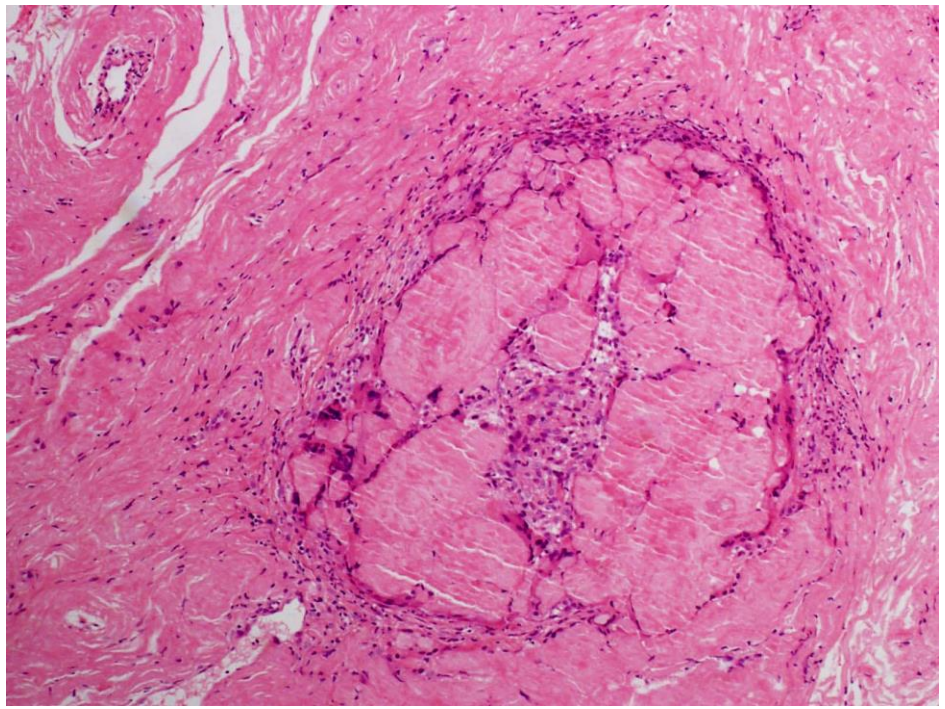
- ***Origin from erectile-like fibrovascular tissue in the posterior-lateral roof of nose & nasopharynx***
- ***Almost exclusively in adolescent males (10-25yrs), growth during puberty***
- Mass, obstruction, epistaxis, proptosis, diplopia, head ache, pain
- ***Extension into orbit & cranial cavity***
- ***Benign but highly vascular***
- May recur following incomplete excision.
- Circumscribed, stellate to spindle cells with vesicular nuclei in loose to fibrous stroma, with scattered vascular spaces (capillary sized, staghorn, thick-walled, thin-walled & patulous)
- CD117 +, AR+
- **DD: Inflammatory polyp, Haemangioma, Solitary fibrous tumour, Antrochoanal polyp**
- ***Pre-op embolization & excision***

Case 4. 46 yr female
Right post nasal space swelling

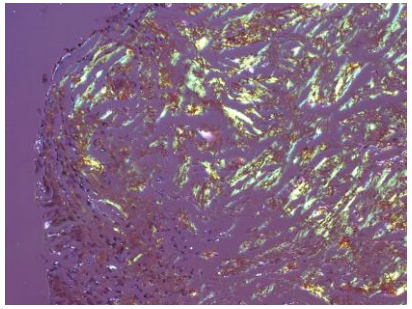
Histology

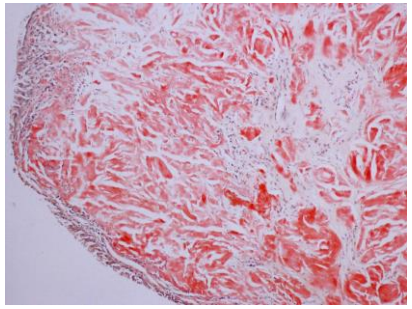






Congo red



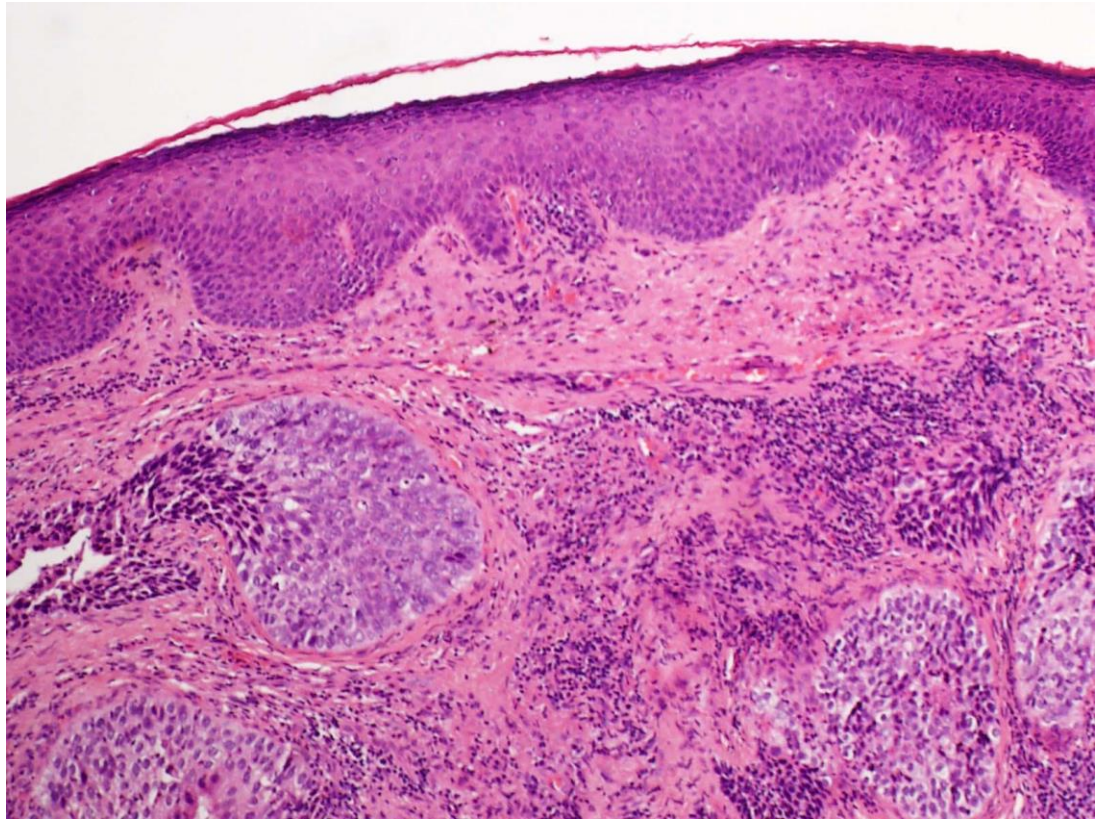


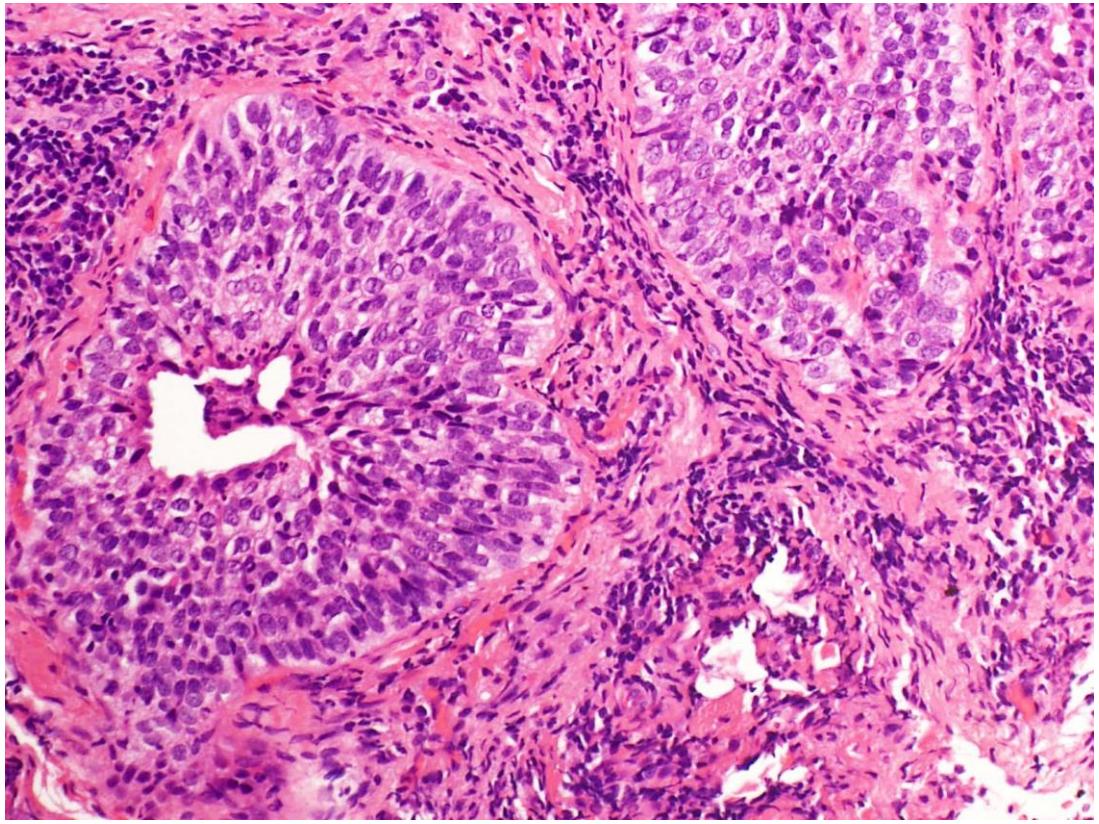
Head and Neck Amyloidosis

- Systemic or localized
- Most common H&N site for systemic is tongue and for localized is larynx (false cord).
- In blood vessel walls, around glands which become atrophic. Foreign body type giant cell reaction.
- Macroglossia, hoarseness
- **Test for light chain restriction.** Plasma cells do not form sheets and are bland. Light chain restriction may be present and if + indicates a localized type of plasma cell dyscrasia.
- Typing for clinical management.
- Treatment: Surgery; may recur

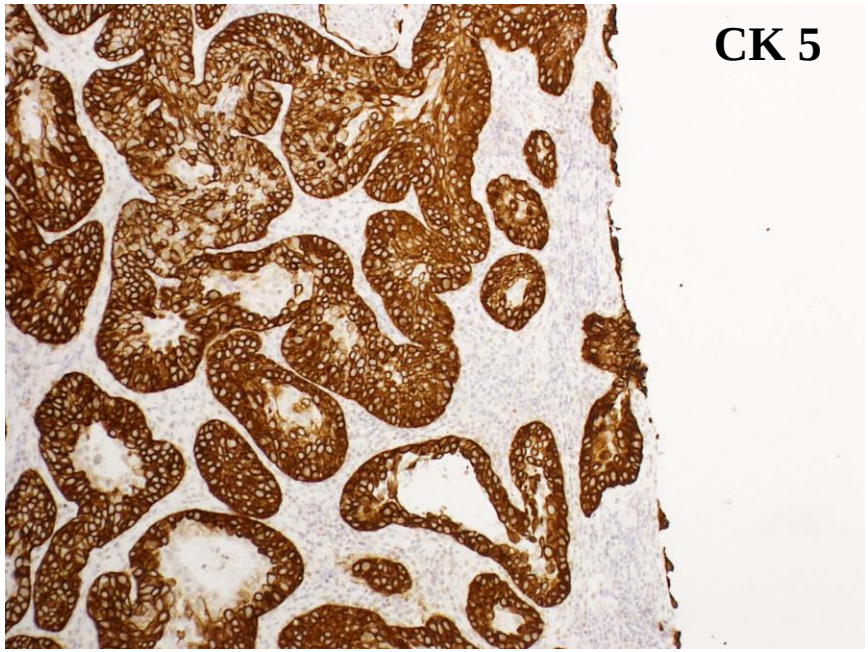
Case 5. 74 yr male
Right nasal cavity ulcer and swelling.

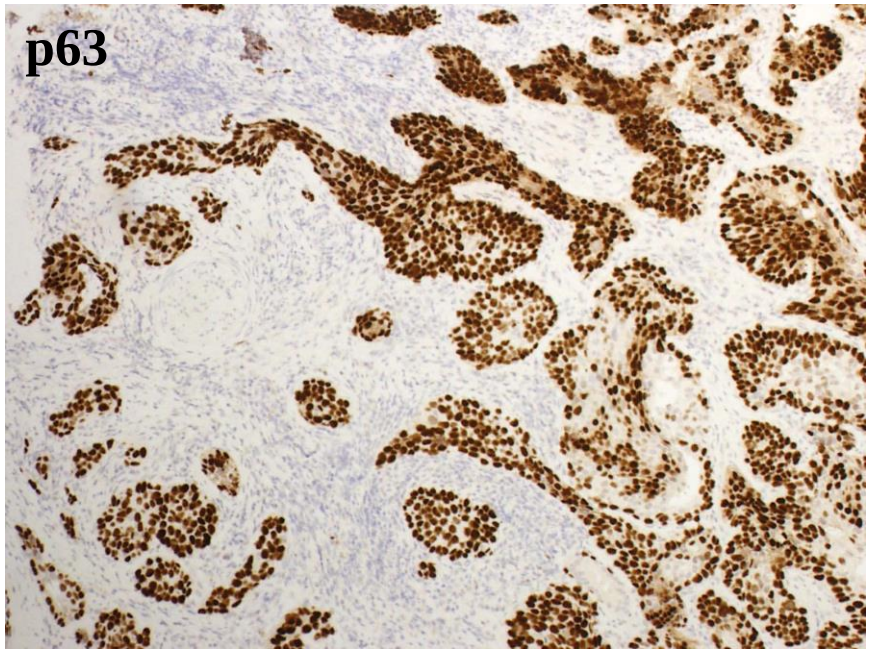
Histology

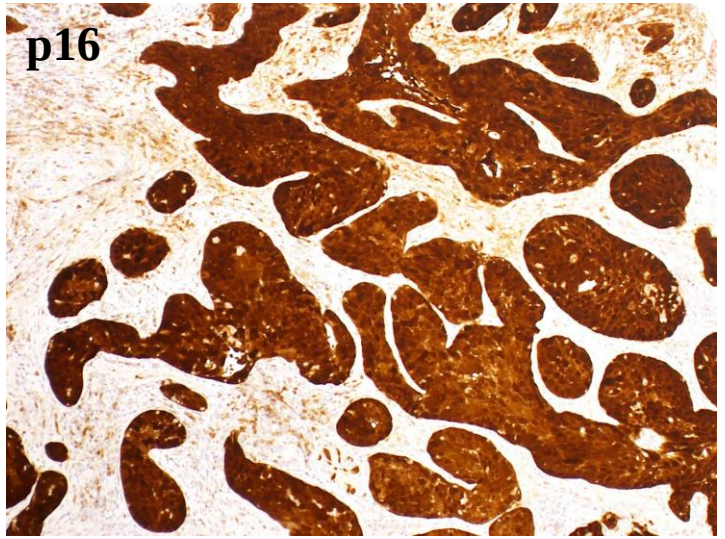


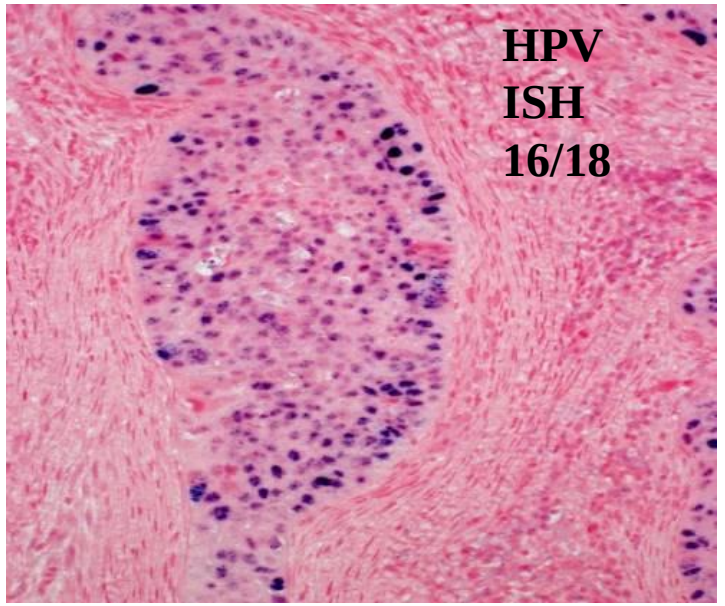


Immunohistochemistry









Diagnosis: Non keratinising squamous cell carcinoma (transitional cell, cylindrical cell ca)

30-35% have transcriptionally active high-risk HPV

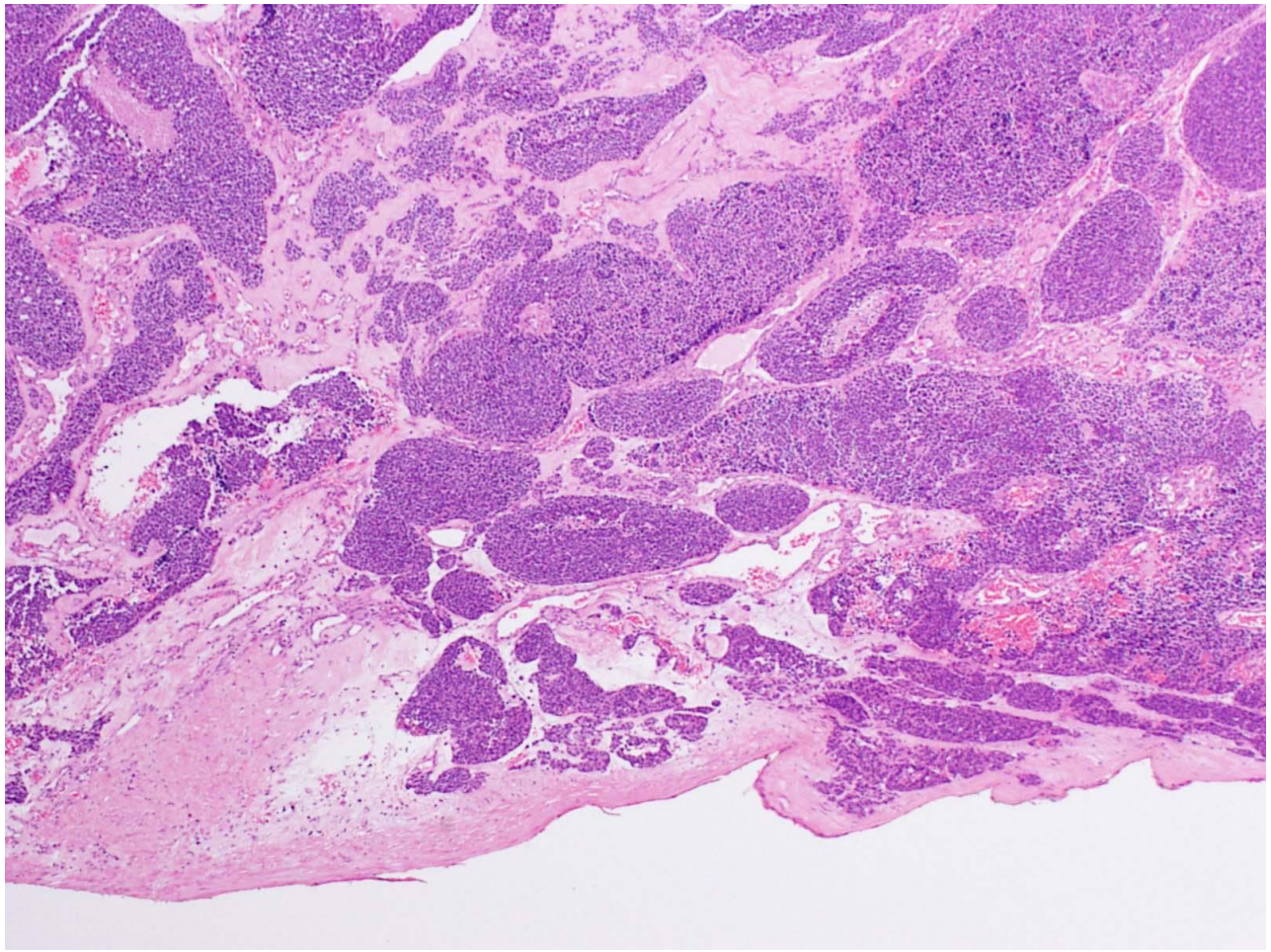
Histology: Undulating mucosal surface and inverted growth
Rounded nests / ribbons of cells with high nuclear to cytoplasmic ratio (blue cell appearance)
Minimal squamous maturation
Central necrosis, increased mitosis & apoptosis
No significant stromal desmoplasia around the ribbons of epithelium (mimic non invasive growth)
Should be managed as invasive tumours)

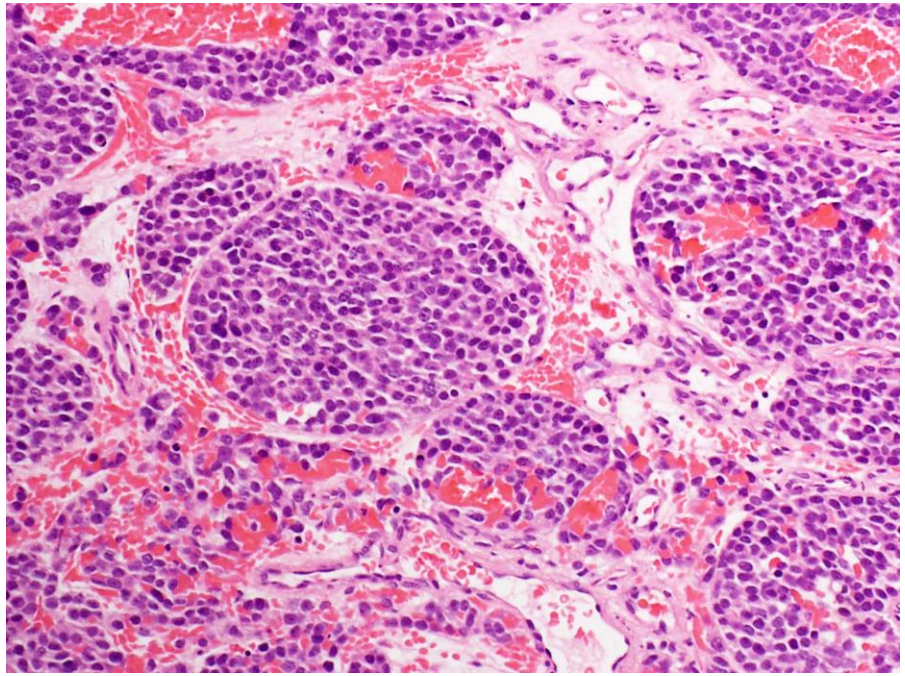
Immunohistochemistry: ***CK5+, p63+, p40+, p16+***
Negative for neuroendocrine markers

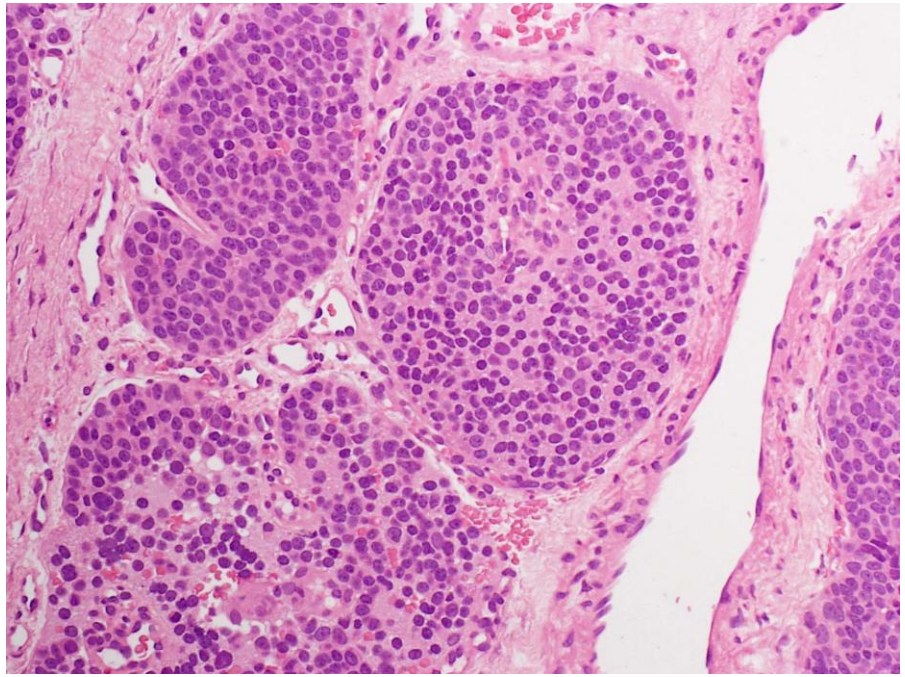
DD: Sinonasal inverted papilloma, Sinonasal undifferentiated carcinoma, Neuroendocrine carcinoma

Case 6. 62 yr female
Left nasal cavity mass

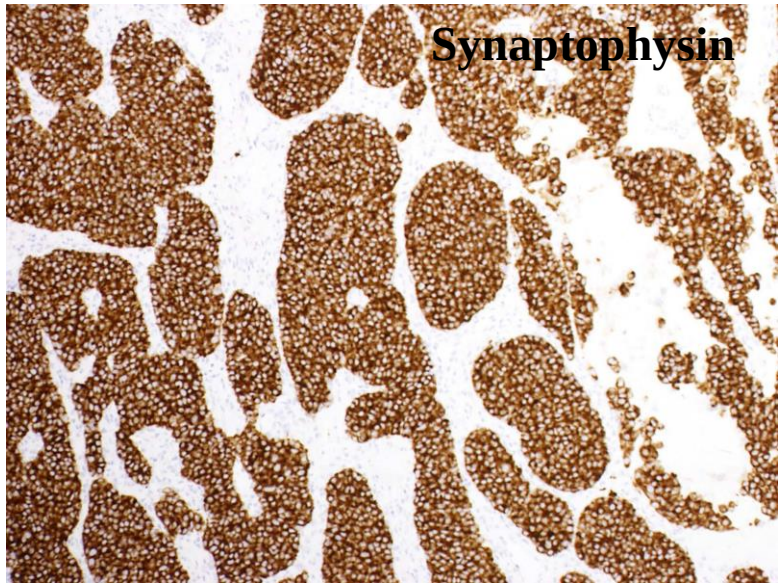
Histology

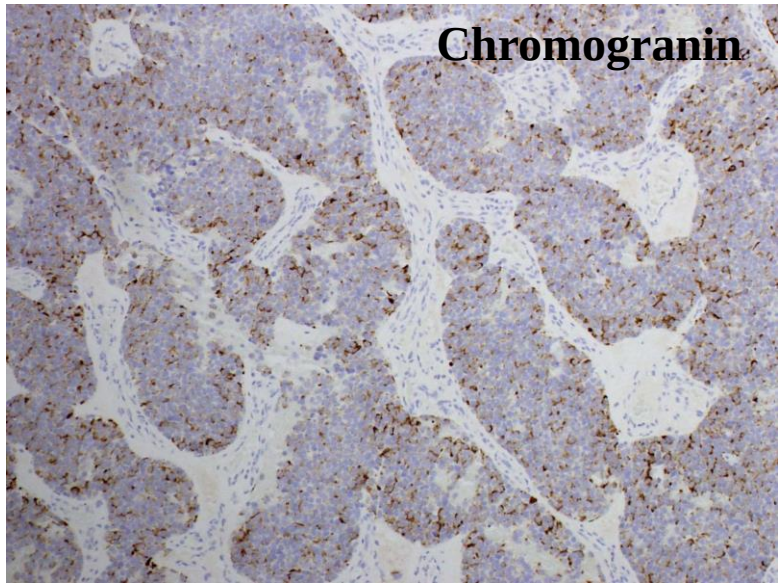


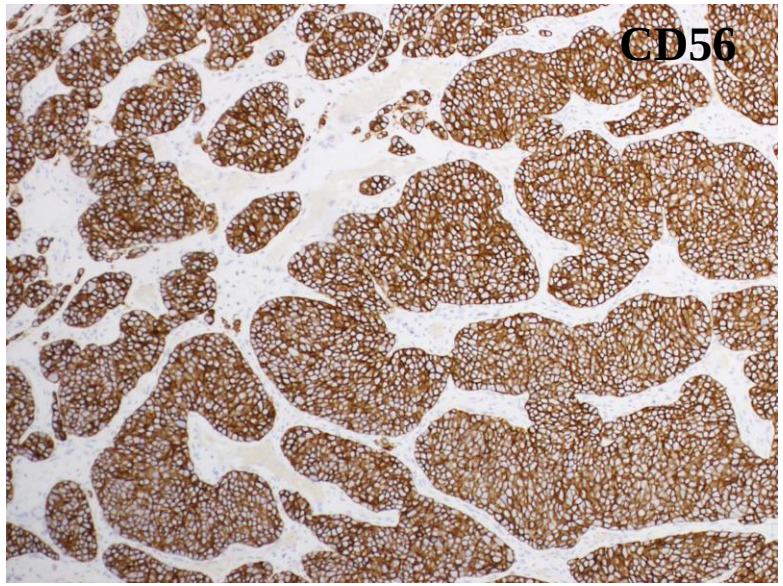


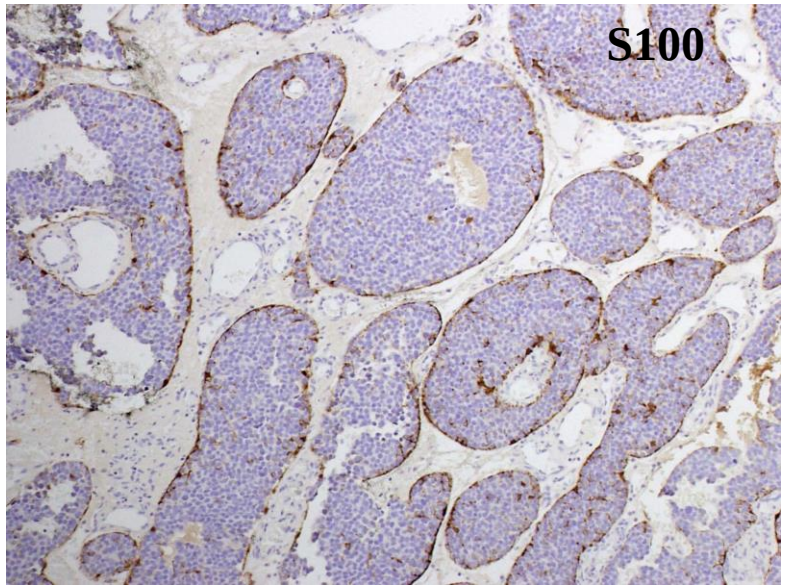


Immunohistochemistry







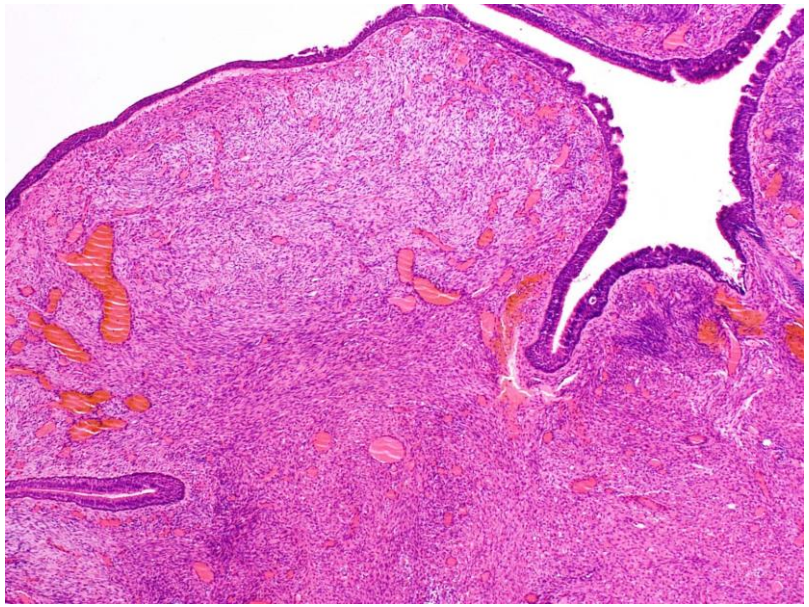
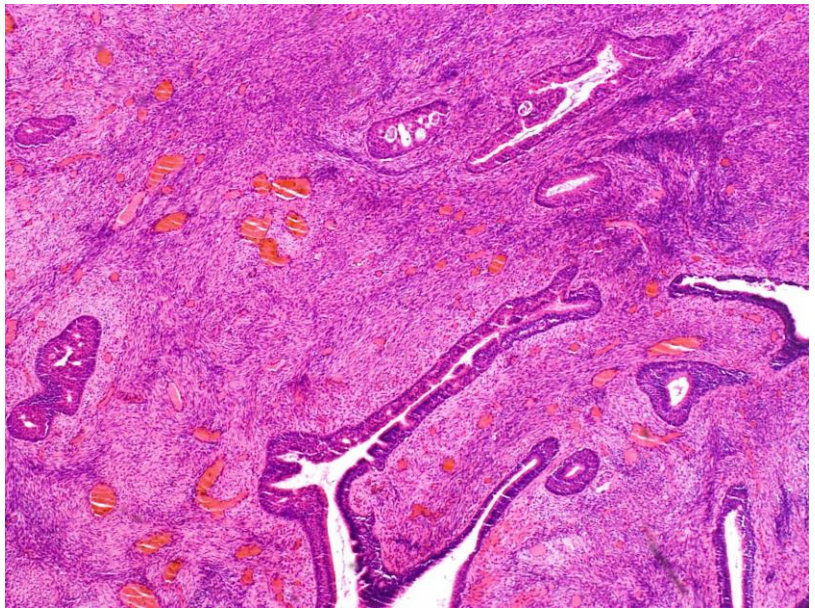
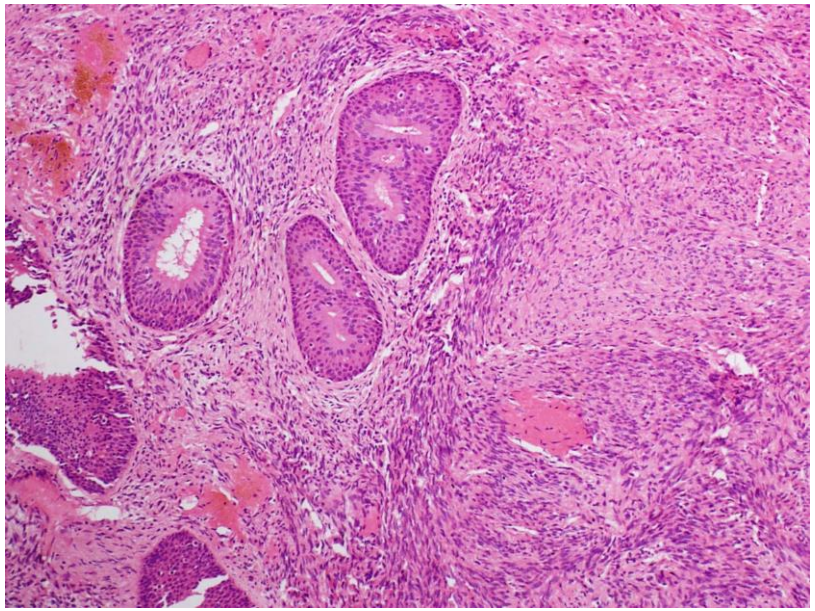
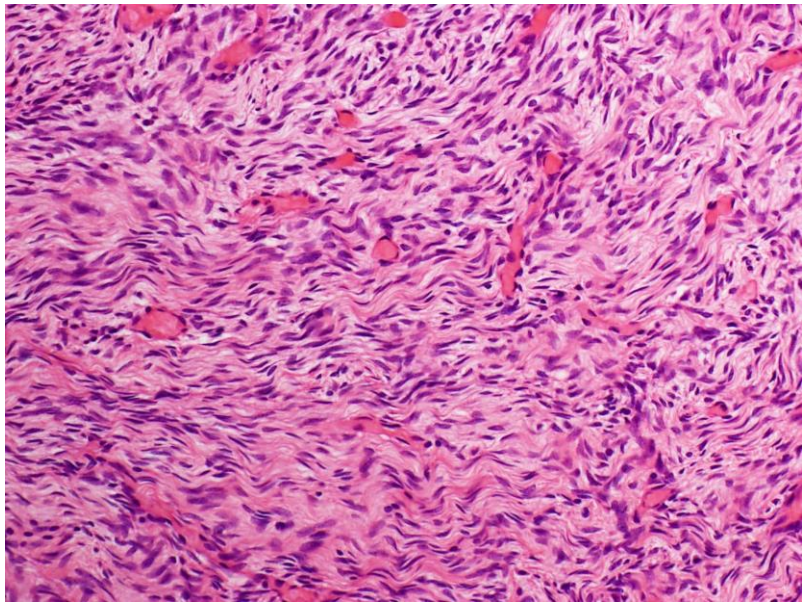
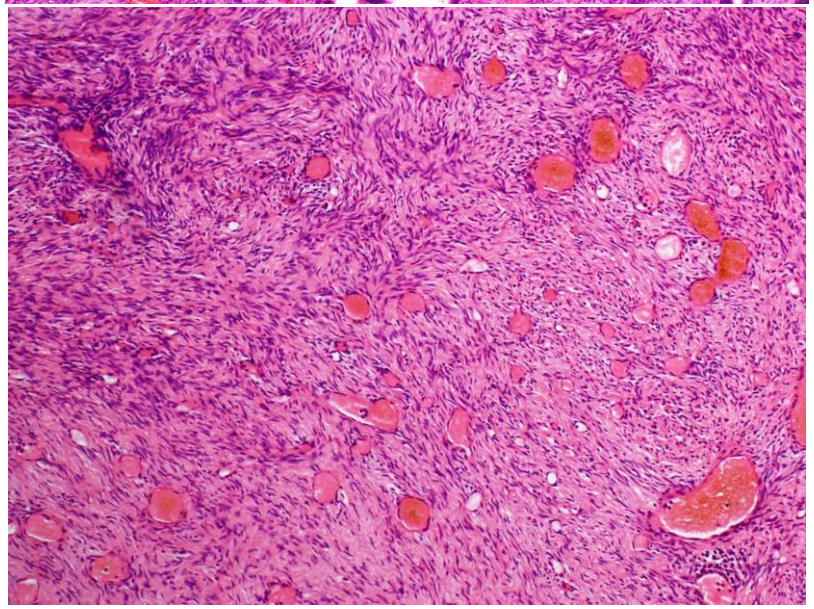
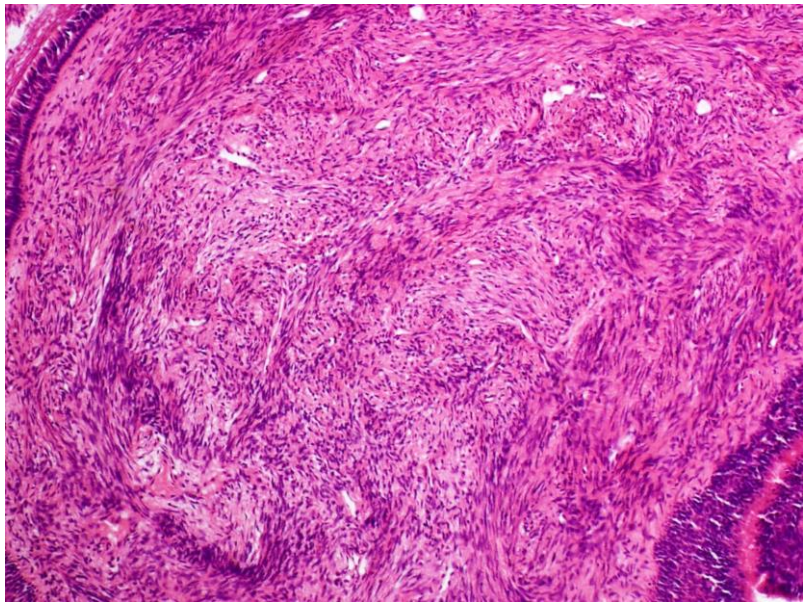


Diagnosis: Olfactory neuroblastoma (Esthesioneuroblastoma)

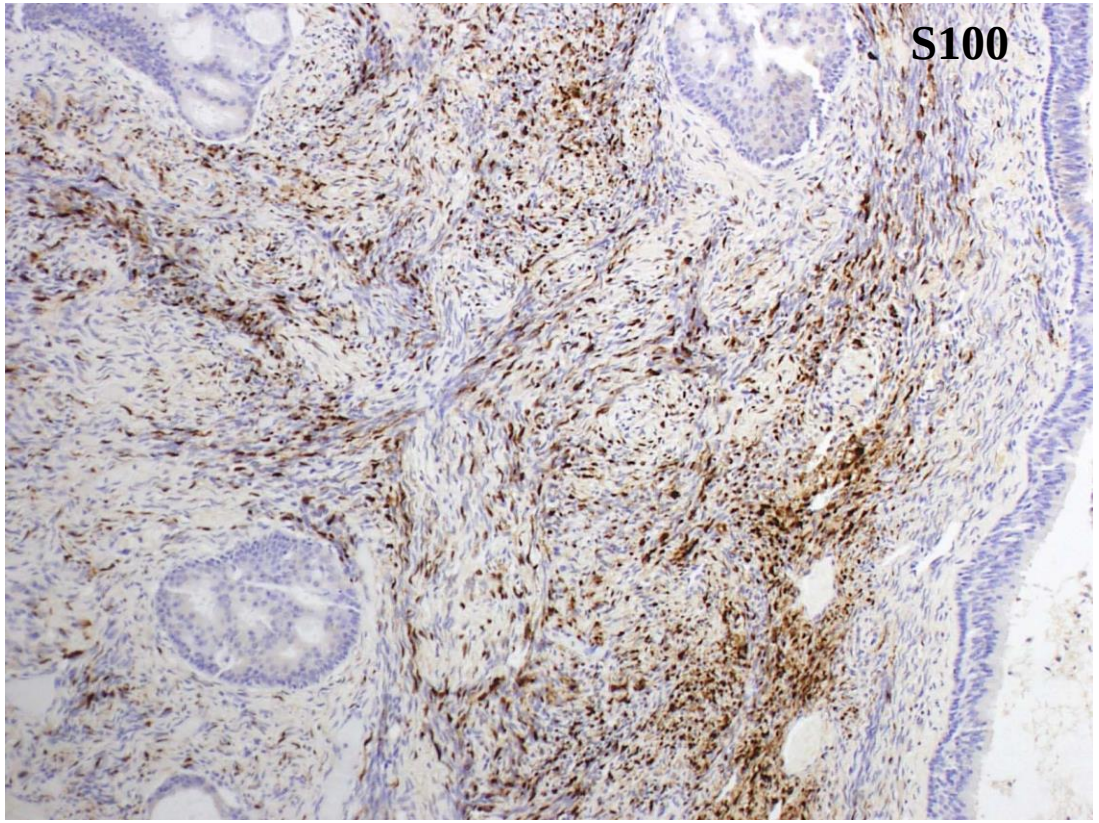
Origin & location	Clinical features	Histology	DD	Rx
Olfactory neuroepithelium roof of nasal cavity to superior turbinate on lateral wall and mid portion of nasal septum.	Ages 4 to 73yrs (mean 40yrs); rare below 10yrs.	Irregular, discrete lobules & nests or sheets of small round cells in loose vascular or delicate neurofibrillary stroma. Uniform punctate to fine chromatin, sparse cytoplasm, nucleoli inconspicuous in low grade.	**SNUC** **NEC** **Pituitary adenoma**	Endosc resecti RT
Unilateral, high in nasal cavity, can involve ethmoid, orbit, anterior cranial fossa, paranasal sinuses.	**Lymph node metastasis in 6-10% at presentation**	**Homer-Wright pseudo rosettes** **Flexner-Wintersteiner true rosettes** Mitosis Necrosis, calcification, lymphovascular invasion **Hyam's grade I-IV**	**ES/PNET,** **Rhabdomyo-sarcoma,**	
	Clinical staging: Kadish & Morita A (nasal cavity) B (nasal & paranasal sinuses), C (extends beyond) D (regional / distant metastasis)	**IHC: Synaptophysin+, Chromogranin+, CD56+, NSE+, Calretinin+, S100 +(sustentacular)** occasional BerEP4 & Cam5.2+ (usually AE1/AE3-) , CD99-, EWS/FLI1 fusion transcript -	**Lymphoma** **Plasmacytoma**	

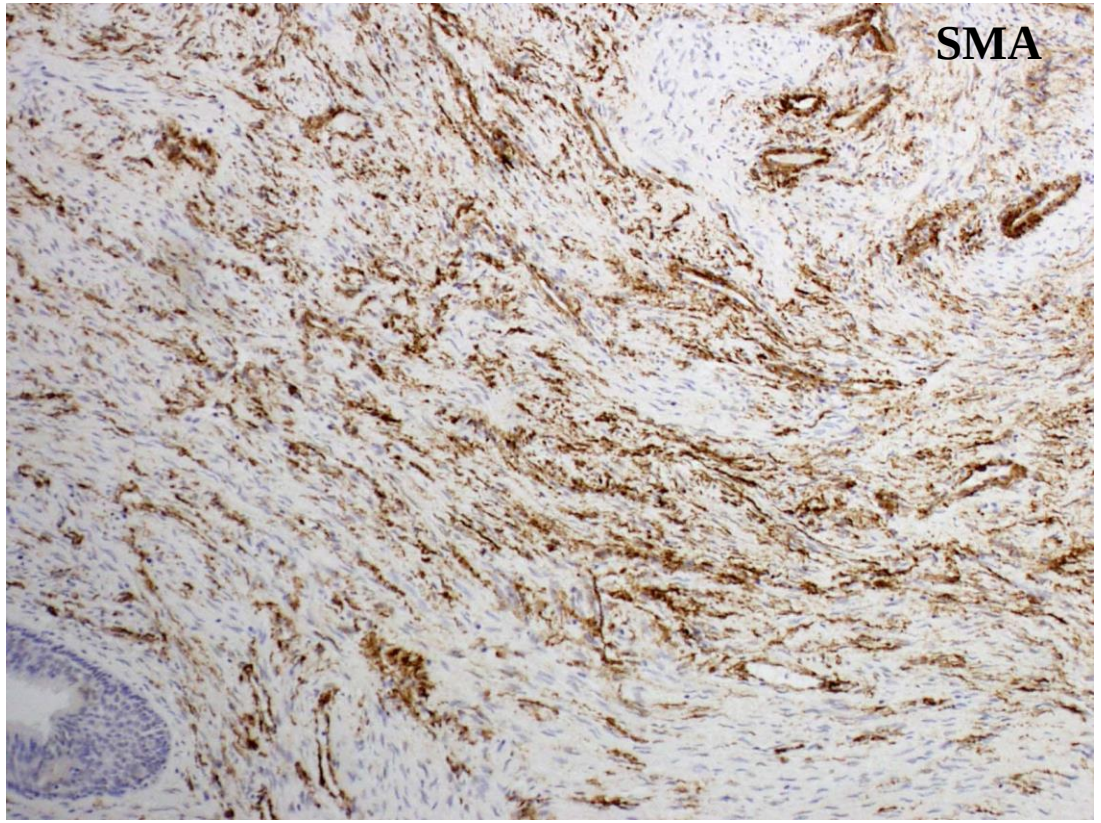
Case 7. 64 yr female
Left nasal tumour

Histology

Immunohistochemistry





Diagnosis: Biphenotypic sinonasal sarcoma

- ***Low grade sarcoma with neural and myogenic differentiation***
- Clinical: Exclusively in sinonasal tract; superior part of nasal cavity, ethmoid
  M:F ratio 1:3
- Histology: ***Spindle cell proliferation, ill-defined fascicles, prominent staghorn vessels in areas***
  Cell nuclei are elongated, uniform and hypochromatic
  Infiltrative, Low mitotic rate; No necrosis
- ***IHC: +ve for S100 (patchy) + SMA, + calponin, + nuclear beta catenin, +factor XIIIa***
- ***-ve SOX10***
- ***Molecular genetics: PAX3 gene rearranged***
  t(2;4) translocation: PAX3-MAML3 fusion protein

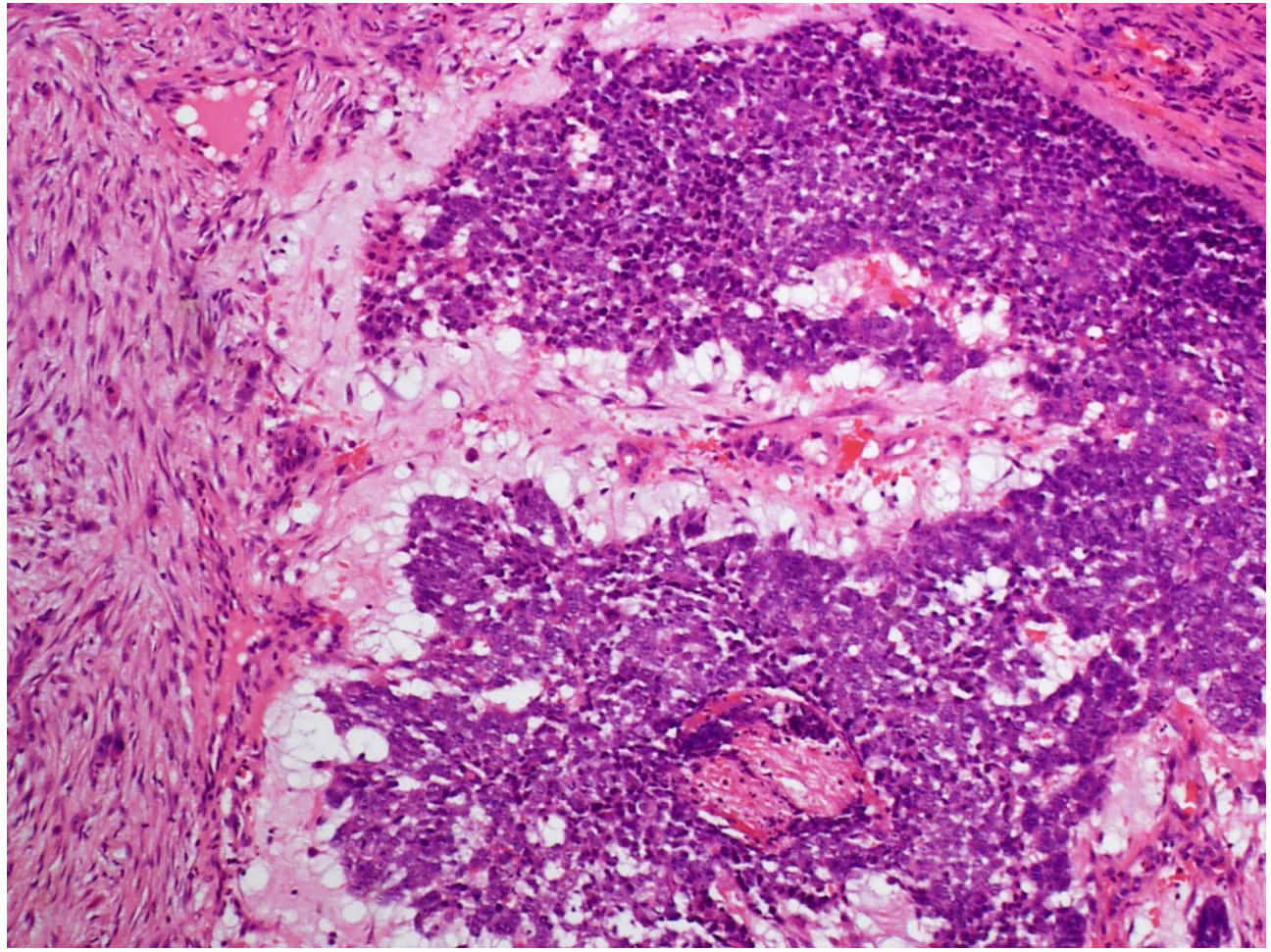
Also Pax3-NCOA1, PAX3-FOXO1

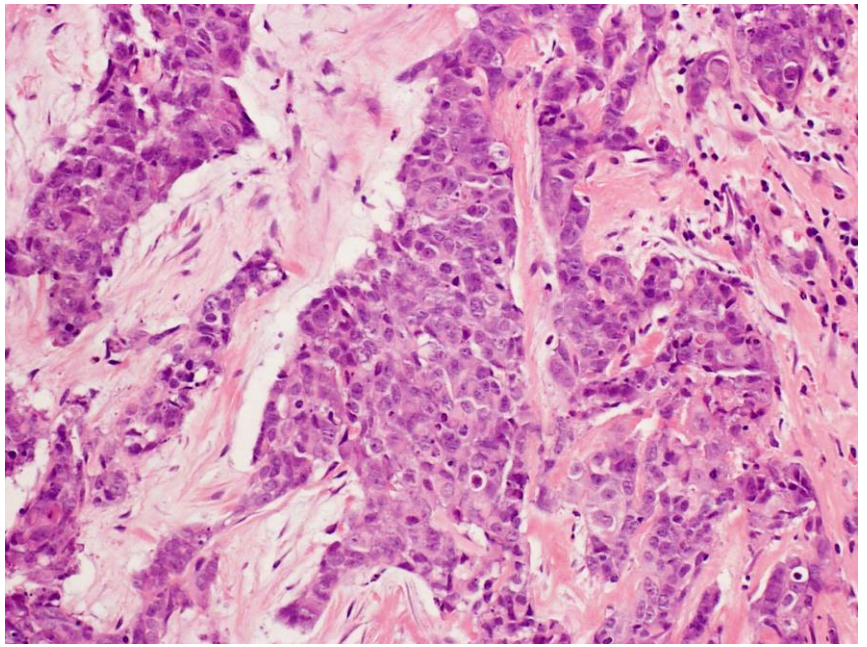
DD: Benign & malignant nerve sheath tumour, Synovial sarcoma, Glomangiopericytoma, Solitary fibrous tumour

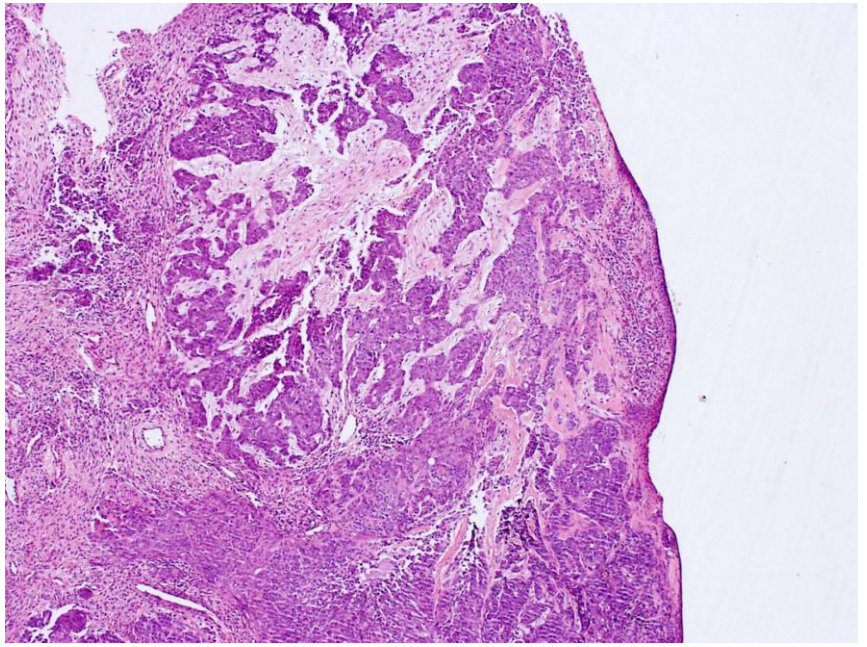
- Prognosis: Slow progressive growth; local recurrence; no metastasis

Case 8. 47 yr male
Right ethmoid sinus tumour

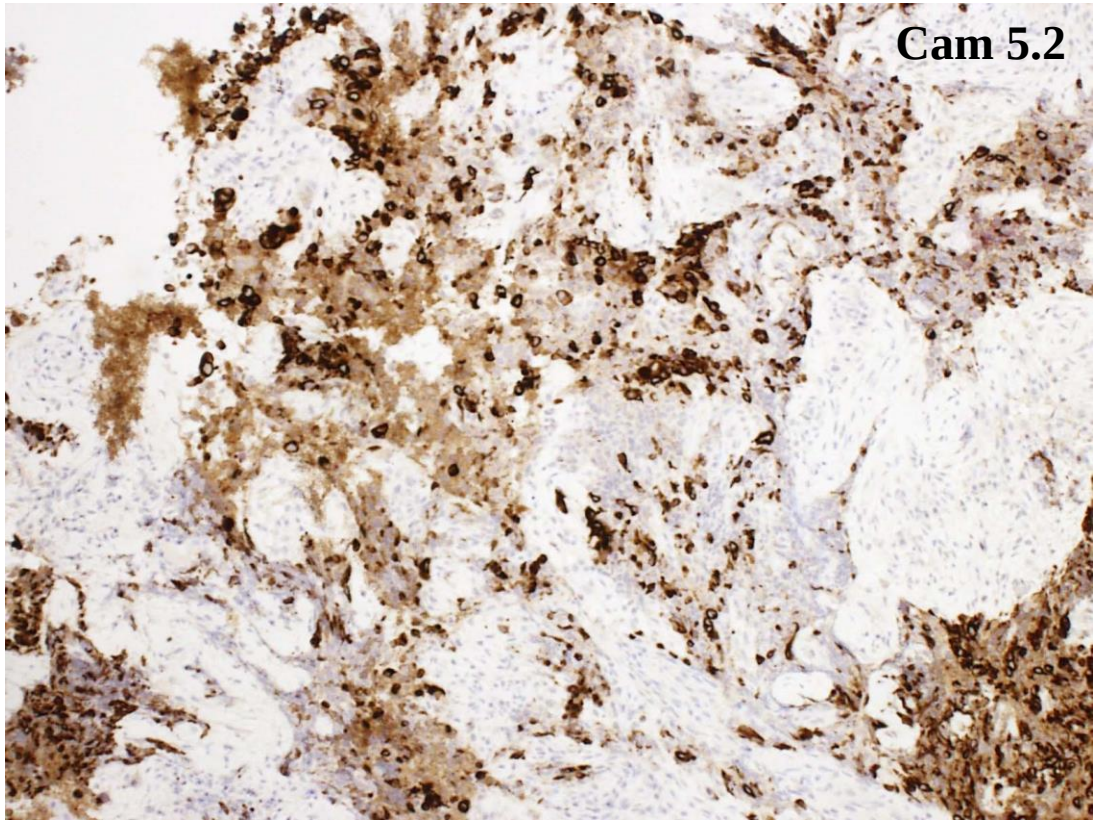
Histology

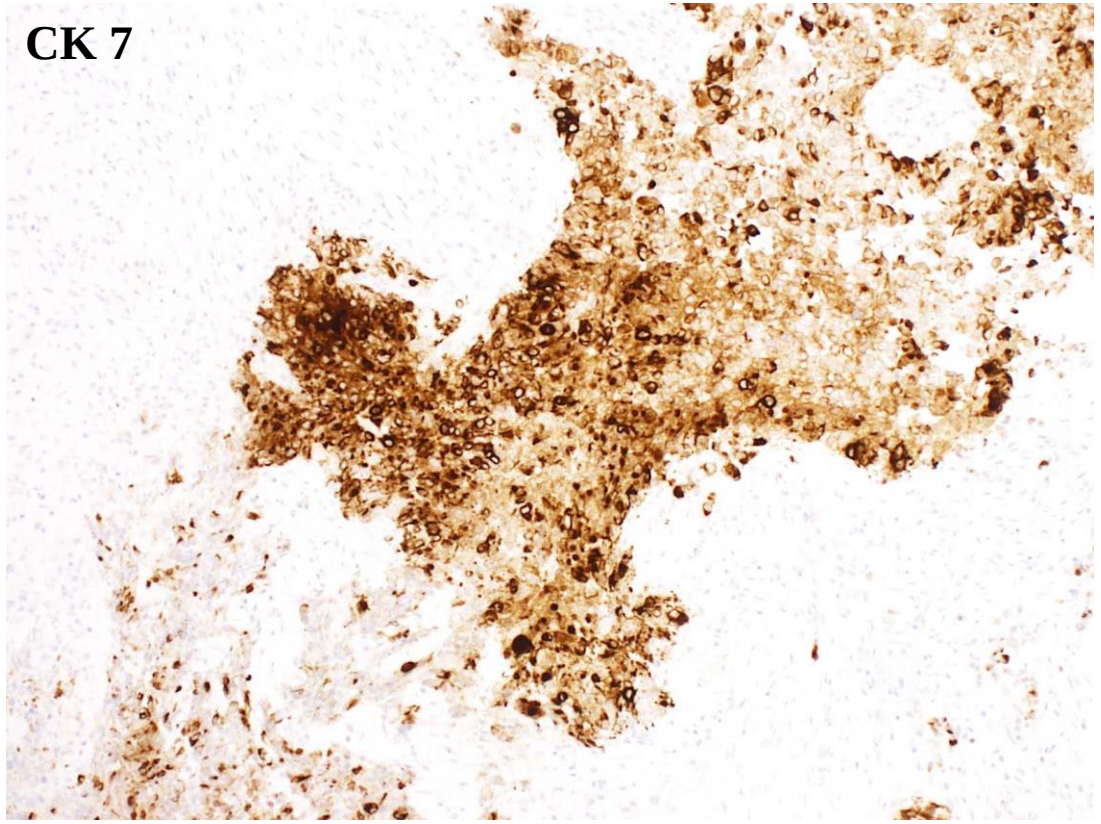






Immunohistochemistry





Histology

Clinical features: Older age
Ethmoid
Aggressive, poor survival

Histology: Sheets, nests, ribbons of small to medium cells
No squamous / glandular diffn.

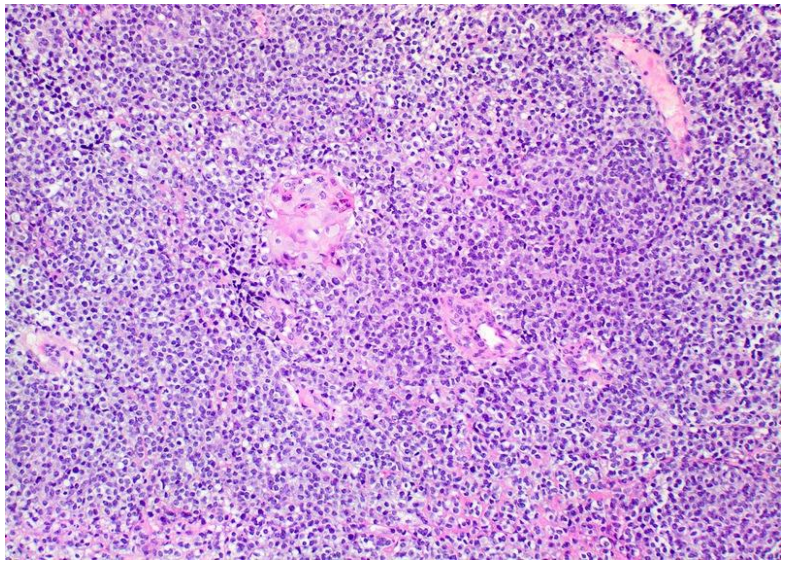
IHC: Low molecular wt cytokeratin +
-ve for CK5/6, P63, P40, S100, synaptophysin

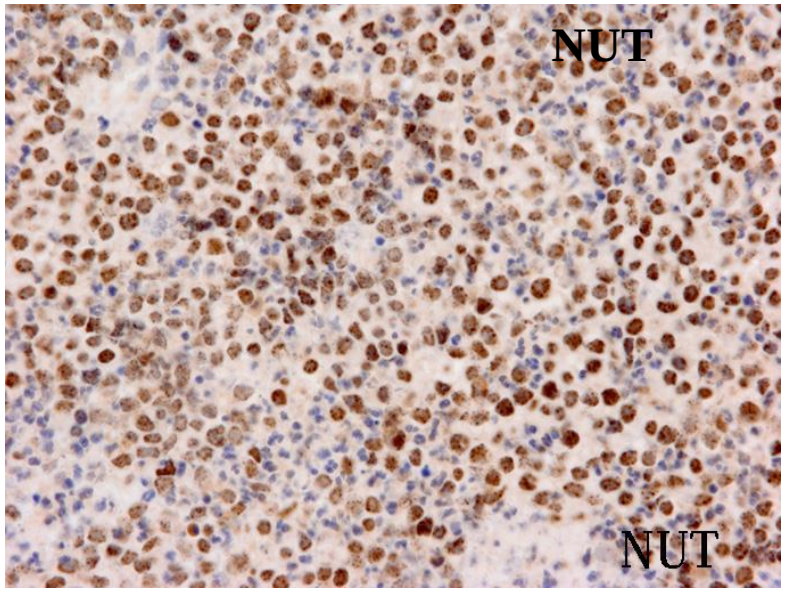
DD for undifferentiated carcinoma

- ***Lymphoepithelial carcinoma (EBER+ in most)***
- Neuroendocrine ca
- Basaloid SCC
- Solid Adenoid cystic ca (MYB-NFIB)
- ***Multiphenotypic sinonasal carcinoma (ACC-like HPV+ ca)***
- ***NUT midline ca (NUT-BRD4/ BRD3)***
- **SMARC B1 (INI1) -ve ca**
- Metastatic carcinoma
- Sino nasal undifferentiated carcinoma (SNUC).

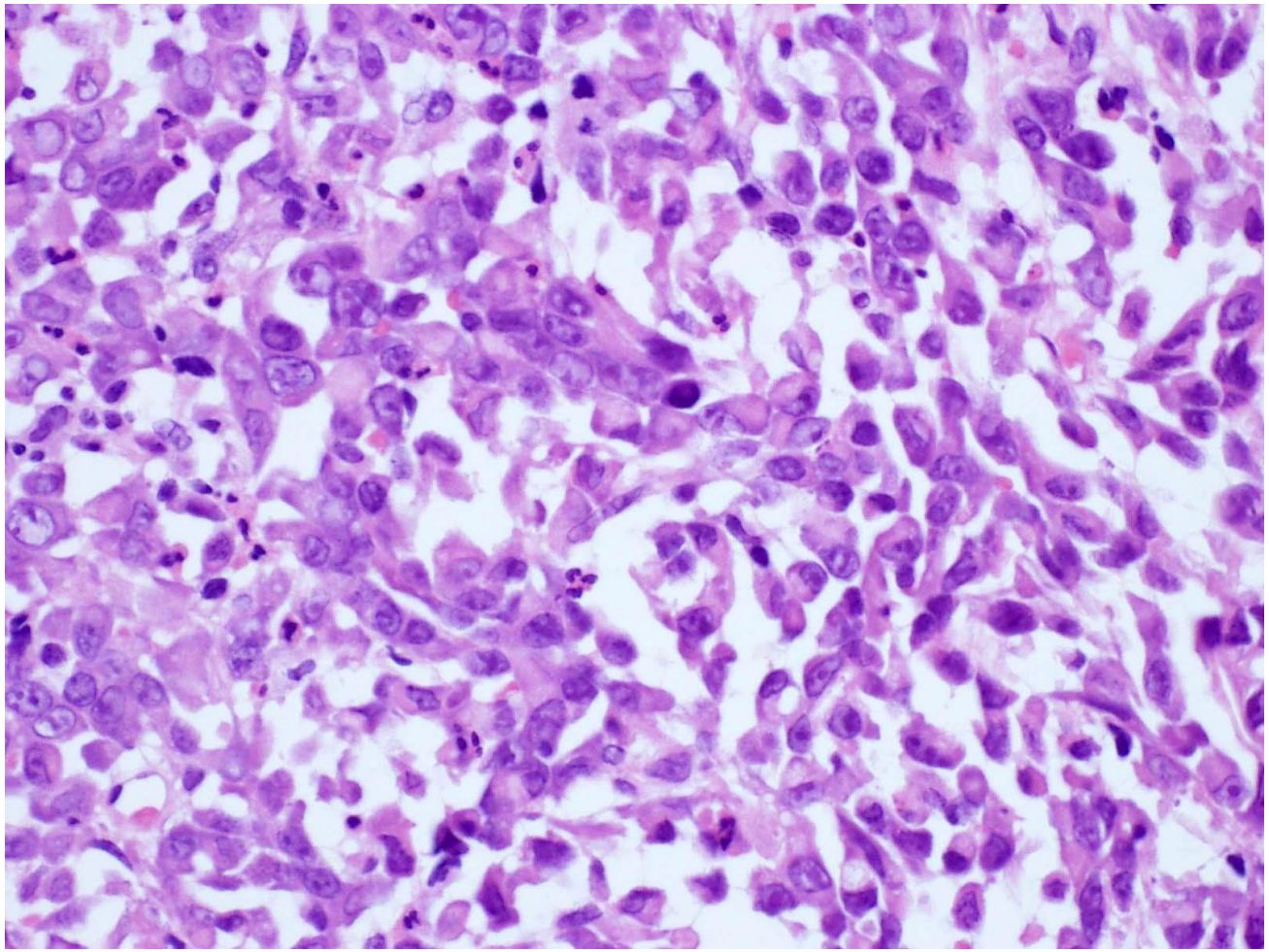
New carcinomas to be considered in DD of SNUC

NUT MID LINE CARCINOMA



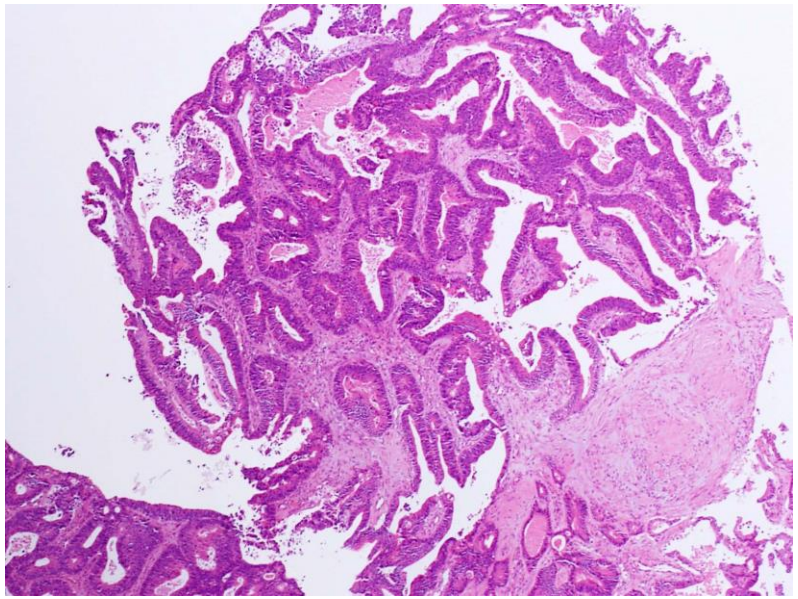


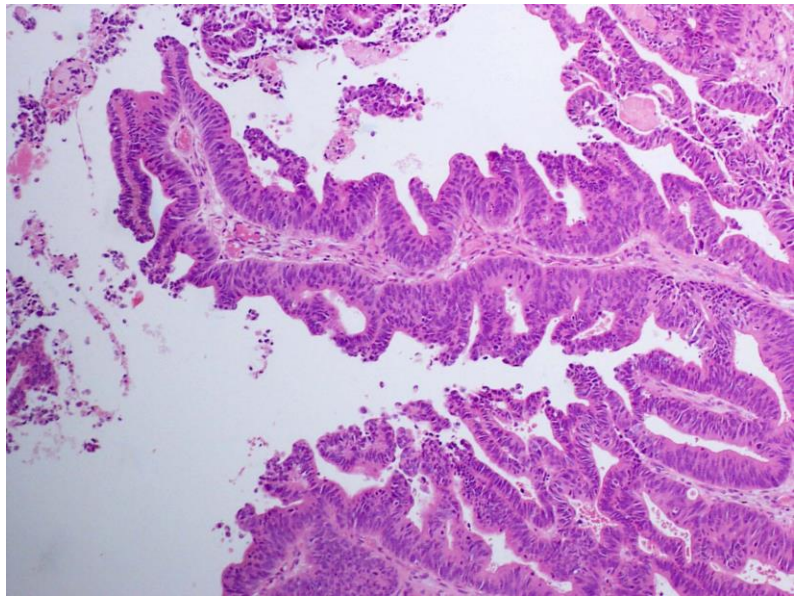
SMARC B1 -ve carcinoma

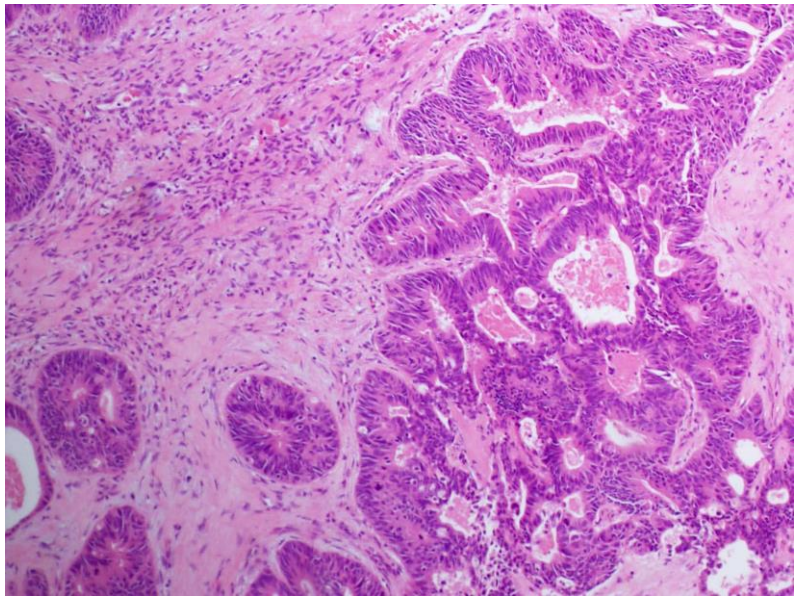


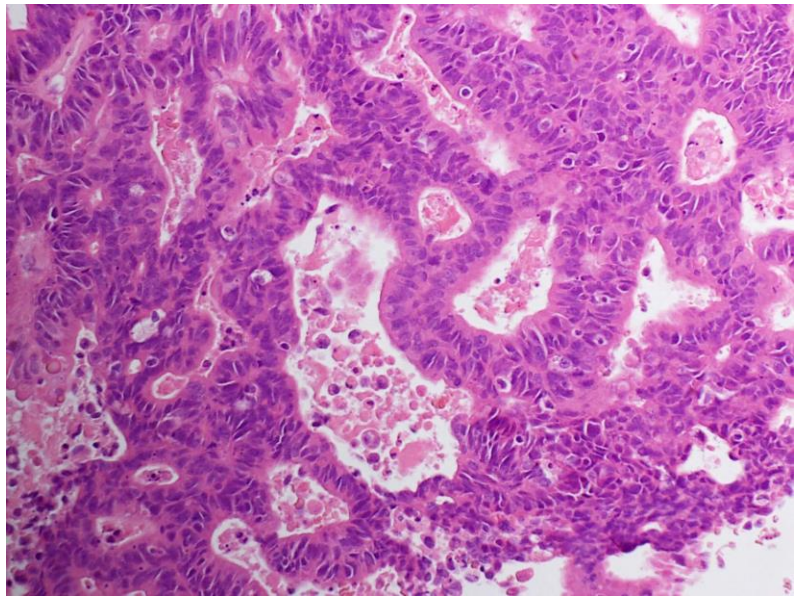
Case 9. 83 yr male
Left ethmoid sinus tumour

Histology

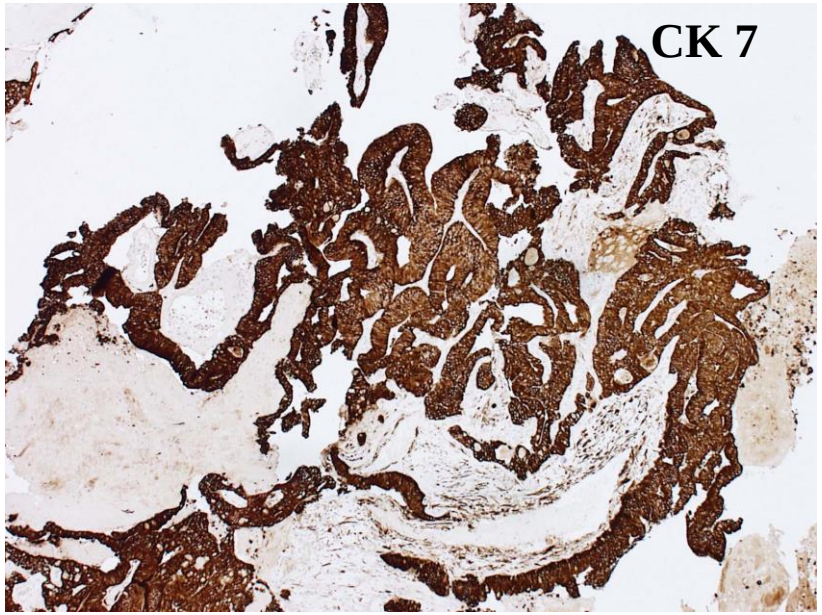


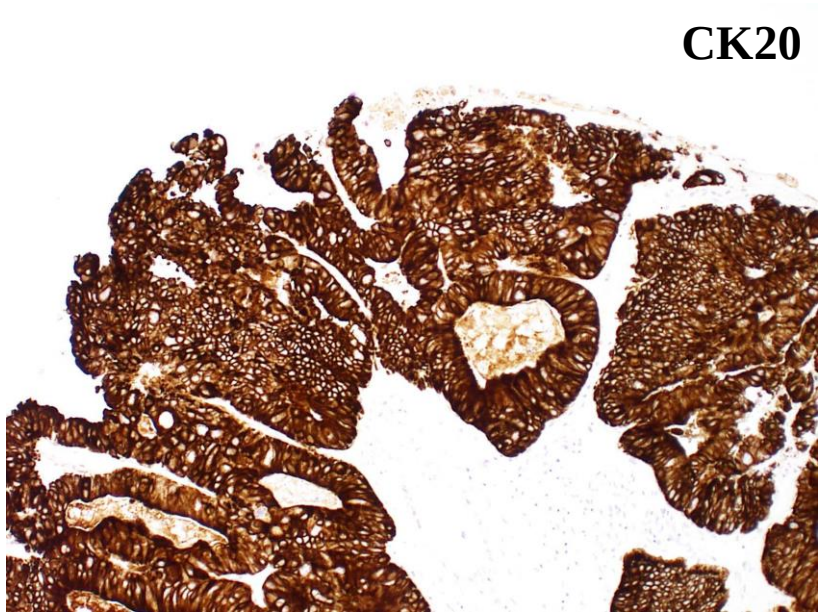


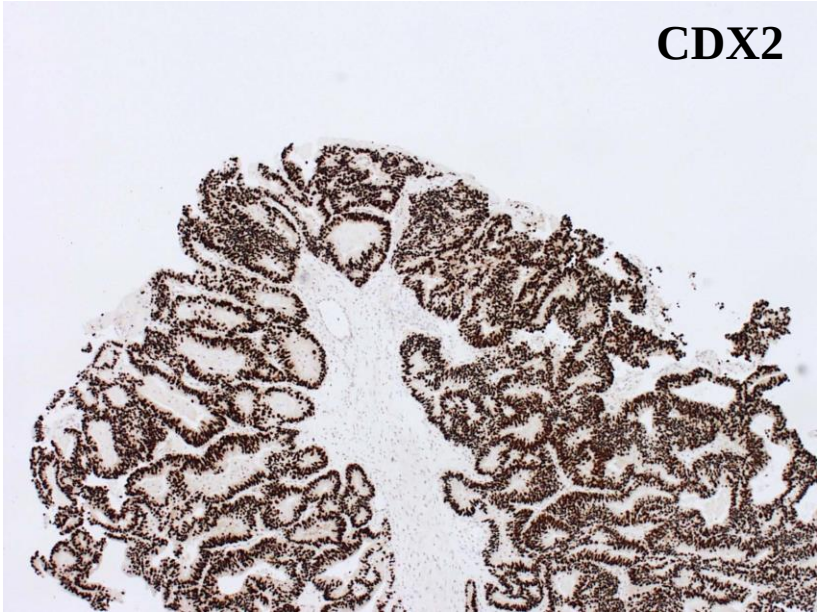




Immunohistochemistry







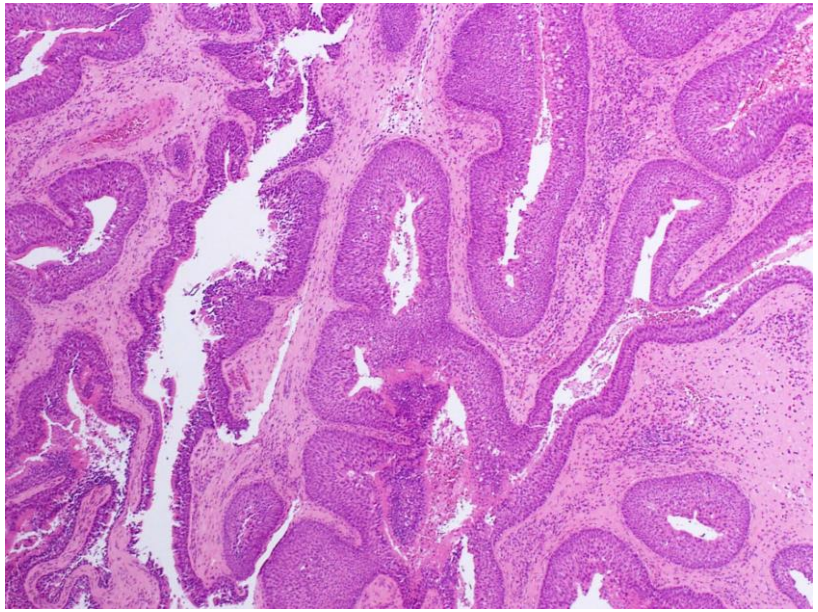
Diagnosis: Intestinal type adenocarcinoma

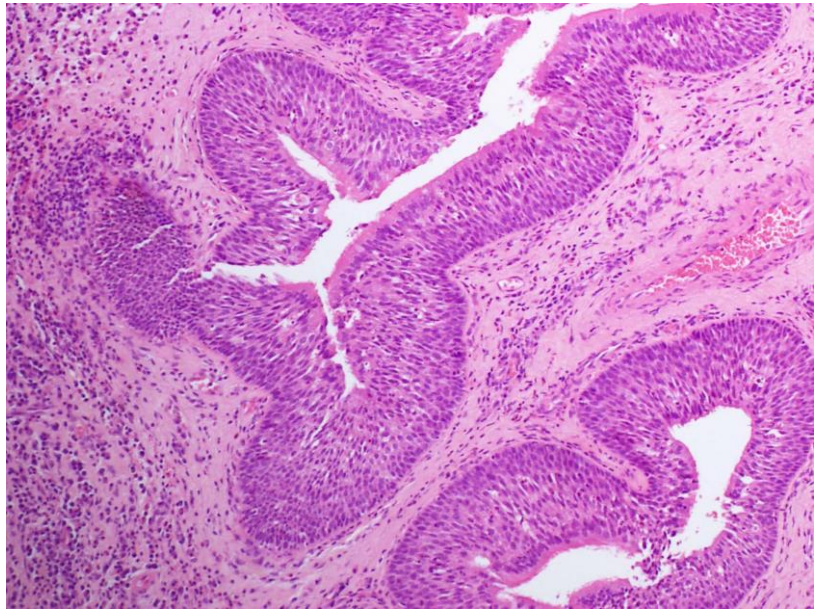
Salivary type	Non salivary non intestinal type	Intestinal type
Origin from surface mucosal or glandular epithelium Most common adenoid cystic ca	**Wide age range > in 3rd - 5th decade**	Second most common after ACC **In males, mean age 5th-6th decade** Ethmoid sinus > nasal cavity > maxillary sinus (sporadic cases)
NA	No association with carcinogens	***Prolonged exposure to wood dusts (hard wood like oak, beech), leather dust, textile, chromium & nickel***
Morphology like salivary type tumours; most common adenoid cystic ca (ACC) ***CK7+, CK5+, p63+ in ACC*** ***Rare CDX2 expression*** ***CK20-ve***	***No features of salivary or intestinal type*** ***<u>High grade:</u> Variety of morphology, high mitotic rate, pleomorphic.*** ***-ve for CK20, CDX2*** ***Low grade: Papillae or tubules/glands lined by single layer of cuboidal to columnar cells with bland morphology and minimal mitosis, but complex growth & invasion.*** ***CK7+, CK20-, CDX2-, DOG1+, SOX10+,S100+***	***Morphology like adenomas/carcinoma of intestinal origin or normal mucosa*** ***(papillary, colonic (most common), solid, mixed, mucinous, mixed types).*** ***+ve for CK20, CDX2, Villin, MUC2, Variable CK7, focal, Synaptophysin, chromogranin*** EGFR protein expression in some woodworkers Preserved mismatch repair proteins &, beta catenin
Poor prognosis due to local spread Surgery & RT	Good prognosis. Surgical excision	***High grade, Aggressive, extend into adjacent sites, lymph node metastasis*** ***Solid & mucinous have worse prognosis than papillary*** ***Rx: Surgery & RT***
DD: Intestinal & non intestinal type, metastatic renal cell ca	DD; ITAC, Oncocytic papilloma, Metastatic ca	***DD, Metastatic intestinal adeno ca, non intestinal sinonasal adeno ca***

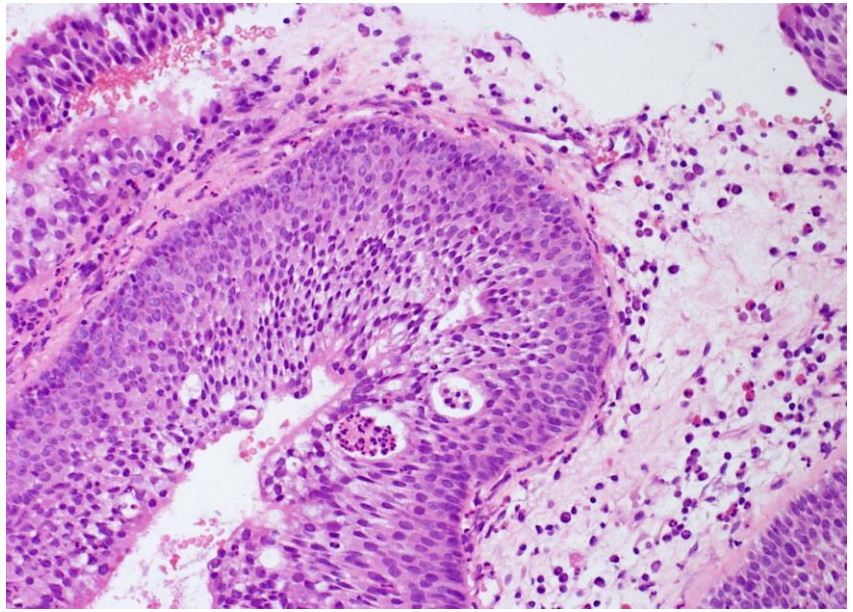
Case 10

63 year old male with nasal polyps

Histology



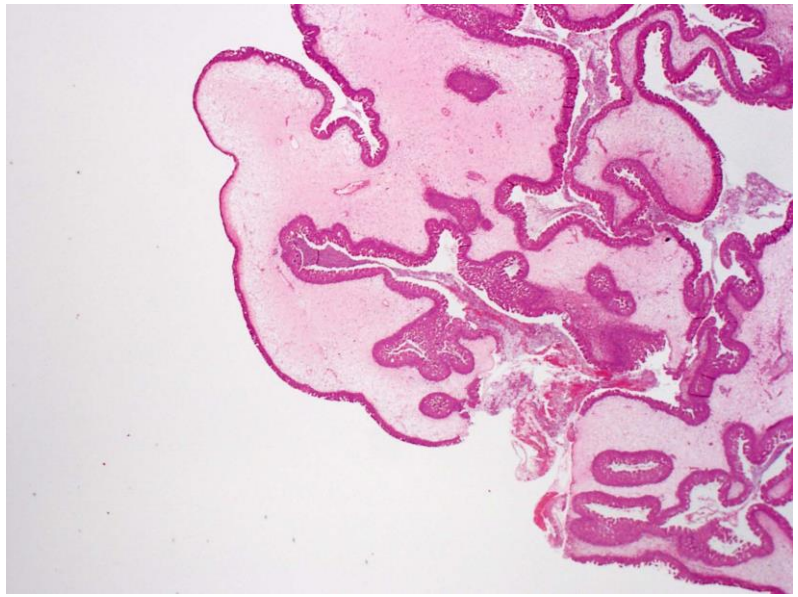


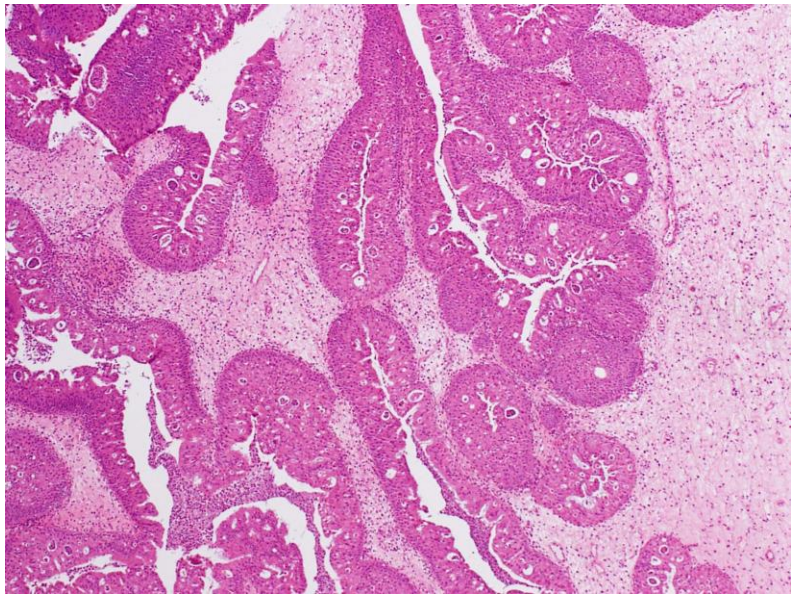


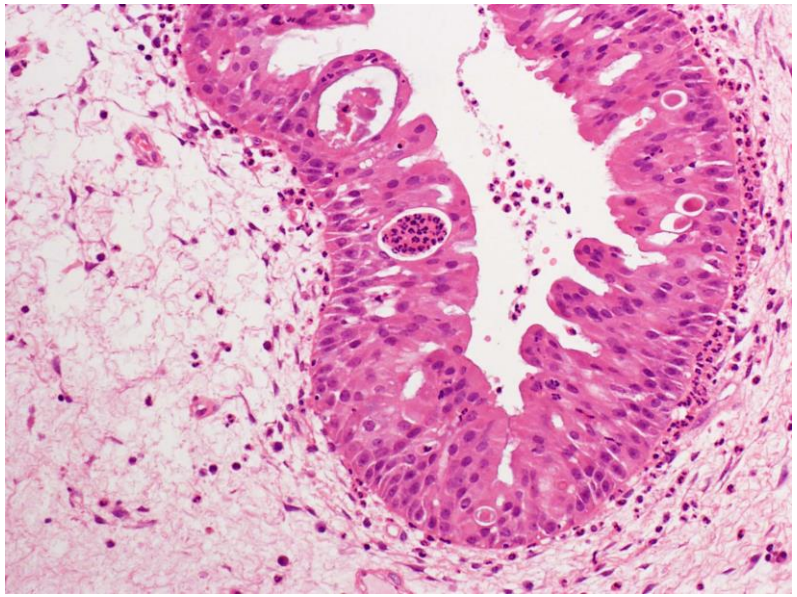
Case 2

80 year old male with nasal polyps

Histology



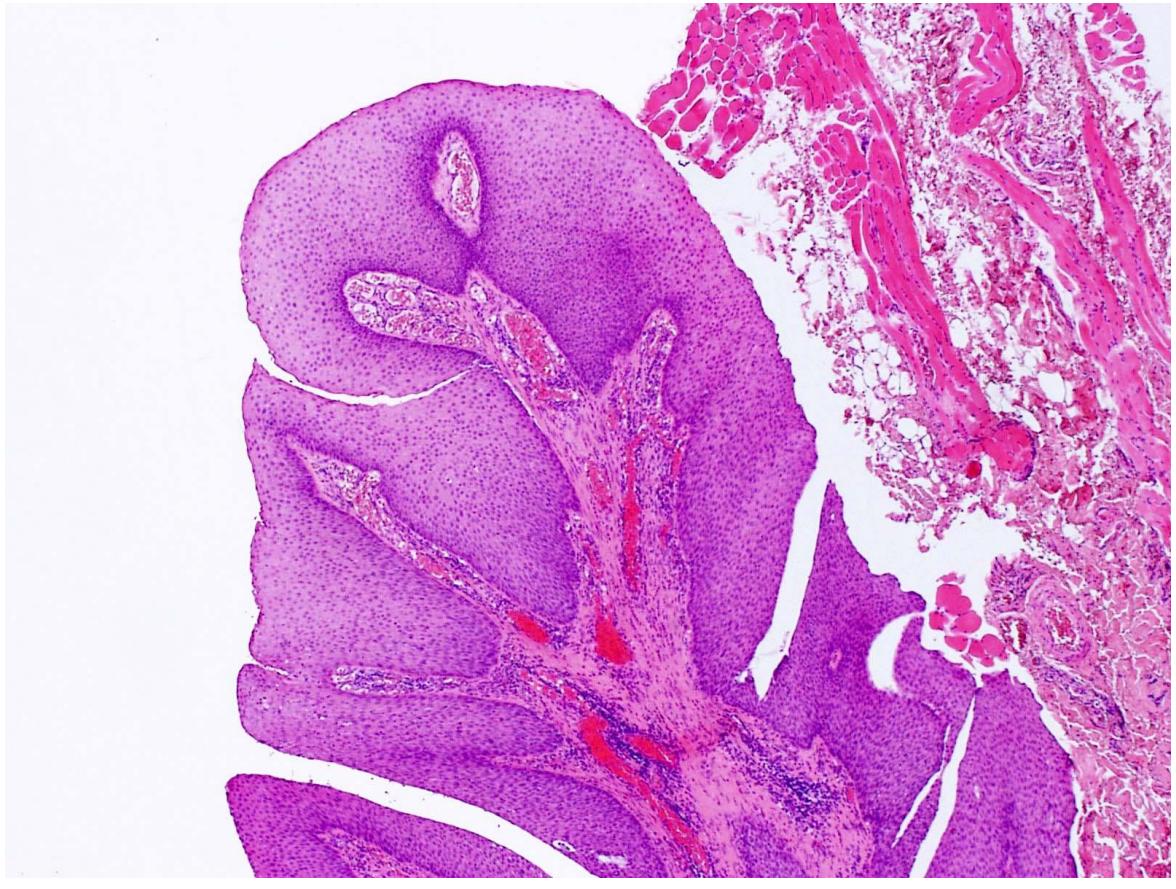




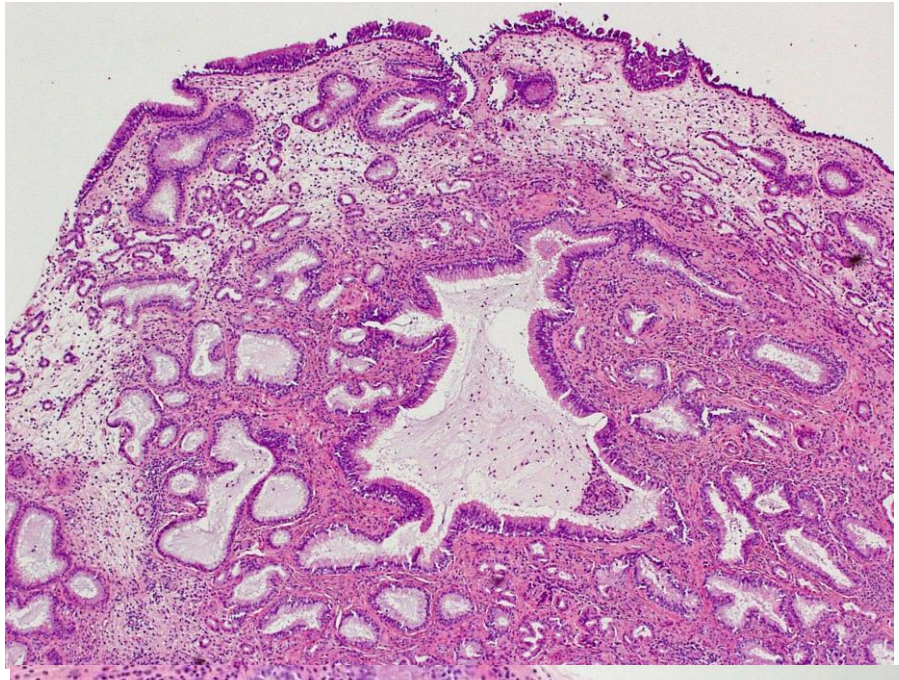
Diagnosis: Oncocytic papilloma

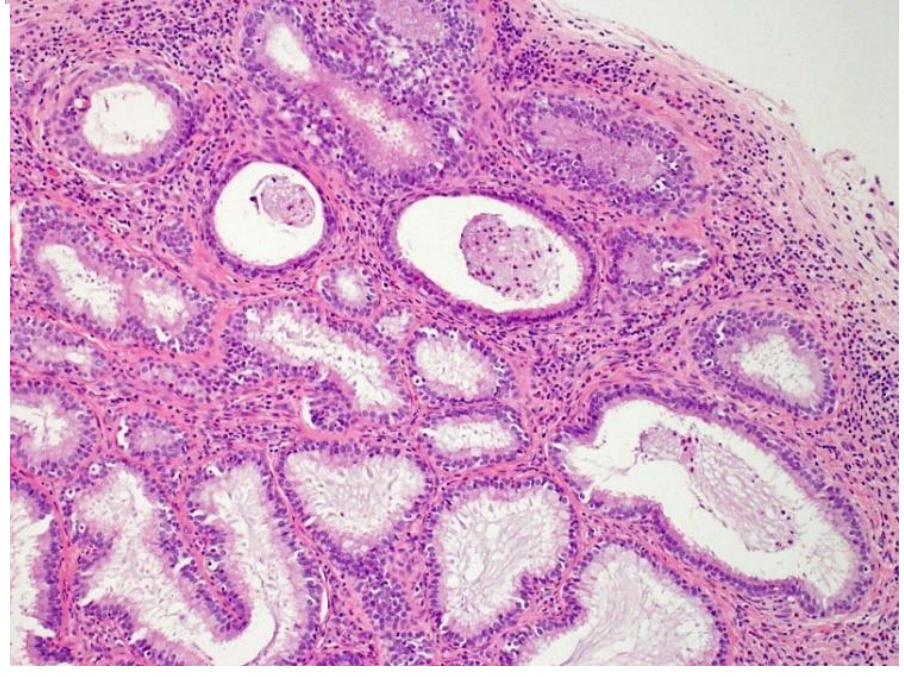
	Fungiform papilloma (exophytic)	Inverted papilloma (endophytic)	Oncocytic papilloma (cylindrical cell)
Site	***Nasal septum (few on lateral wall, paranasal sinus)***	***Lateral nasal wall or sinuses (commonly in maxillary, ethmoid)*** Rare nasal septal origin	Paranasal sinus (maxillary, ethmoid), Lateral nasal wall
Microscopic features	***Exophytic, complex branching papillae, narrow and broad. Multiple layers of squamous or transitional epithelium*** Keratinisation absent or thin unless traumatised Residual seromucous glands present in stroma	***Endophytic growth of hyperplastic squamous or transitional epithelium.*** Elongated, lobulated, cystic and branching islands. Keratinisation may be present. ***Residual seromucous glands absent or scanty; inflamed stroma Malignant change may be abrupt with similar architecture*** HPV DNA (low or high risk) in 20-25% (more in recurrent/dysplasia)	***Exophytic and endophytic papillary growth of pseudostratified columnar epithelium with eosinophilic, granular cytoplasm*** Uniform, vesicular nuclei. ***Intraepithelial microsbscesses and microcysts common***
Treatment	Local excision	Medial maxillectomy <20% recurrence	Excision, medial maxillectomy; 1/3 recur
Prognosis	Recurrence due to incomplete excision No risk of malignant transformation	***Recurrence higher with conservative approach (higher in frontal sinus) 11% risk of malignant transformation (keratinising or non keratinising SCC)***	***Malignant transformation less common***
DD	Inverted papilloma, skin papilloma, Papillary / exophytic SCC	***NK SCC, Respiratory epithelial adenomatoid hamartoma (REAH)***	***Low grade adenocarcinoma Rhinosporidosis***

Exophytic papilloma

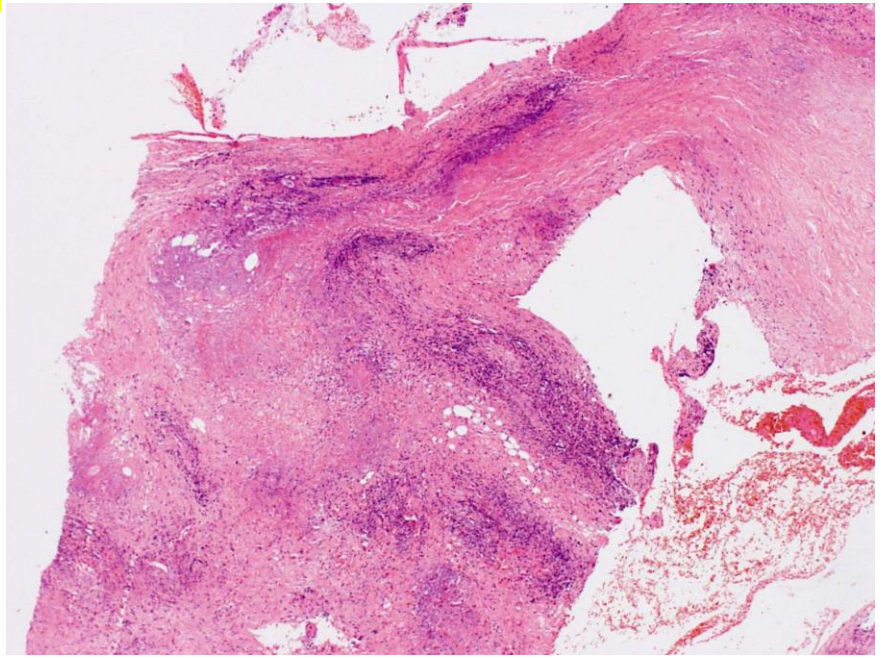


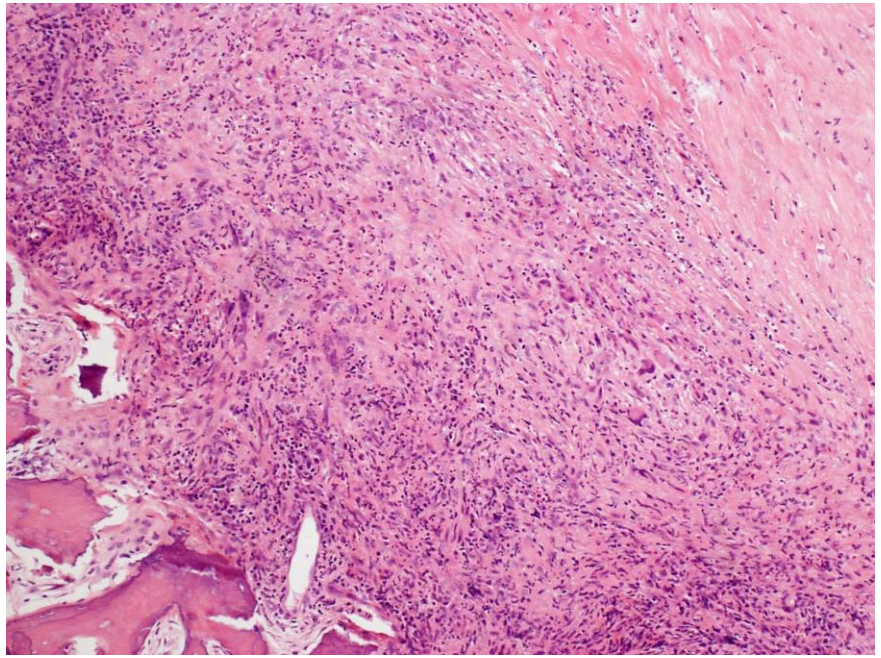
Respiratory epithelial adenomatoid hamartoma

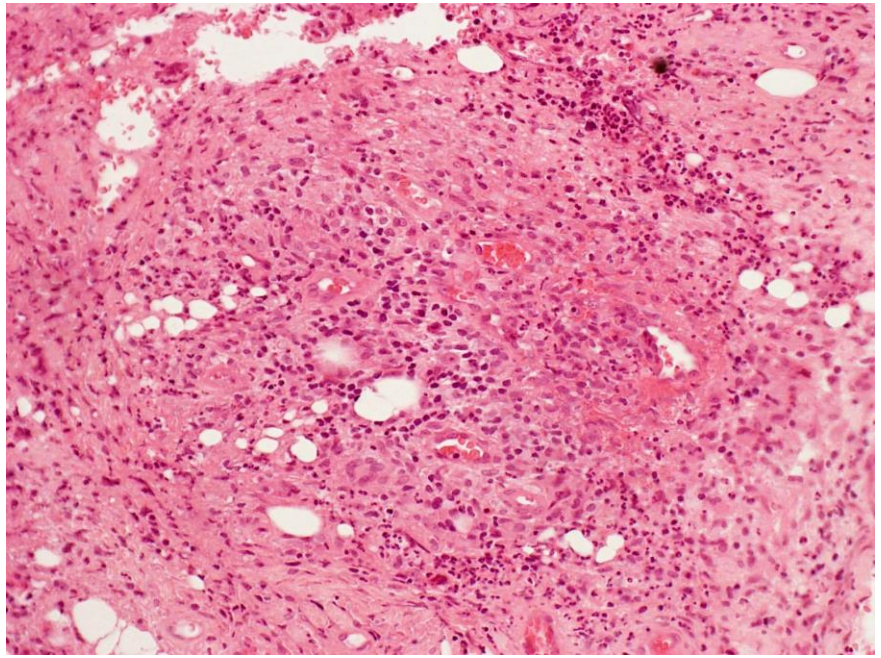


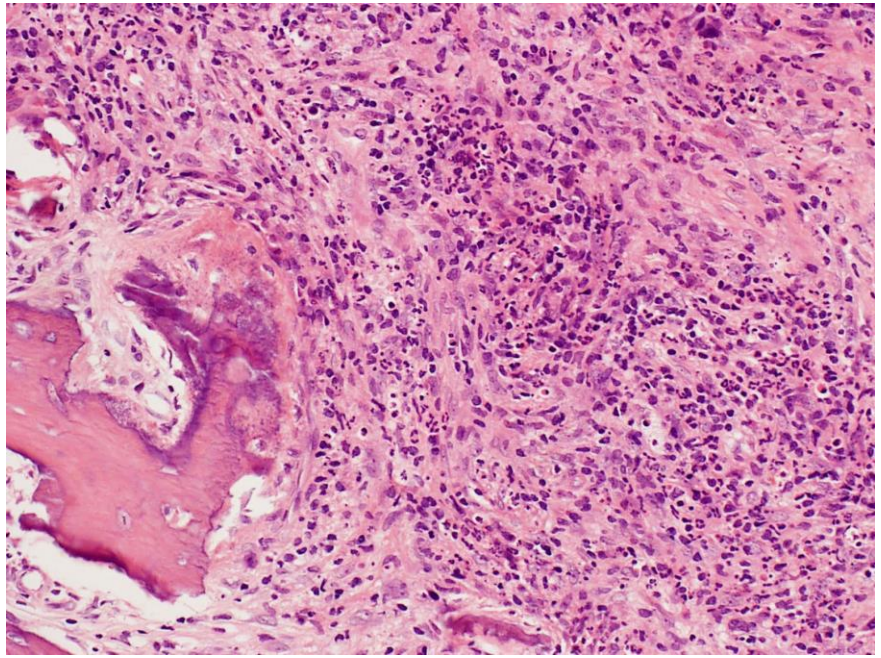


Case 12. 35 Male
Loss of vision
Orbital biopsy









Diagnosis: Granulomatous polyangiitis (Wegeners granulomatosis)

DD:

- Social habits: Coccaine use (CIMDL)
- Malignancy (NK/T cell lymphoma and other tumours).
- Microbial infection: Invasive fungal infection
- Other vasculitidis: Churg Strauss
- IgG4 sclerosing disease, Eosinophilic angiocentric fibrosis

Diagnosis:

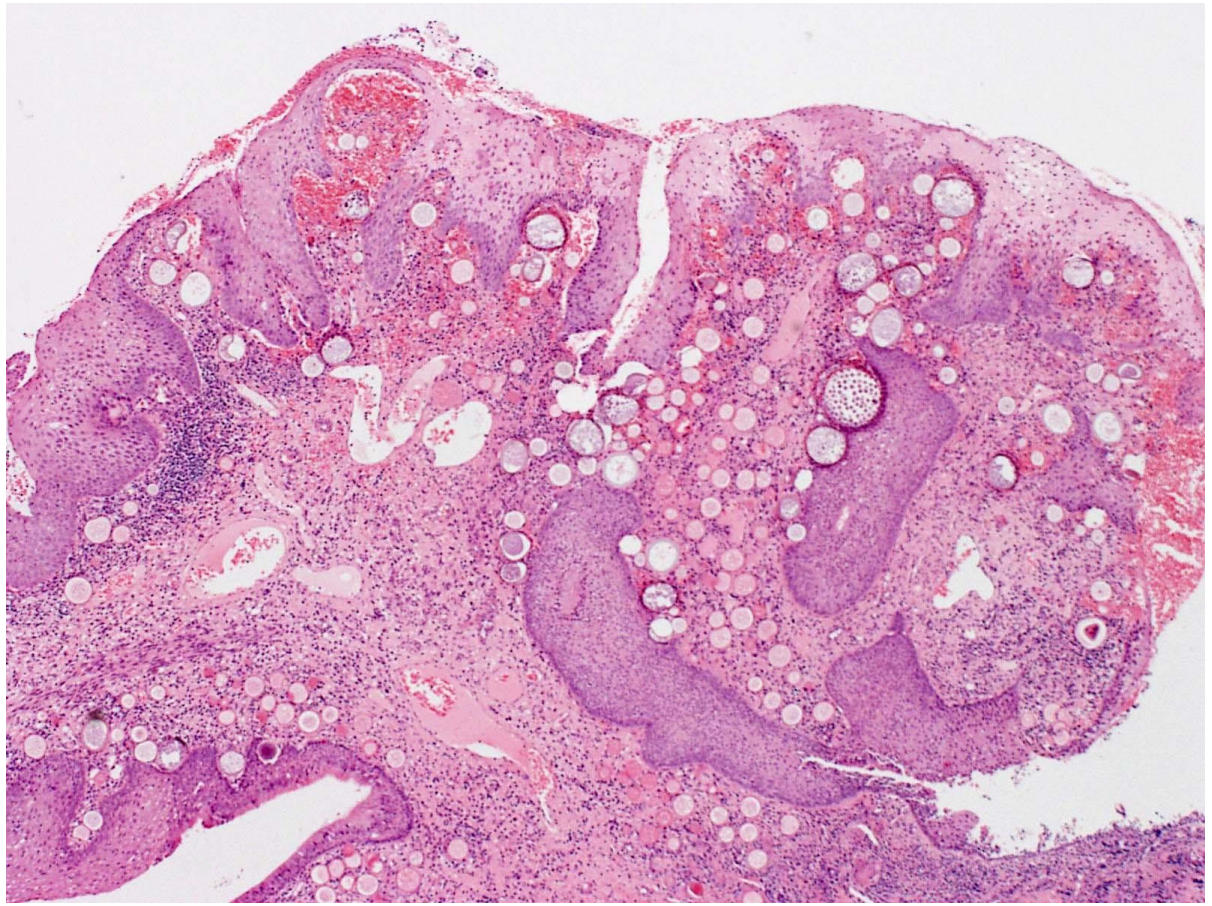
cANCA (MPO, PR3)

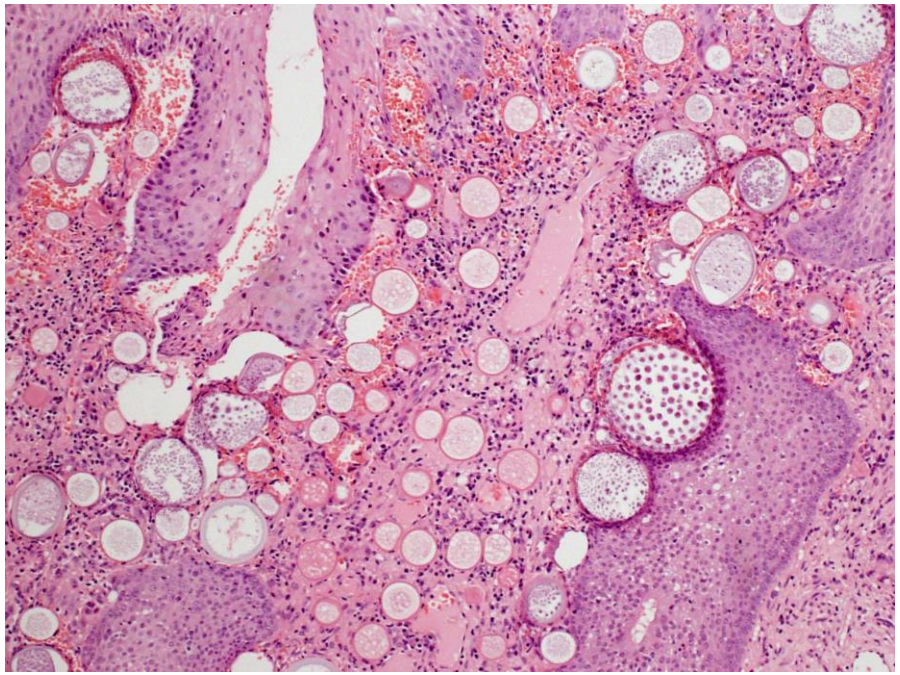
Localised, systemic

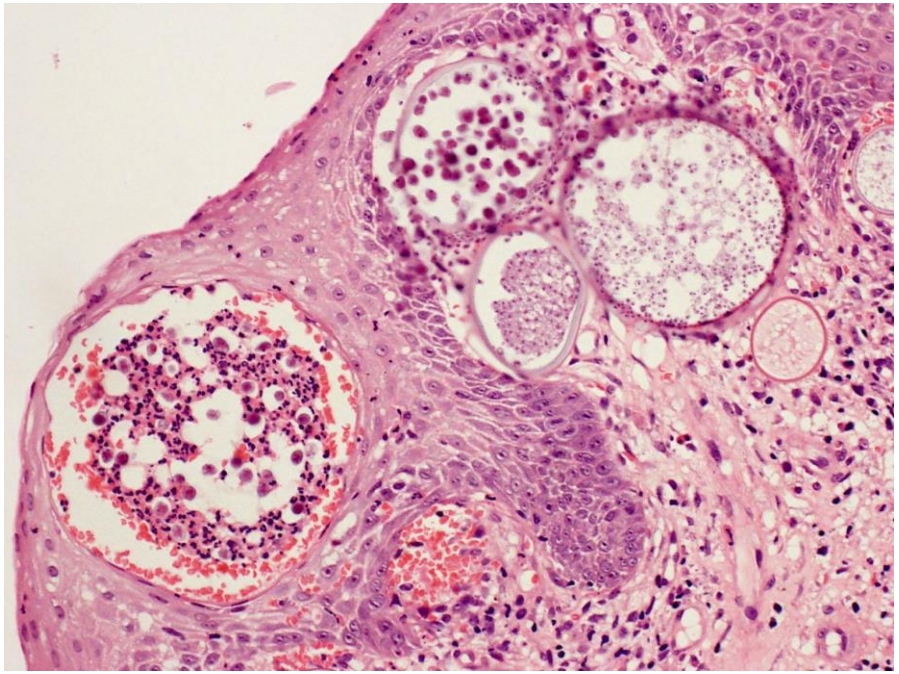
- ***Necrosis, small vessel vasculitis, granuloma, clinical findings and history***
- ***Active vs quiescent stage***

Case 13. 47 Male
Left nasopharynx polyposis

Histology







Diagnosis: Rhinosporidosis

Aetiology: Rhinosporidium seeberi (eukaryotic parasite Mesomycetozoea)

Endemic in India, Srilanka, Malaysia, Argentina, Brazil

Sites commonly involved: Nasal cavity, conjunctiva, larynx, genitourinary tract.

Histology: nonulcerated mucosa, hyperplastic, inflamed with mixed acute & chronic inflammatory cells, granuloma. Numerous endospores (2-9microns) in large thick-walled cysts (spherules/ sporangia) max size 300microns in the epithelium and connective tissue.

Distinguish from following:

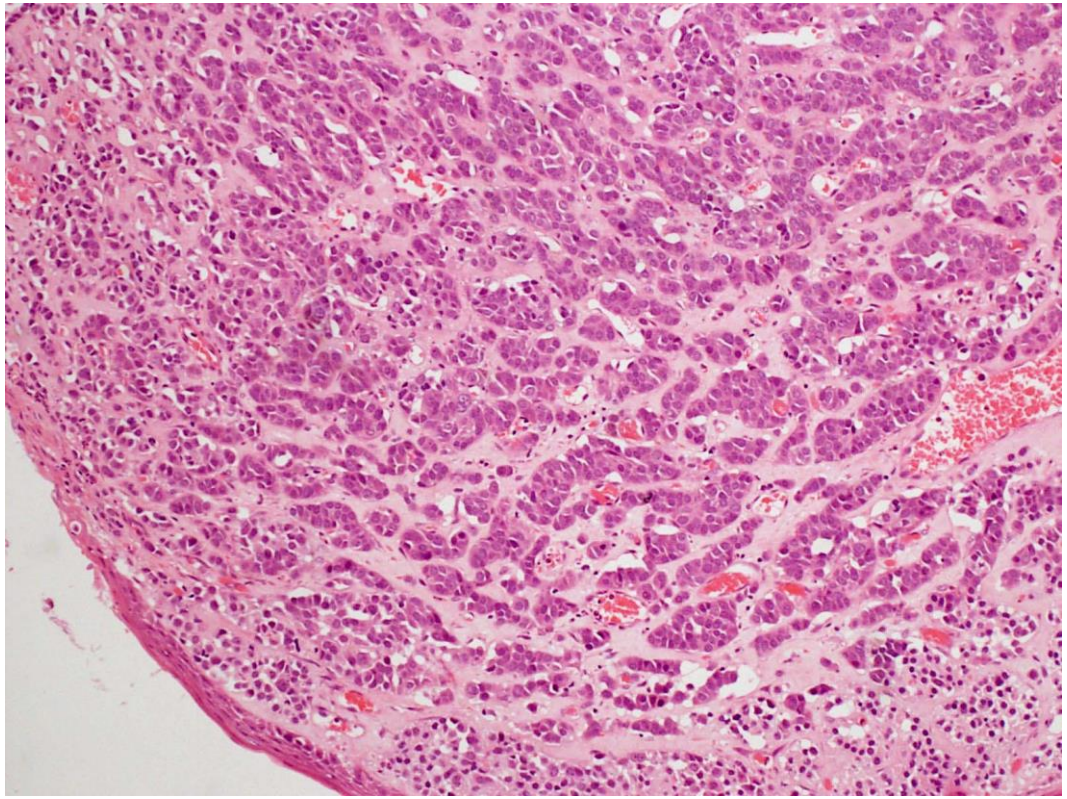
- Sinonasal papillomas especially Oncocytic papilloma, inflammatory polyp
- Other infections: Fungal such as coccidioidomycosis (smaller spherules, thinner wall, not birfringent and negative for mucicarmine)

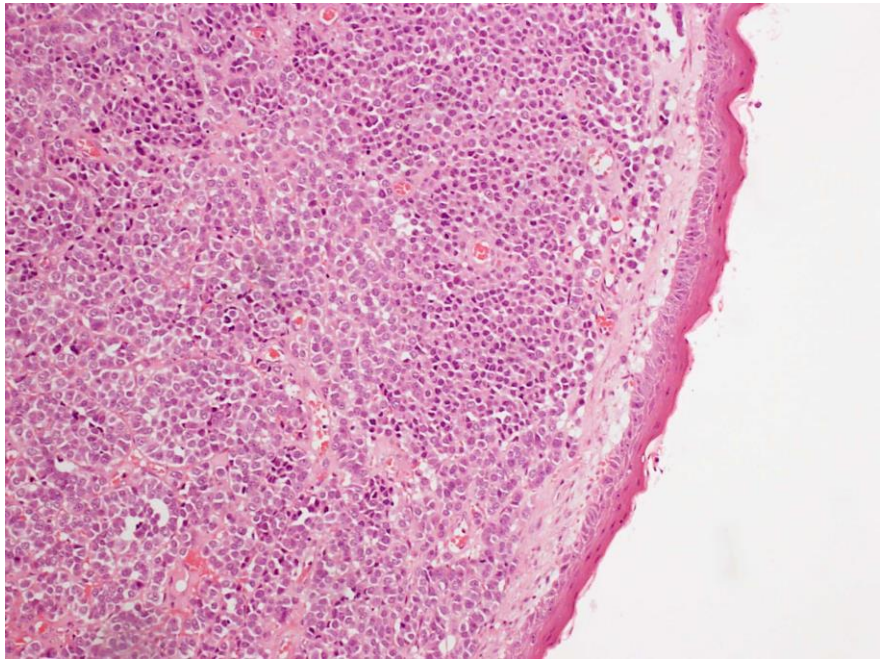
Rhinoscleroma (Klebsiella rhinoscleromatis) completely different microscopic appearance (Mikulicz cells- histiocytes with Gram negative rods).

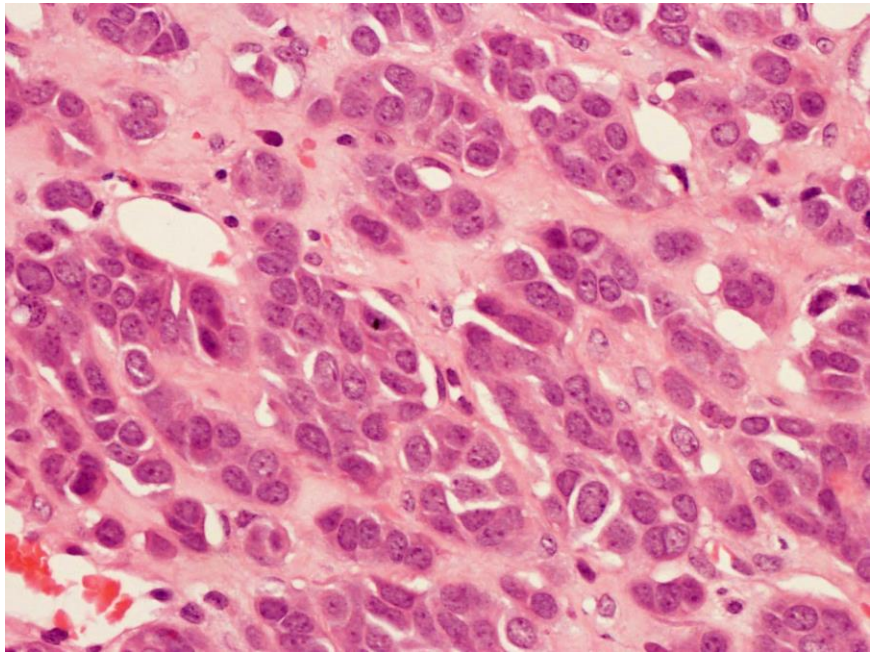
Case 14. 69 male

Right supraglottic tumour

Histology





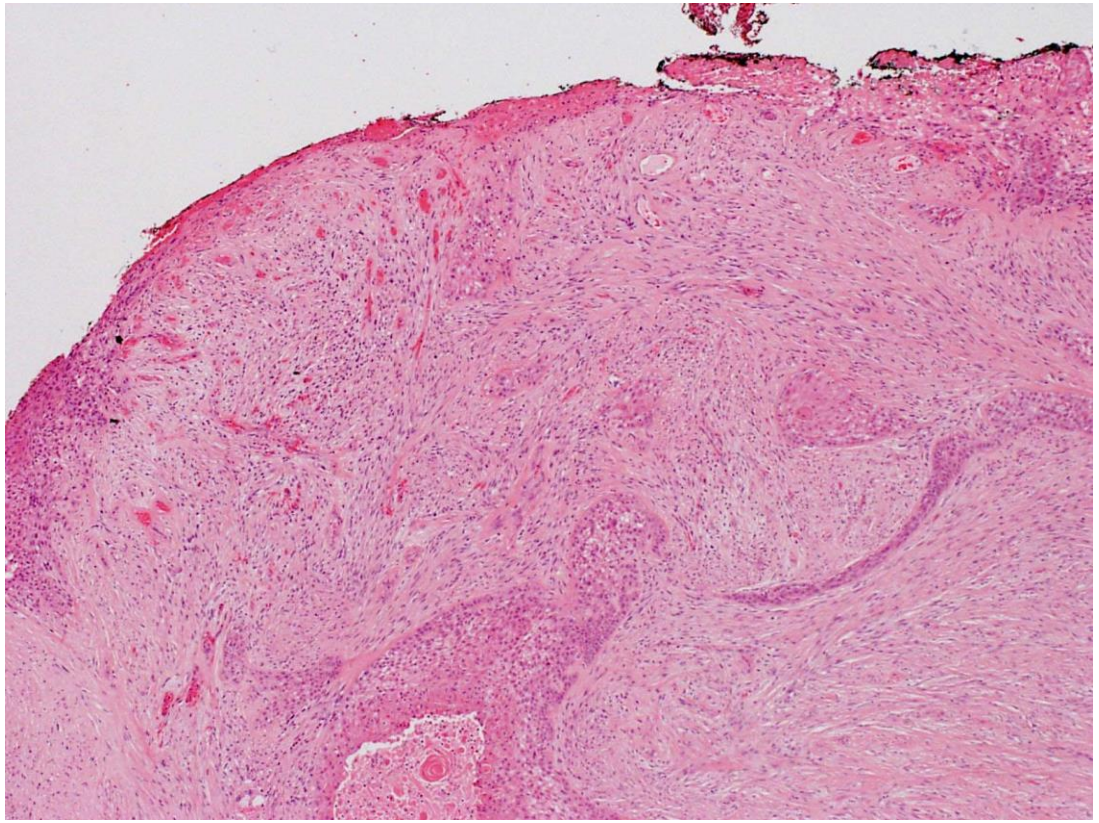


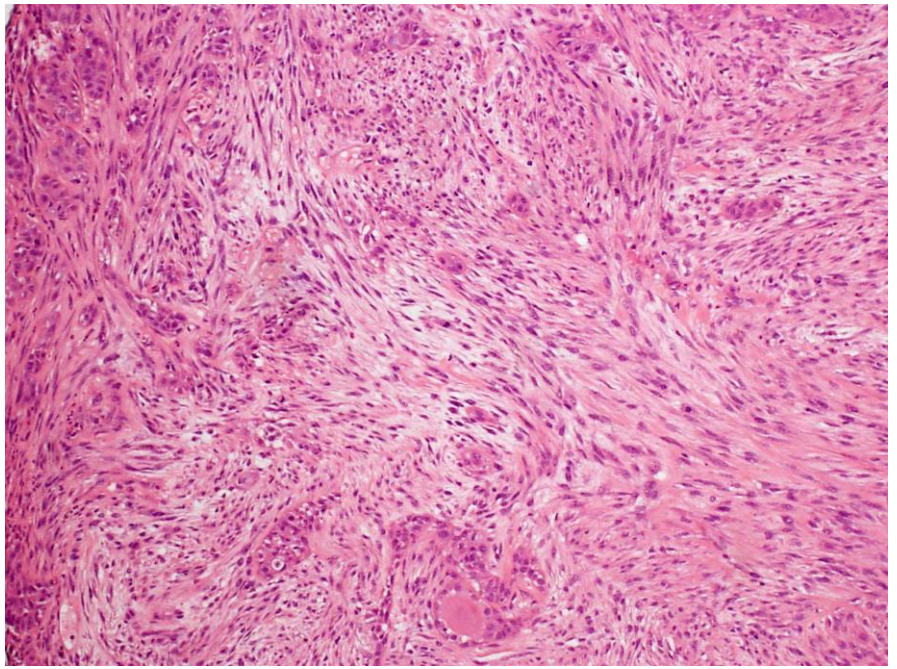
Diagnosis: Neuroendocrine carcinoma, moderately differentiated (atypical carcinoid)

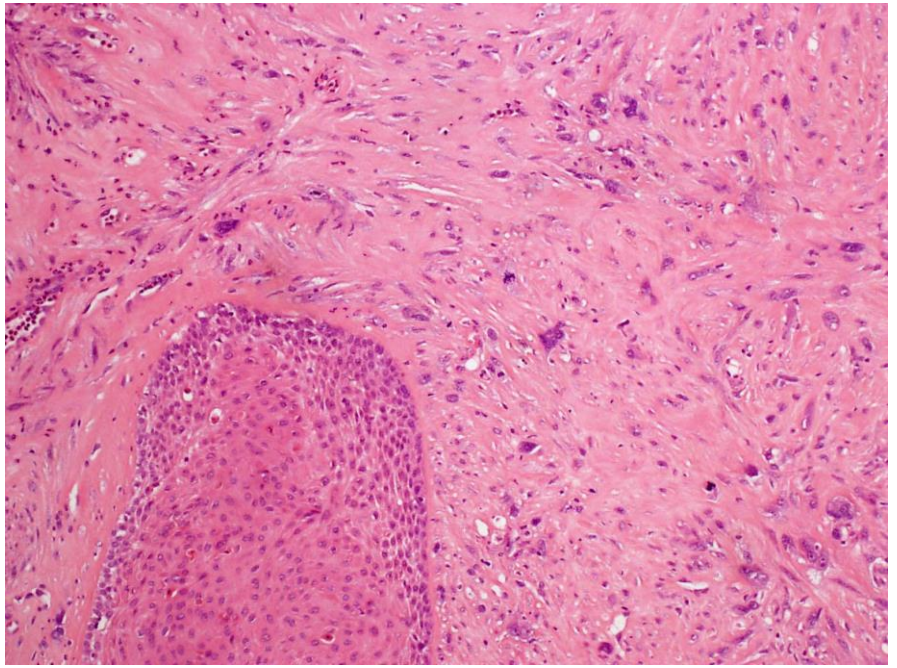
- **Immunohistochemistry:** +ve for Synaptophysin, Chromogranin, CD56, AE1/AE3, **Calcitonin**, TTF1, CEA
- More common in male, smokers, 6^{th}-7^{th} decade, >90% in supraglottic region
- **Histology:** Nests, cords, trabeculae of cells with round to spindled nuclei, stippled chromatin, nucleoli, 2-10mitotsis /10HPF, necrosis, occasional amyloid.
- **Prognosis:** Lymph node and distant metastasis.

  High recurrence, 5-year survival of about 50%
- **DD**: SCC, Metastatic NEC, Well differentiated NEC, **paraganglioma, medullary carcinoma**.
- **Management:** Surgery.

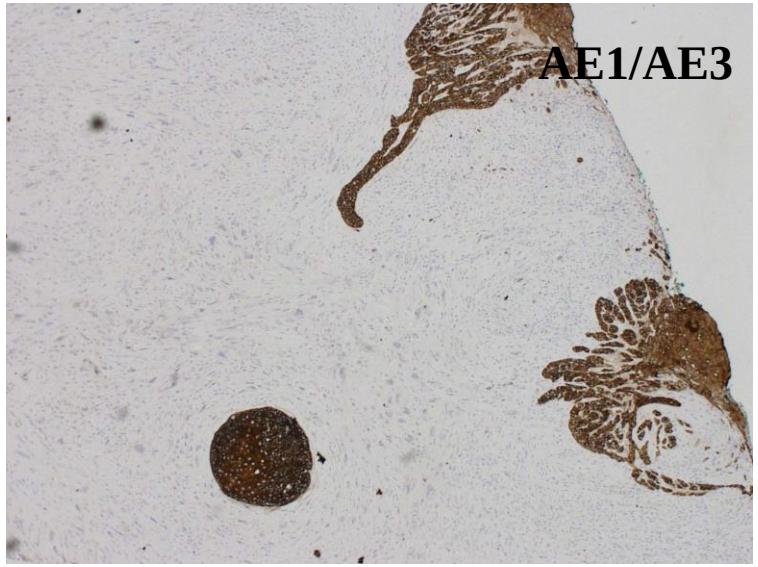
Case 15. 93 male
Laryngeal mass; presenting with stridor

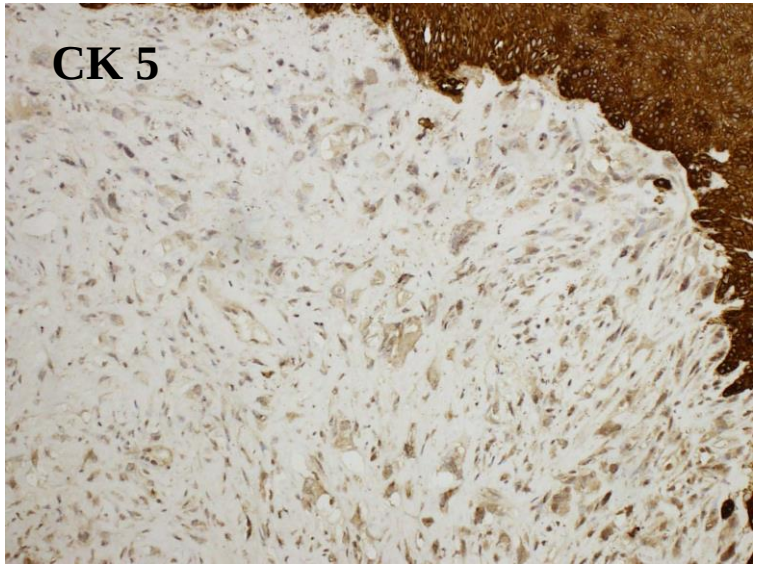


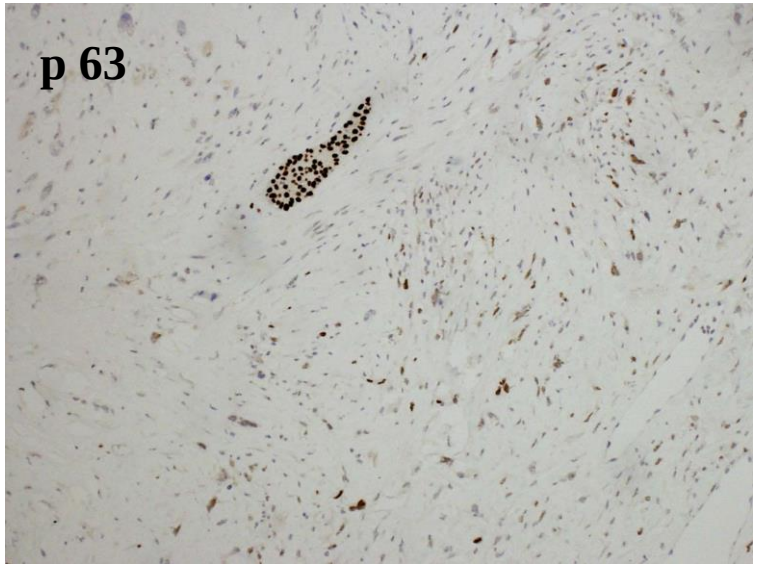


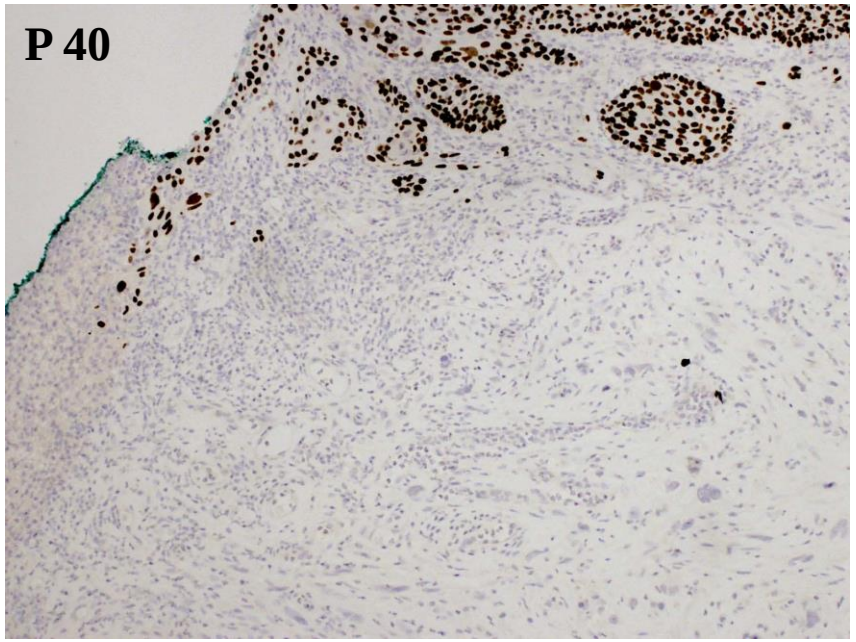


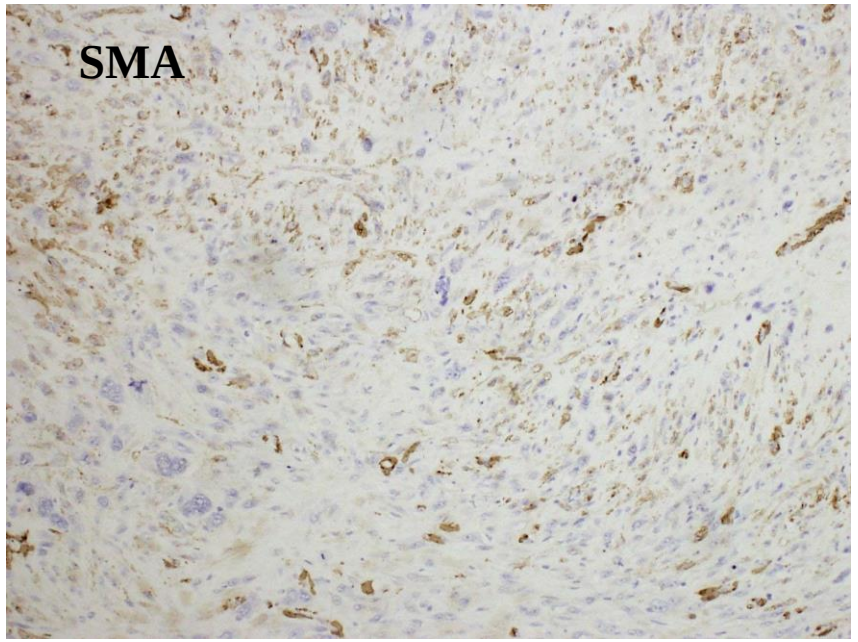
Immunohistochemistry









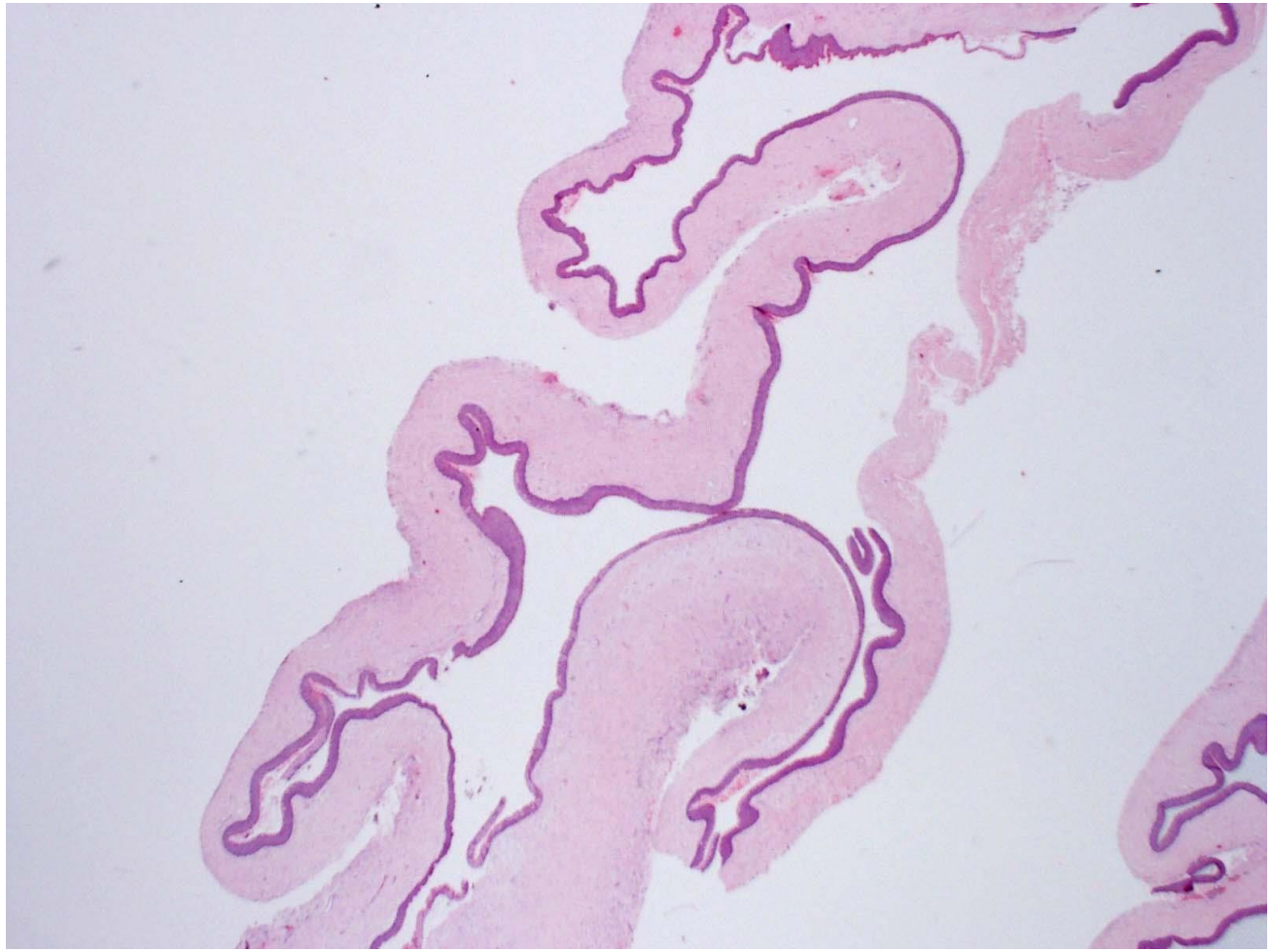


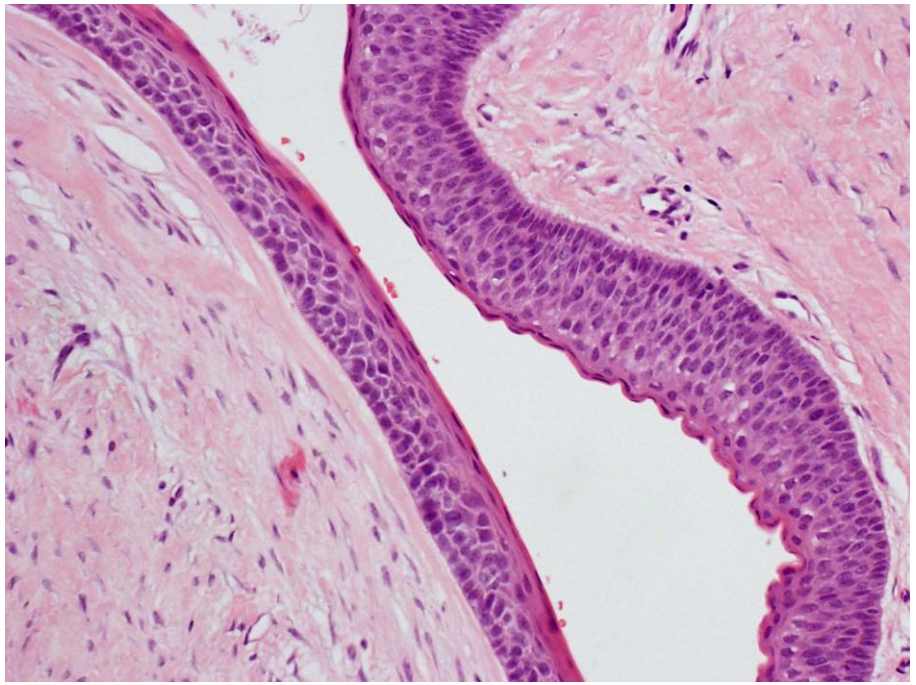
Diagnosis: Spindle cell squamous cell carcinoma

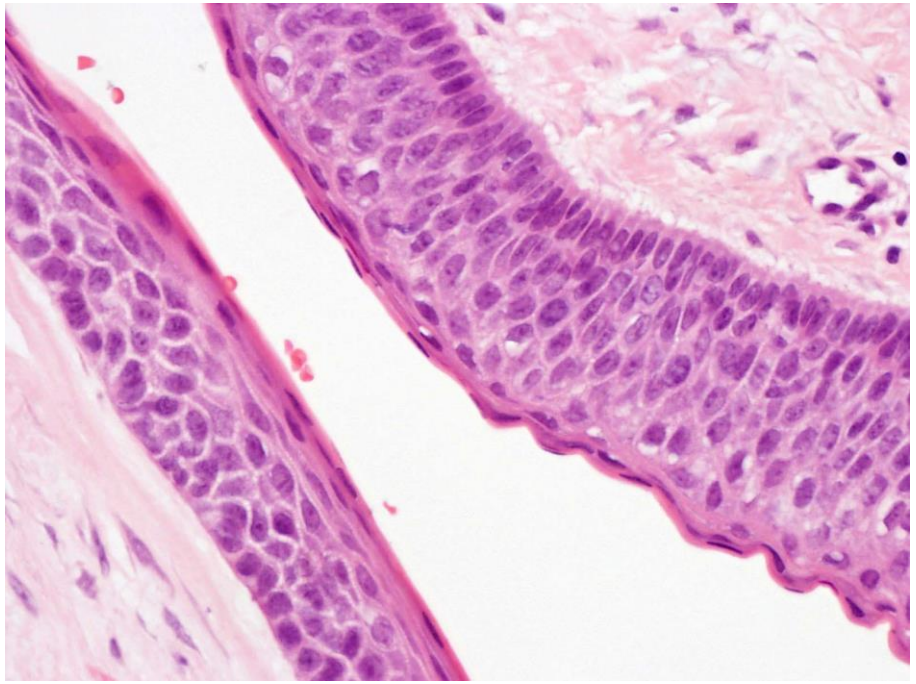
- **Synonyms:** Sarcomatoid carcinoma, Carcinosarcoma
- **Aetiology:** Smoking, alcohol, radiation
- **Location & histology:** Glottis
- Polypoid and often ulcerated; check for dysplastic epithelium or invasive carcinoma. Heterologous differentiation (cartilage, bone, s.keletal muscle); May be bland and appear like myofibroblastic proliferation.
- **Immunohistochemistry:** AE1/AE3, p63, p40, EMA
- **DD:** Sarcoma (rare); SCC with reactive / desmoplastic stroma, Radiation related fibrosis.
- **Prognosis:** Similar to SCC; exophytic type has better prognosis.
- **Management:** Surgery

Case 16. 19 male

Right posterior mandibular cyst. History of multiple cysts





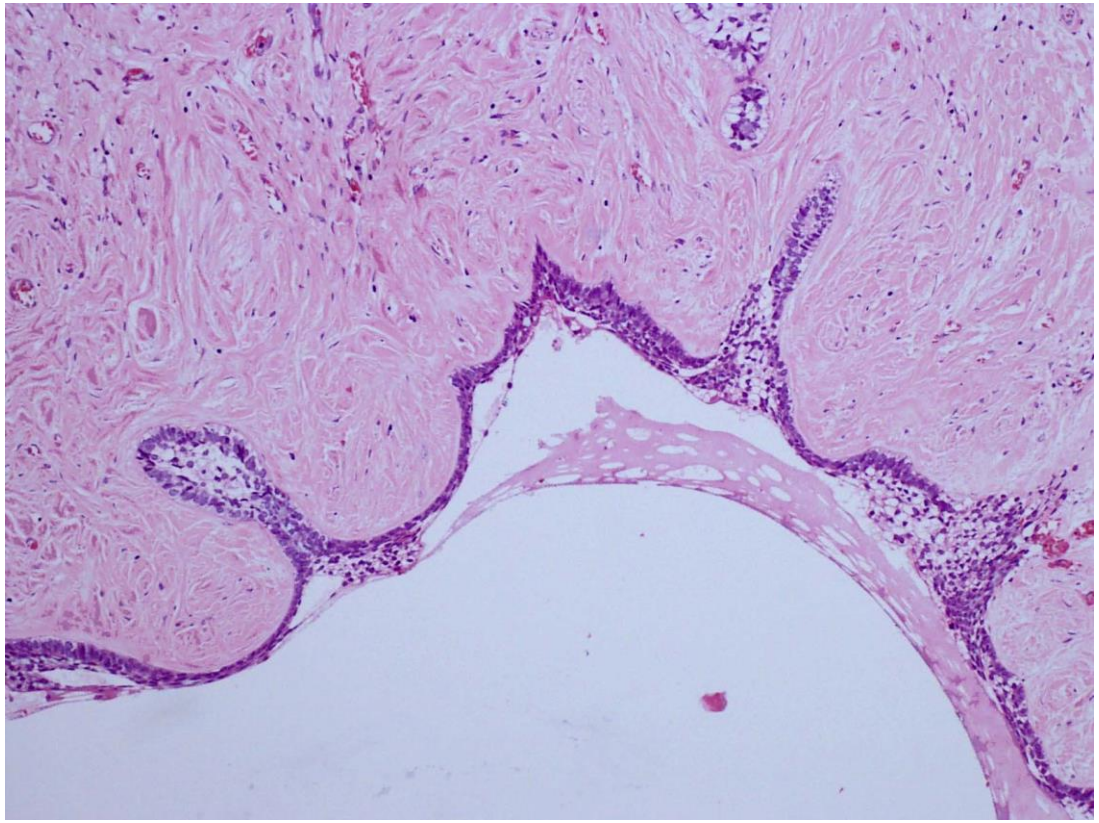


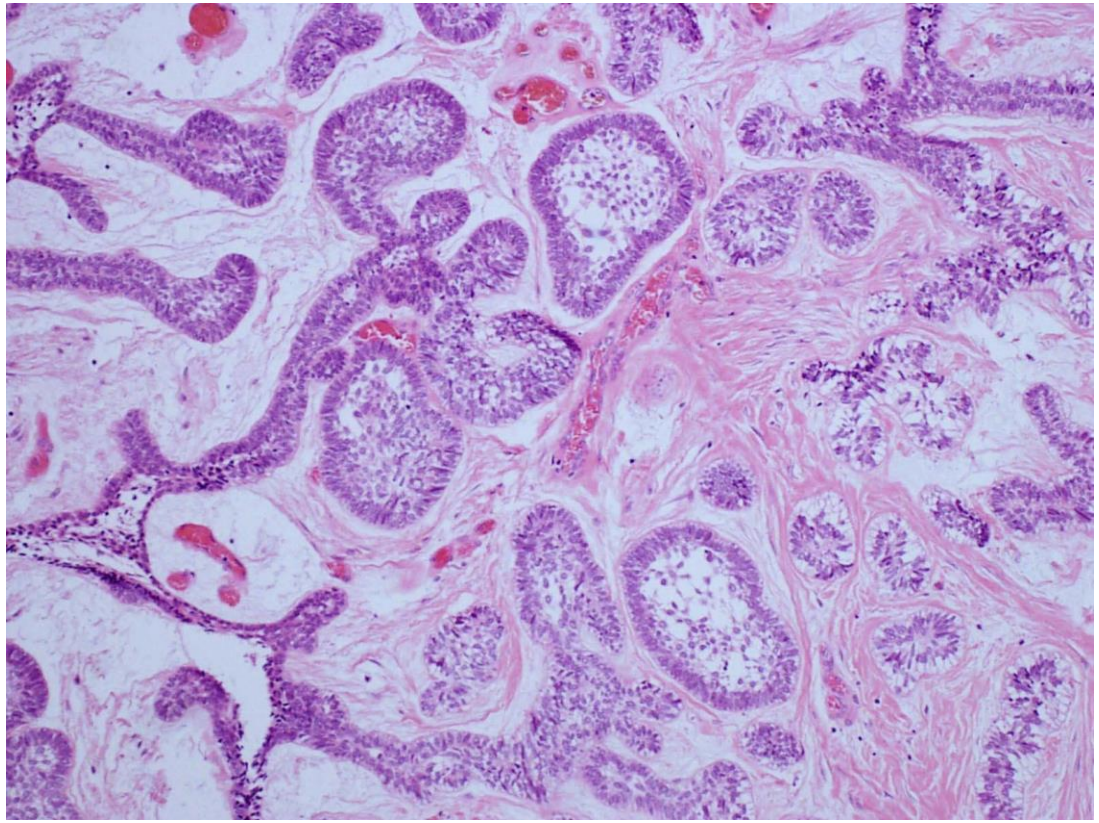
Diagnosis: Odontogenic keratocyst

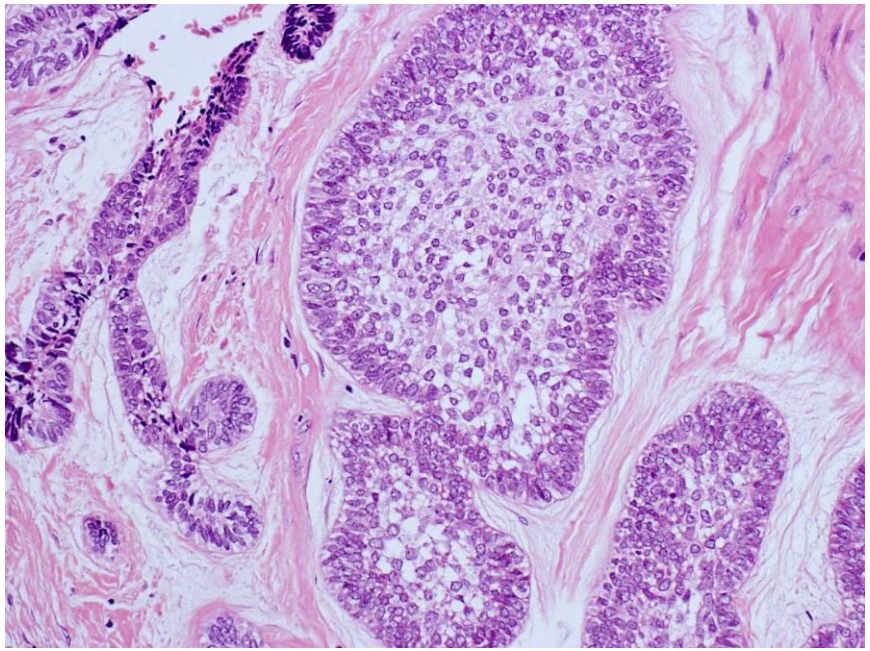
Key facts:

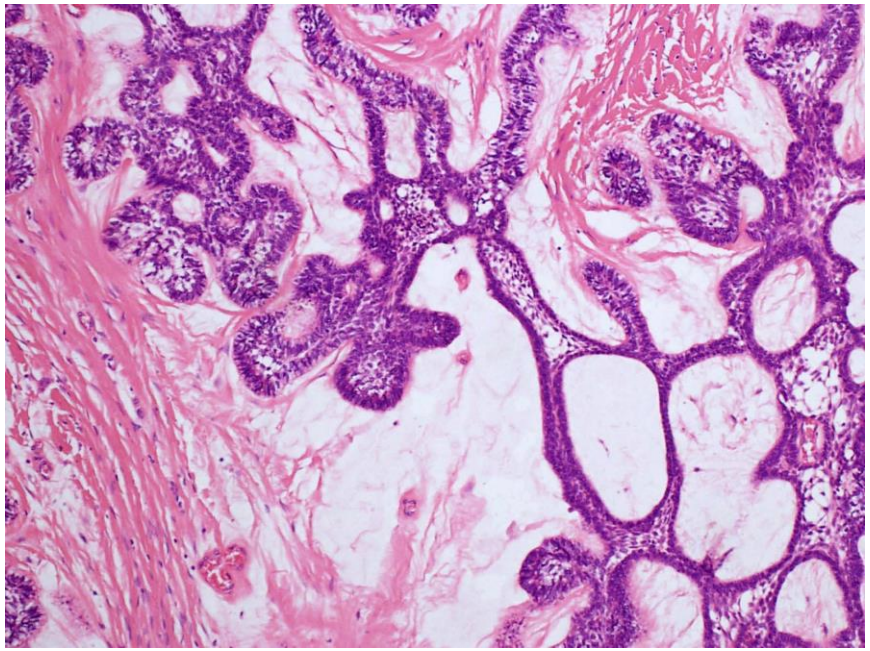
- Developmental cyst with a high rate of recurrence if incompletely removed.
- Mandible posterior body / ramus
- May grow to large sizes before expansion of the jaw and therefore late presentation; uni or multilocular radiolucency.
- May have satellite cysts (especially exuberant in syndromic cases)
- Multiple cysts often associated with Gorlin-Goltz syndrome
- (Naevoid basal cell carcinoma syndrome)
- PTCH1 gene mutation & inactivation
- Management: Enucleation depending on extent, with / without Carnoy's solution

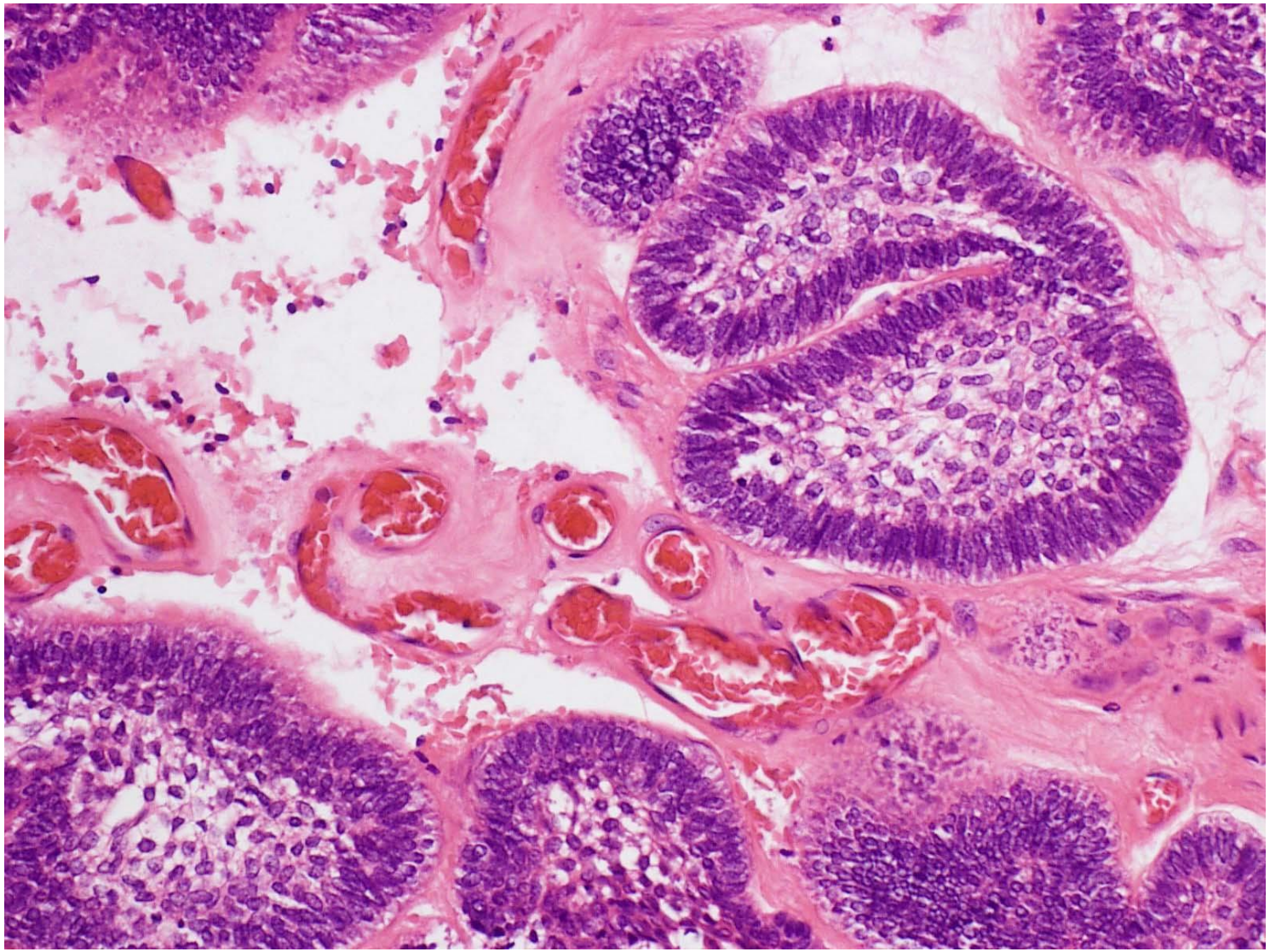
Case 17. 26 male
Cystic lesion right posterior mandible











Diagnosis: Ameloblastoma

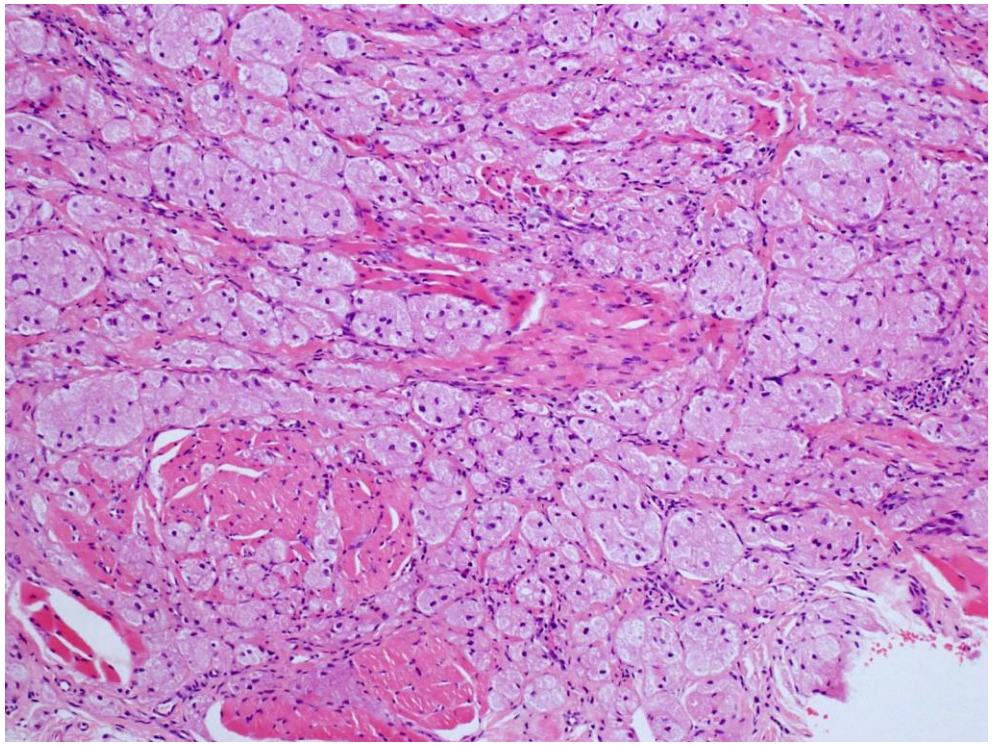
- Benign intraosseous tumour causing bone expansion (solid / multicystic)
- **BRAF V600E mutation** in some
- Most in posterior mandible; some in anterior mandible
- Symptomatic when large: tooth root resorption, displacement, paraesthesis
- **Imaging:** Corticated multilocular radiolucency
- **Histology:** Follicular, plexiform, acanthomatous, Desmoplastic, basaloid, granular cell
- **Management:** Surgical excision, with a rim of surrounding bone.
- **DD*: Unicyctic Ameloblastoma, Peripheral Ameloblastoma, Inflamed odontogenic cyst, Ameloblastic carcinoma***

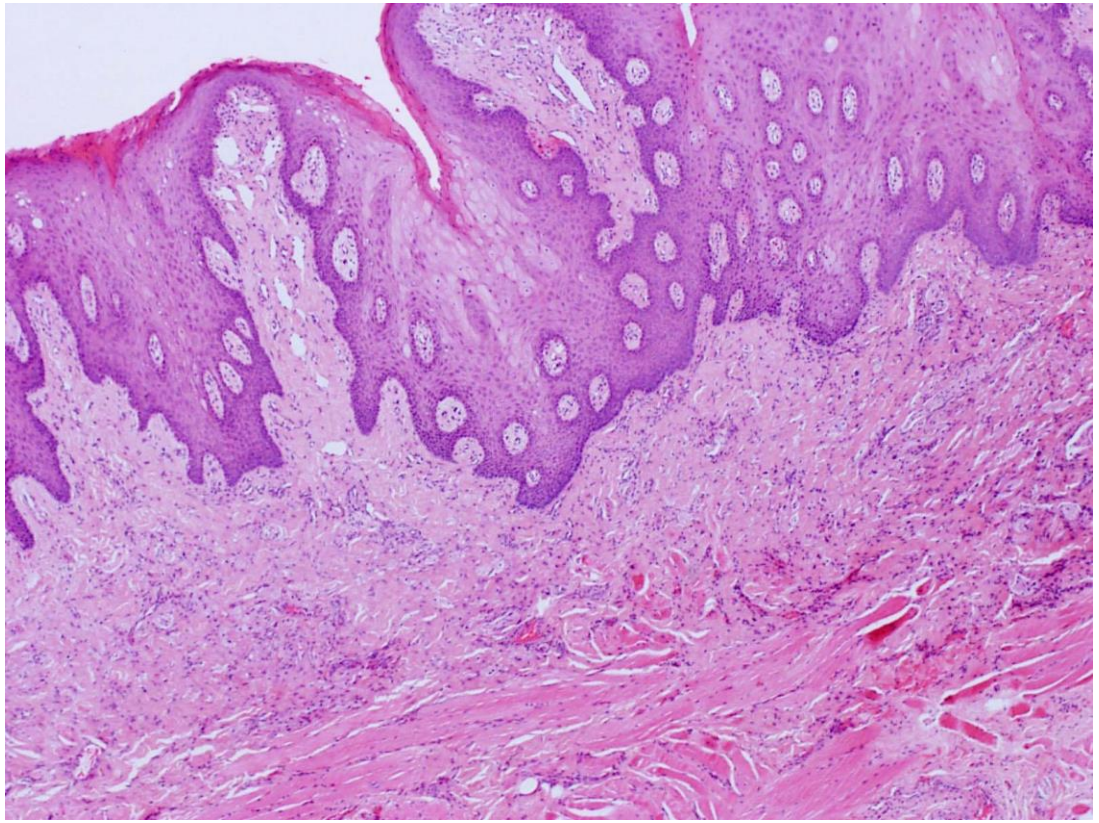
Similar morphology in some cranipharyngiomas (location is key);

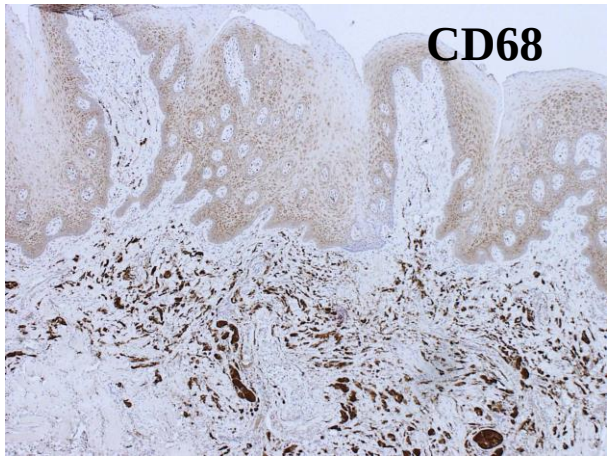
- Benign can rarely metastasize after repeated surgery (lungs, lymph nodes, bone).

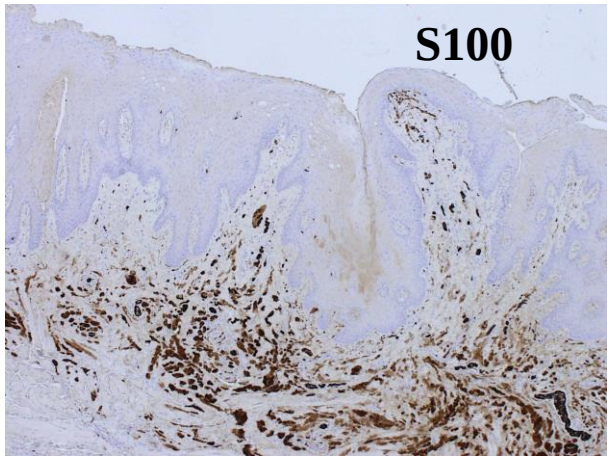
Case 18. 28 female

Right anterior-lateral tongue; submucosal nodule









Diagnosis: Granular cell tumour

- **Origin:** Nerve sheath origin
- **+ve for S100, CD68, NSE.**
- Majority in oral cavity (H&N sites)
- **DD:**

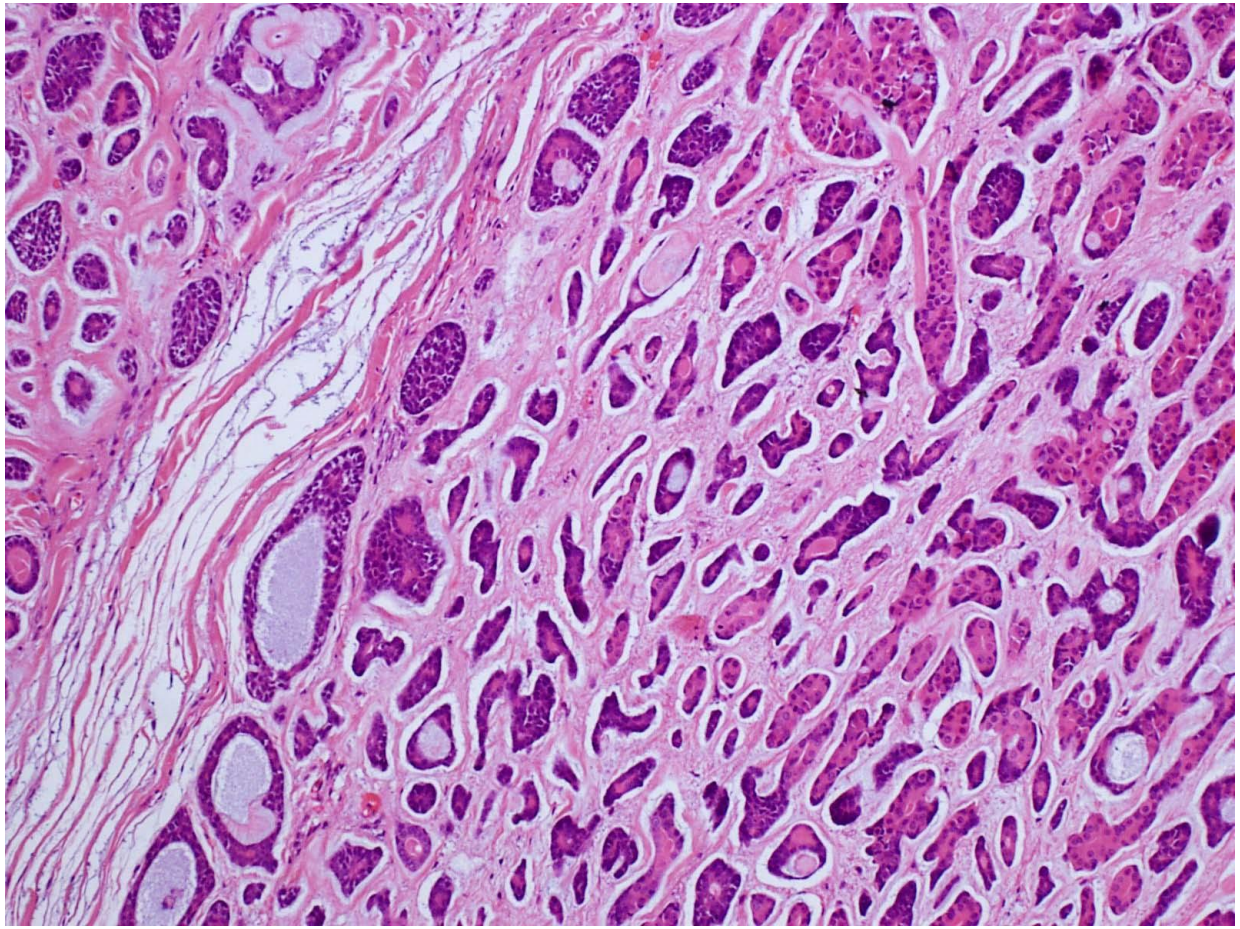
(Pseudoepitheliomatous hyperplasia of surface epithelium): Microbial infection

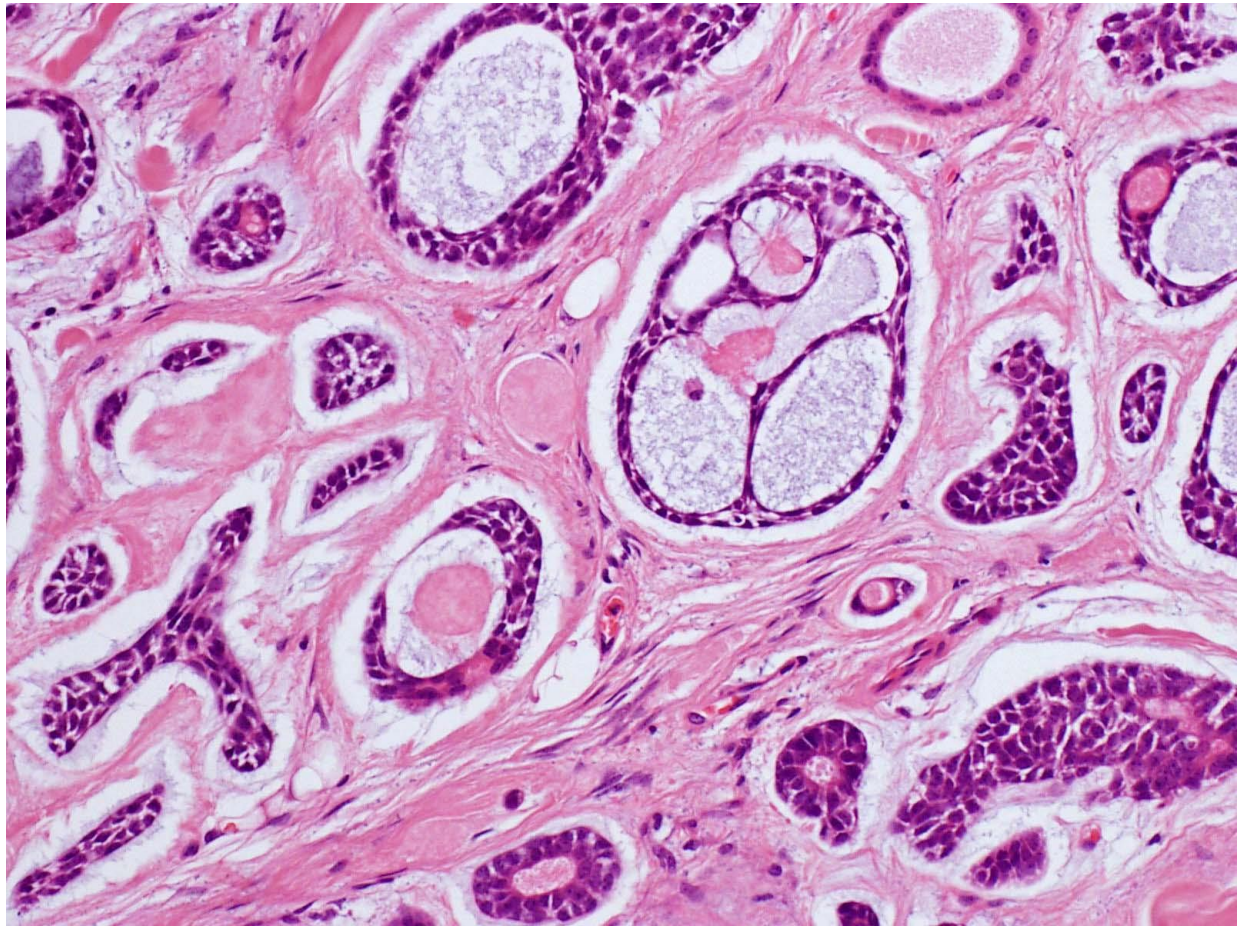
Adult type rhabdomyoma, Xanthoma, Oncocytic tumours

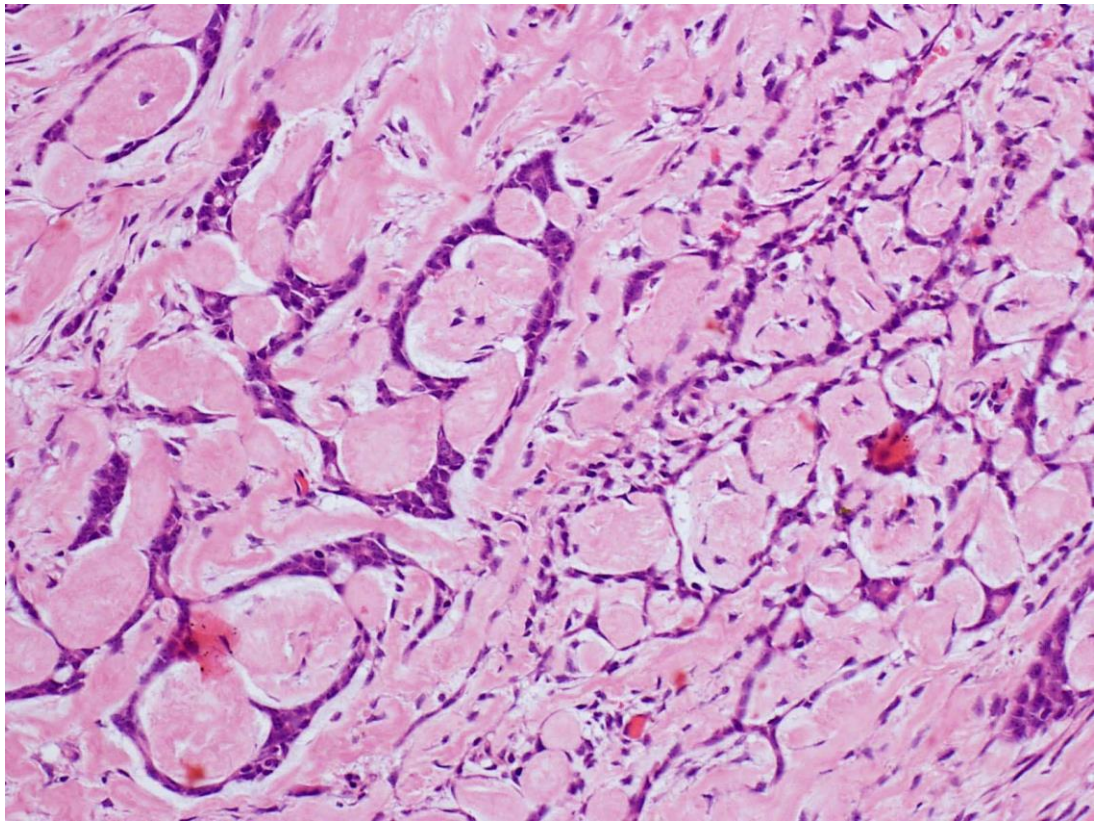
- Malignant type: rare; spindle shaped cells with pleomorphic, vesicular nuclei, High N:C ratio, Mitosis >2/10HPF, necrosis,
- Long standing tumour

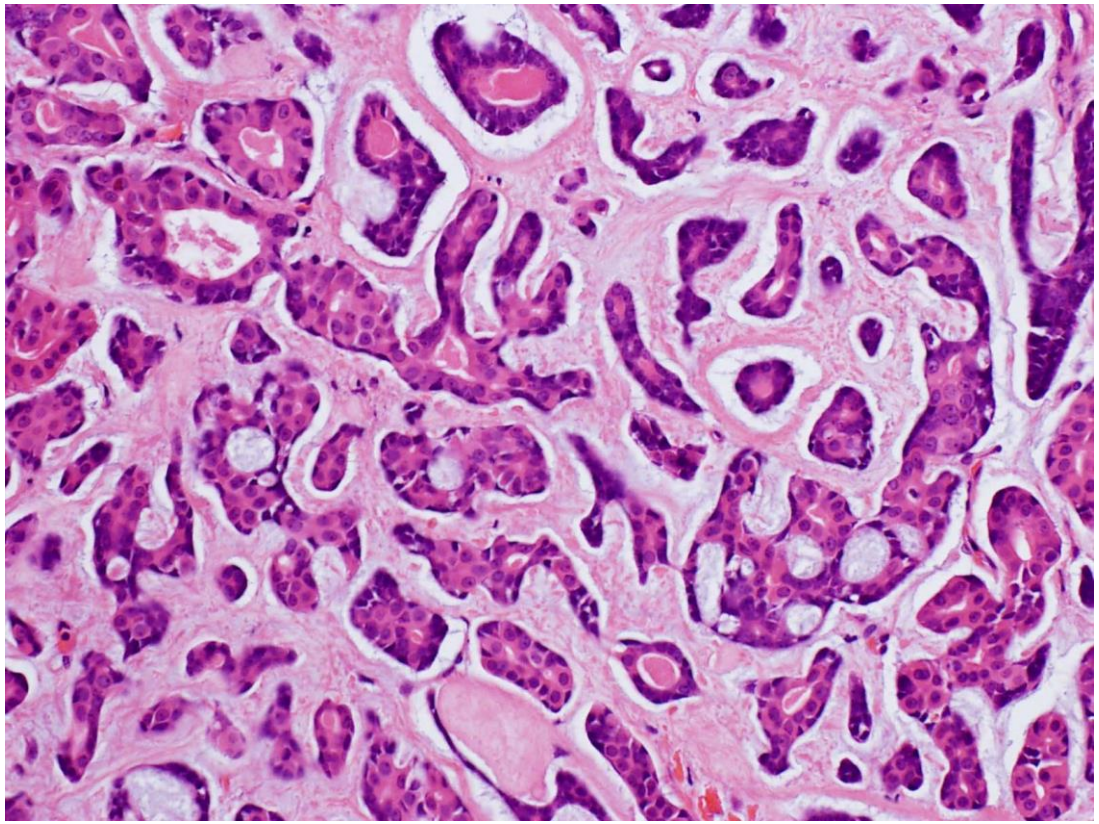
Case 19. 37 female

Left parotid tumour









Diagnosis: Adenoid cystic carcinoma
(Tubular, trabecular and cribriform type)

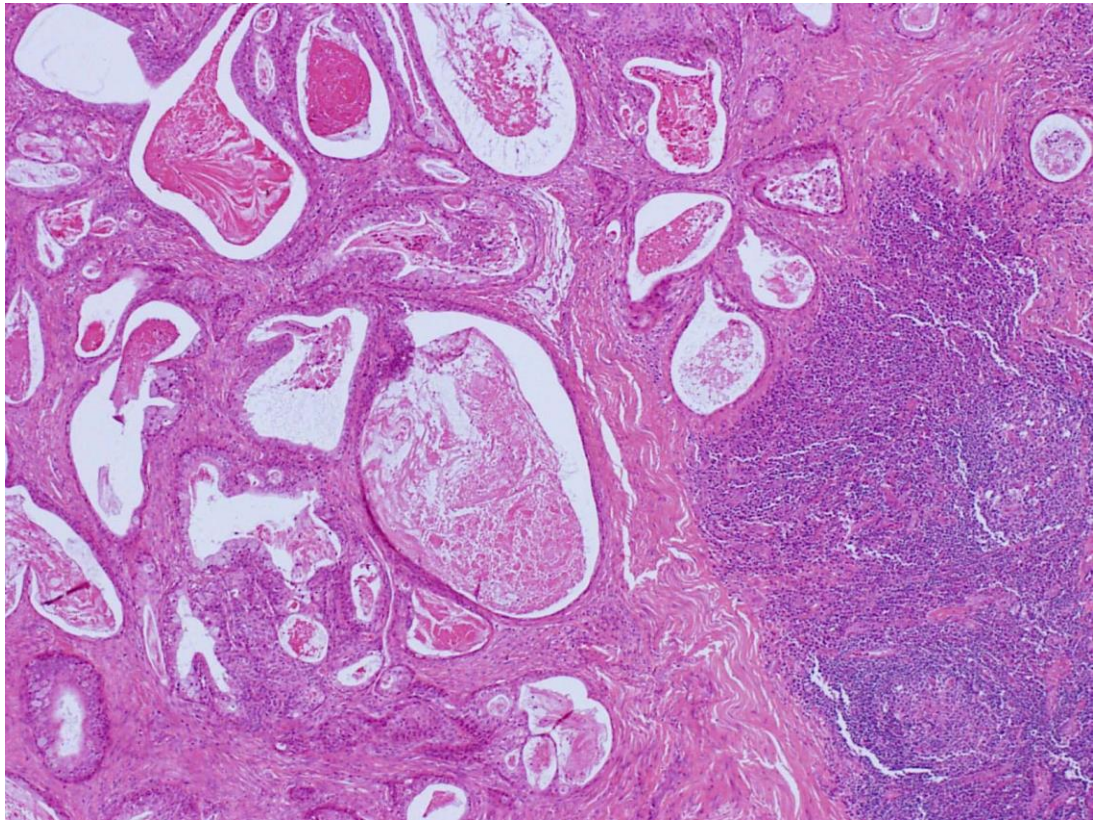
Key facts

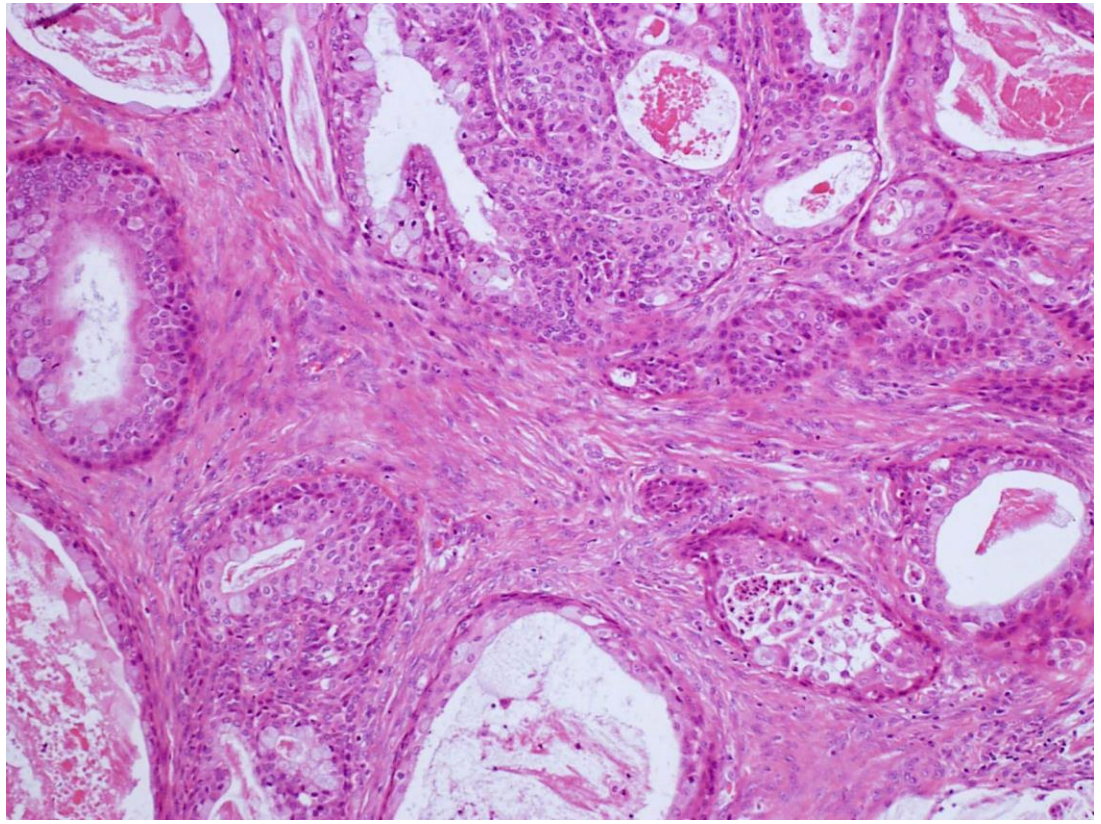
- **<u>Morphologic pattern:</u> Biphasic tumour with epithelial & myoepithelial type cells.**
- **Tubular (Grade I), cribriform (Grade II), solid (Grade III).**
- **Solid component of 30% and over is adverse feature.**
- Slow relentless growth
- Poor long-term prognosis
- **Perineurial invasion**
- Low rate of lymph node metastasis (more common in solid variant)
- Local recurrence, ***Distant metastasis in >50%*** (**lungs**, bone, liver, brain)
- **High grade transformation (nuclear pleomorphism, high mitotic rate, necrosis, loss of biphasic pattern)**
- **<u>Molecular genetics:</u> MYB or MYBL1-NFIB translocation; t(6;9) or t(8;9)**
- **<u>DD: Biphasic growth:</u> Pleomorphic adenoma, Basal cell adenocarcinoma, Epithelial myoepithelial carcinoma**

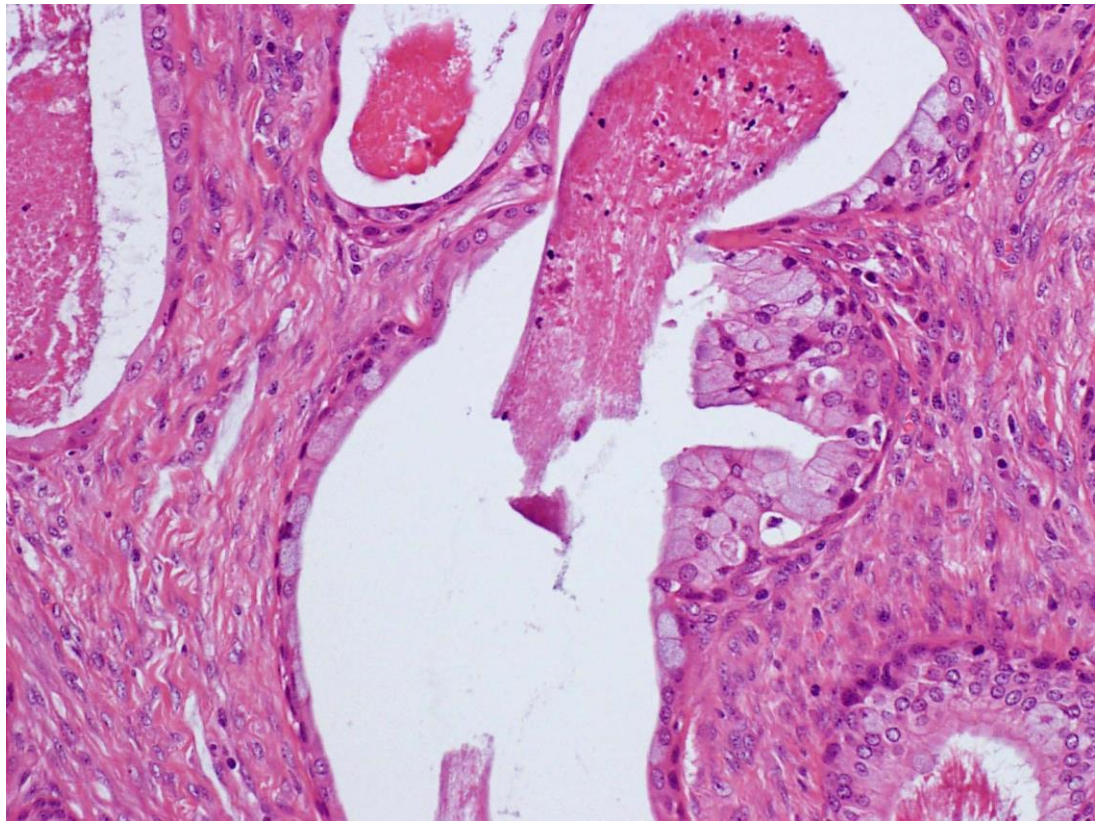
  <u>Basaloid:</u> Basal cell adenoma and carcinoma, Basaloid squamous cell carcinoma

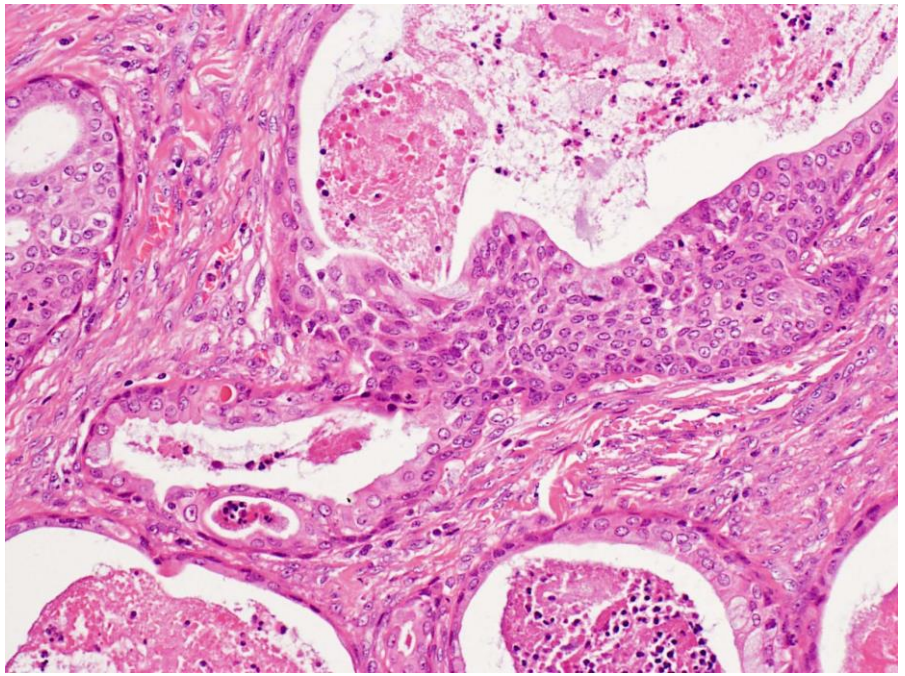
  <u>Cribriform/tubular architecture:</u> Polymorphous adenocarcinoma, Basal cell adenocarcinoma
- Radical surgical excision (with PORT)

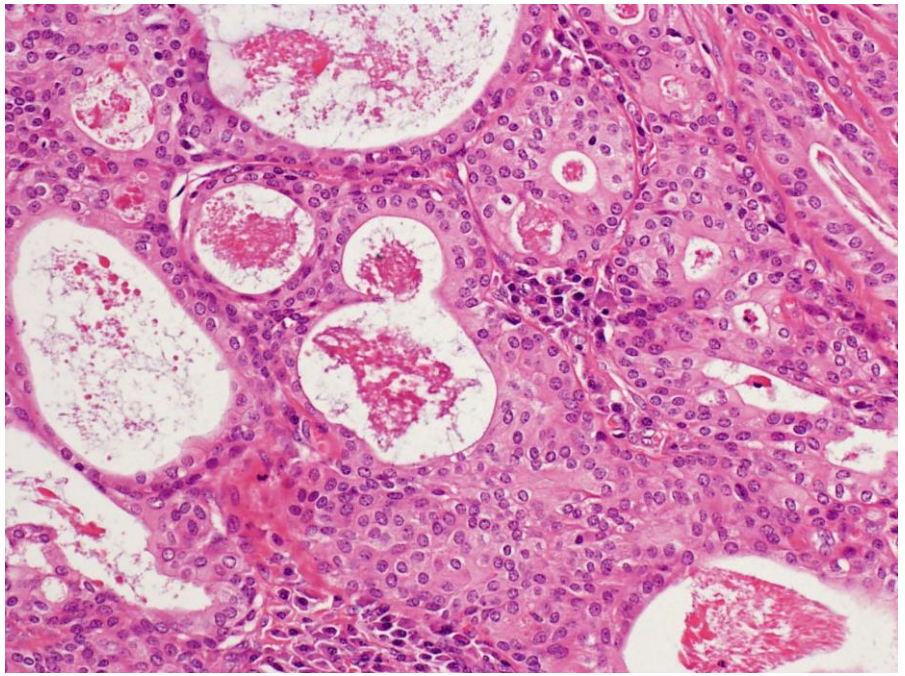
Case 20. 62 female
Right parotid tumour.
History of radiotherapy for right maxillary tumour











Diagnosis: Mucoepidermoid carcinoma

- **Grading of MEC:** AFIP, Brandwein
- **Variants:** Sclerosing with eosinophilia, Clear cell, Oncocytic, Warthin-like
- **Tumour associated lymphoid proliferation (TALP) (mistaken for LN metastasis)**
- **t(11;19)(q21;p13) t(11;15)(q21;q26) CRTC1-MAML2, CRTC3-MAML2**
- **DD:** Squamous cell carcinoma, Adenosquamous carcinoma, Necrotising sialometaplasia,, Pleomorphic adenoma, Sclerosing polycystic adenosis, Warthin tumour, Sclerosing sialadenitis

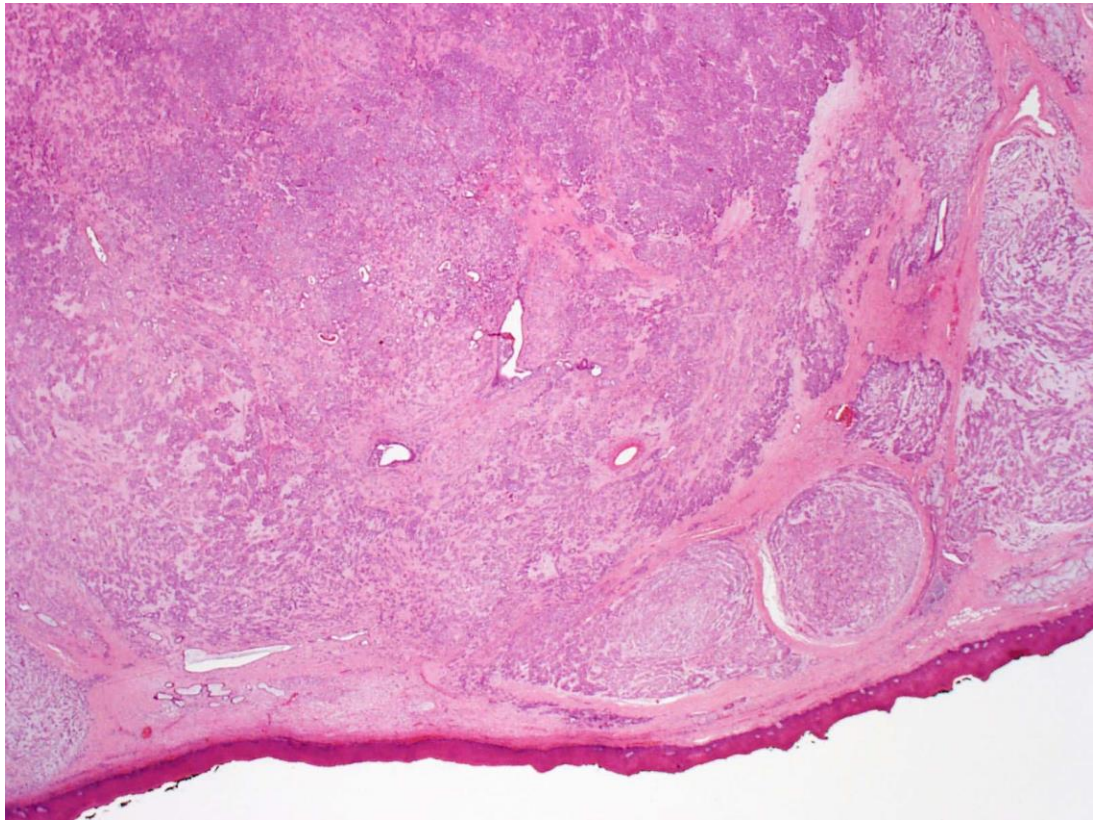
Grading of Salivary gland tumours

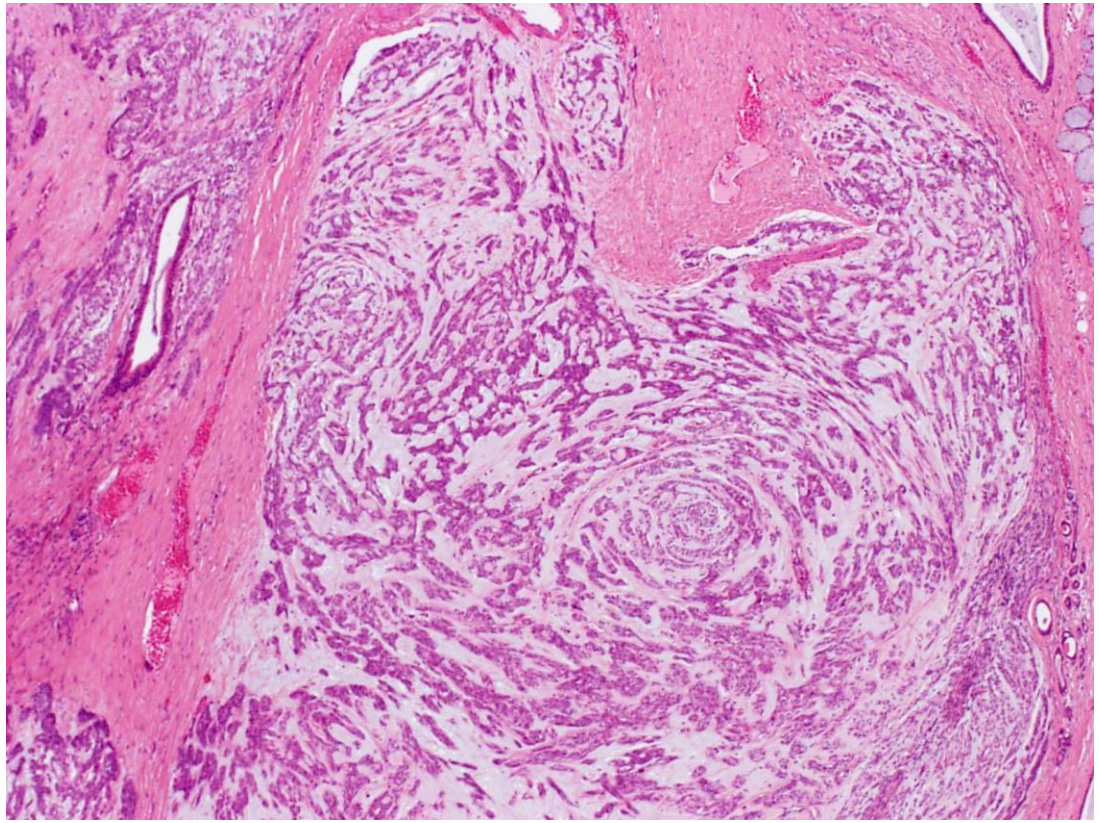
MUCOEPIDERMOID CARCINOMA

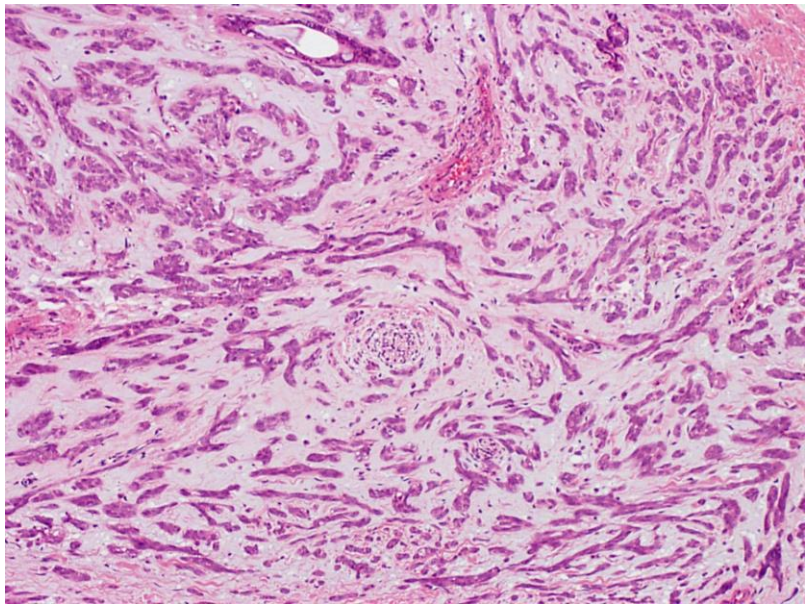
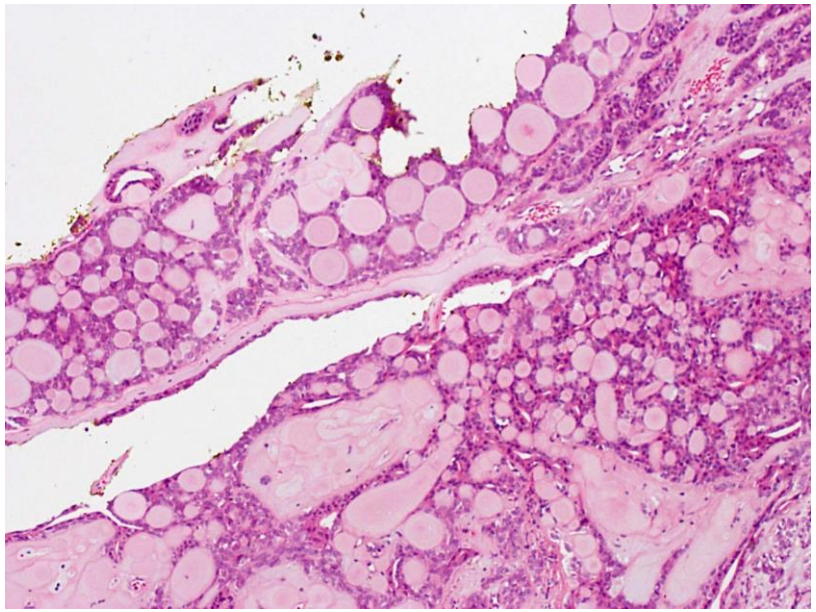
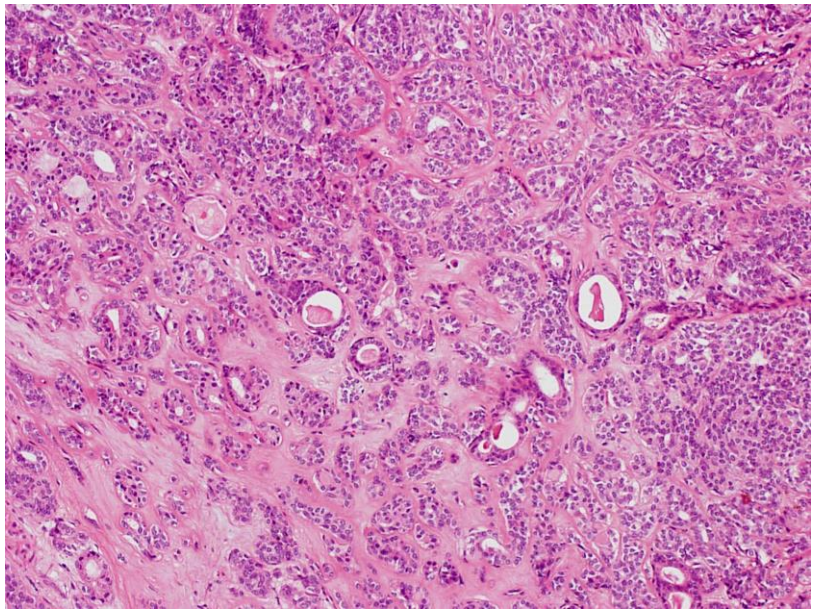
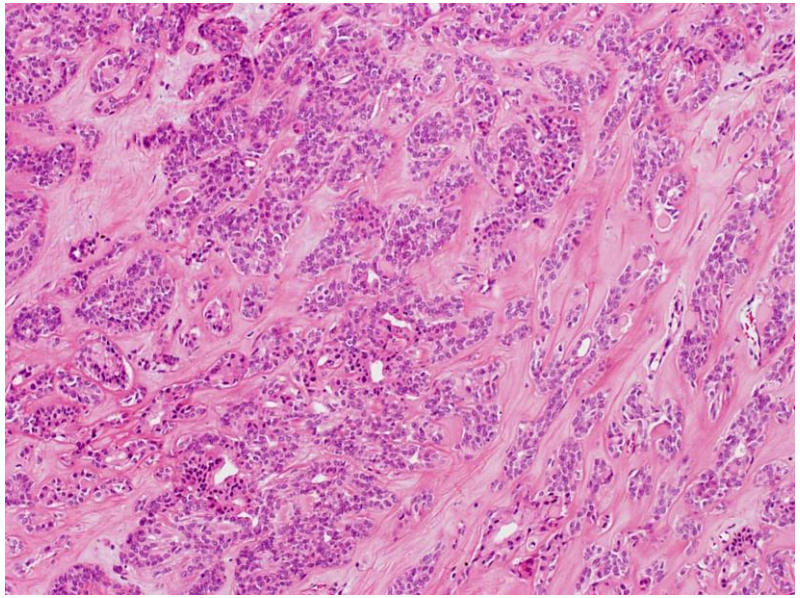
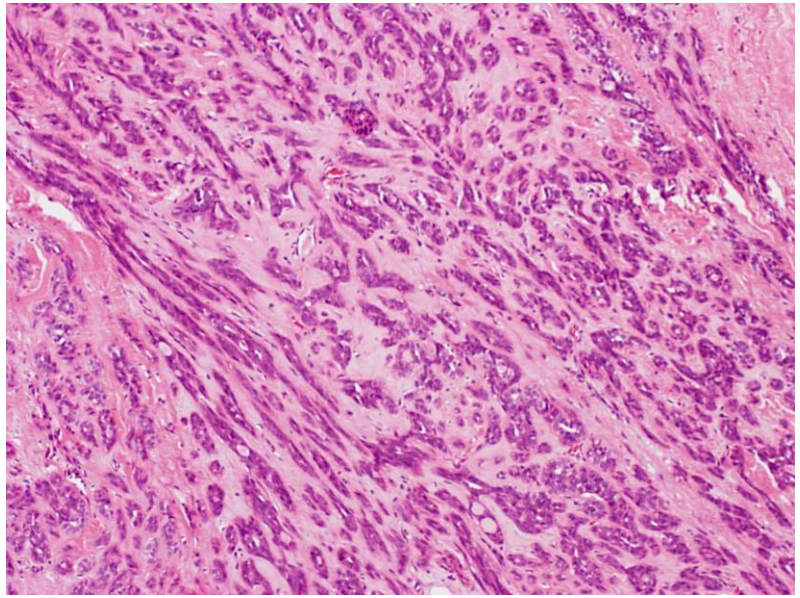
AFIP	Brandwein
Intracystic component <20%=2 pts	Intracystic component <25%=2 pts
Neural invasion present=2pts	Tumor invades in small nests and islands=2 pts
Necrosis present=3 pts	Pronounced nuclear atypia=2 pts
Mitosis (4 or more per 10HPF)=3pts	Lymphatic and/or vascular invasion=3 pts
Anaplasia=4 pts	Bony invasion=3 pts
	>4mitoses/10 HPF=3 pts
	Perineural spread=3 pts
	Necrosis=3 pts

AFIP	Brandwein
Low grade=0-4 pts	Low grade=0 pts
Intermediate grade =5-6 pts	Intermediate grade=2-3 pts
High grade=7-14 pts	High grade=4 or more pts

Case 21. 60 female
Left posterior palate tumour



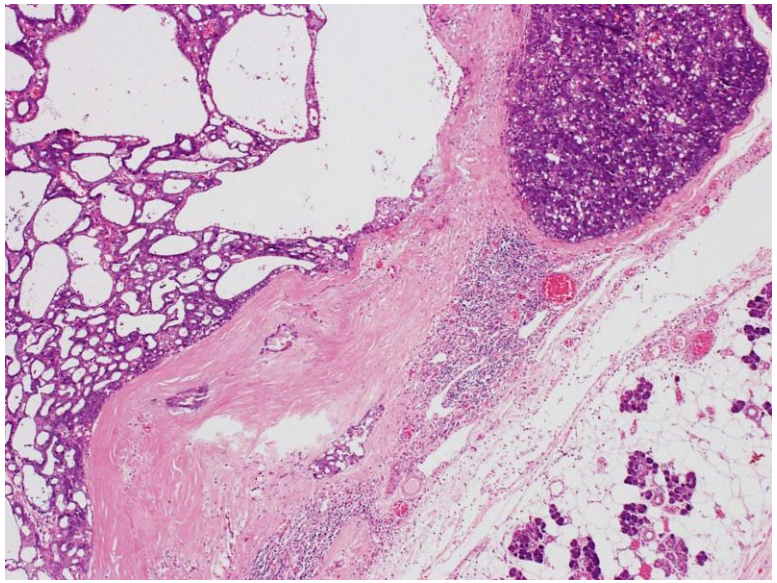


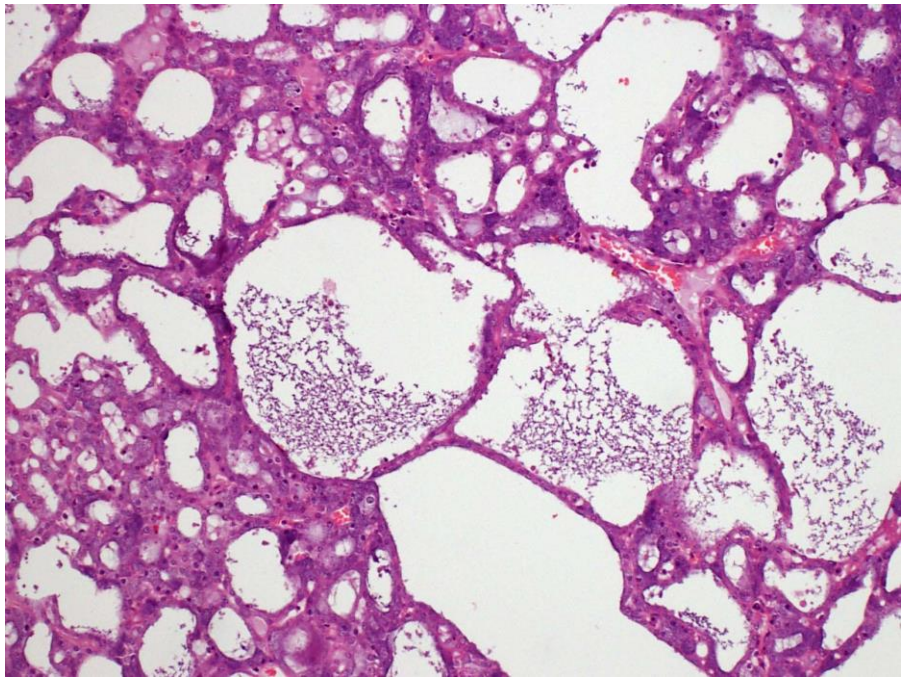






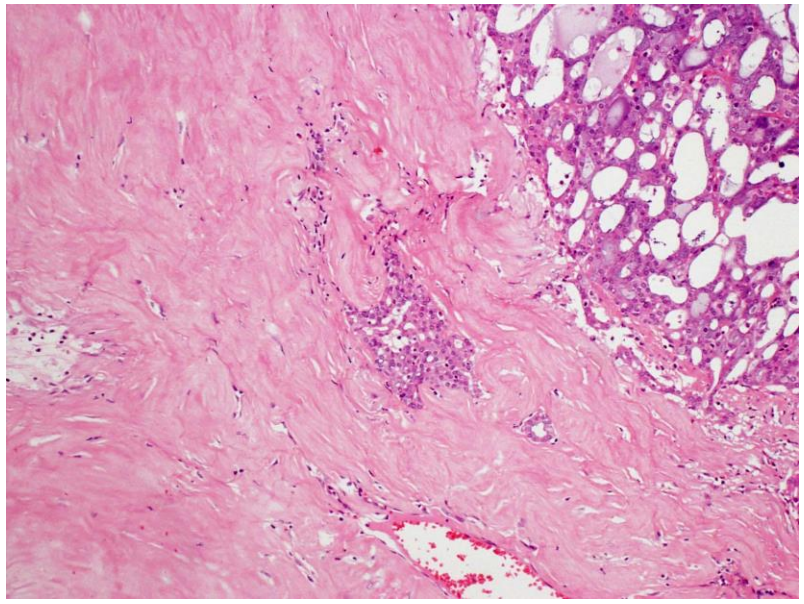
Diagnosis: Polymorphous adenocarcinoma

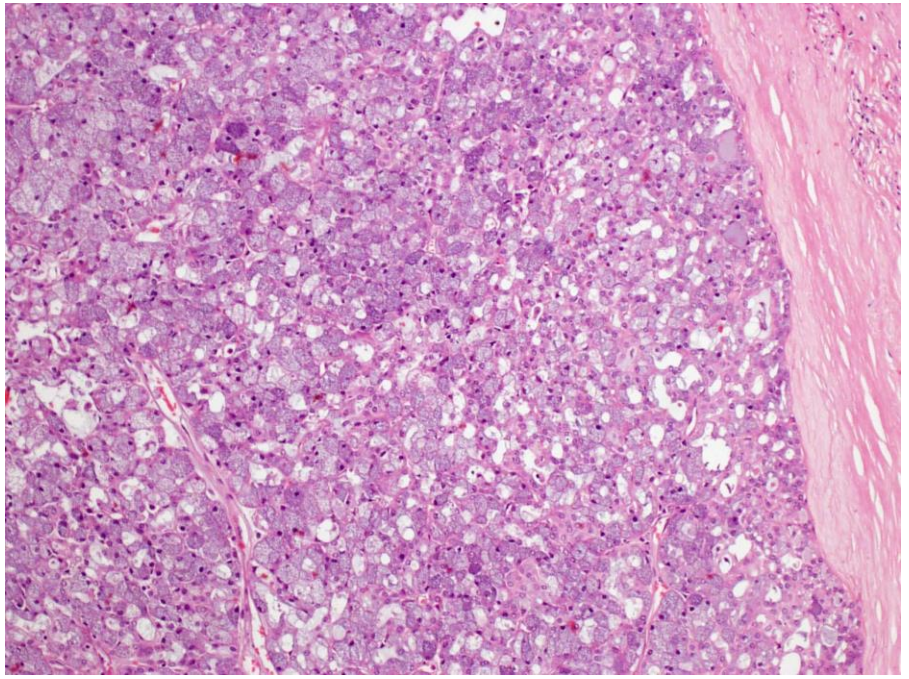
- **Uniform cytology, polymorphous, infiltrative, perineurial invasion**
- **Targetoid, lobular, trabecular, microcystic (cribriform), papillary cystic, solid; Mucinous / hyalinized stroma**
- **Minor glands (uncommon in major)**
- **Also includes Cribriform adenocarcinoma of minor glands and tongue (greater proportion of lymph node metastasis; nuclear features of papillary thyroid carcinoma, glomeruloid pattern)**
- **Immunohistochemistry: CK7+, S100+, p63+, P40negative.**
- High grade type
- **DD: Pleomorphic adenoma, Adenoid cystic carcinoma**

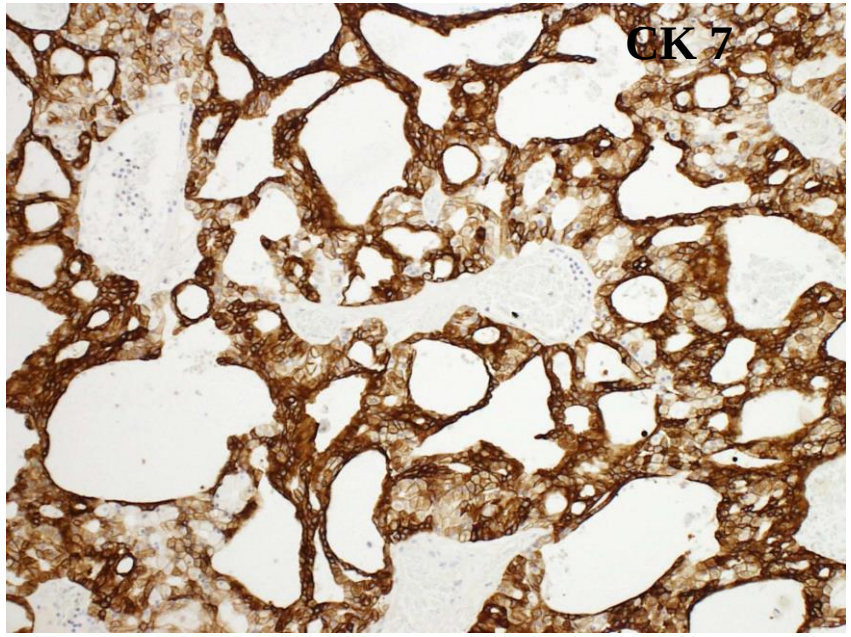
Case 22. 56 female
Left parotid tumour

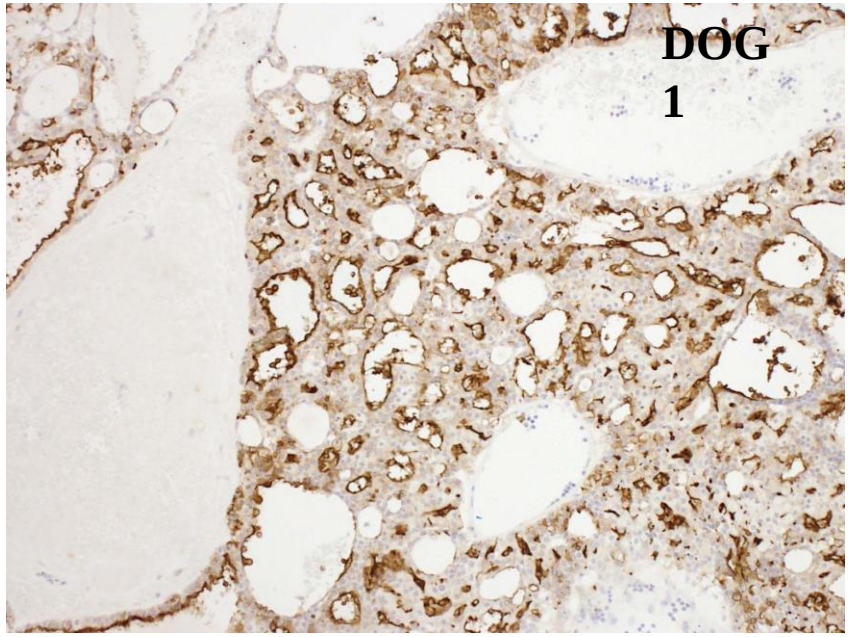


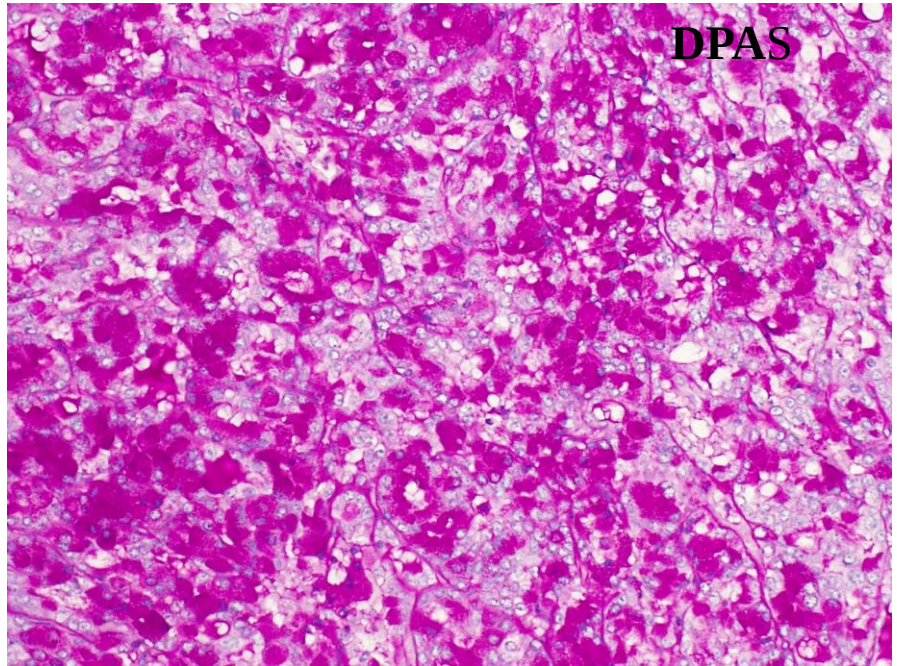







CK 7


DOG
1

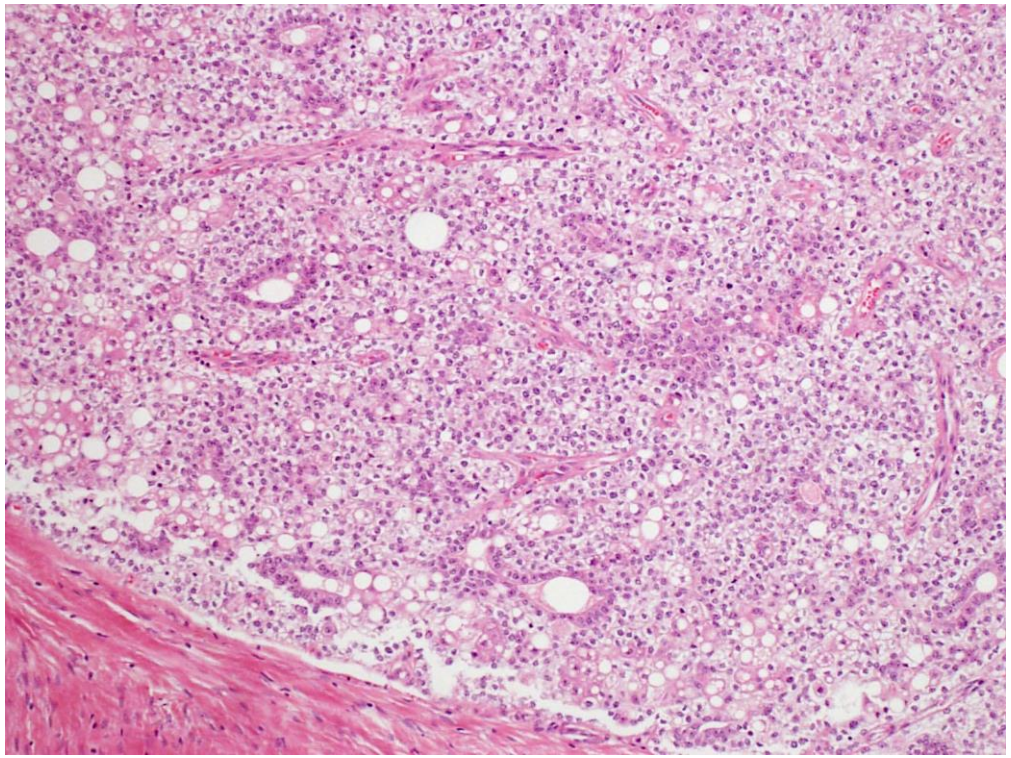

DPAS

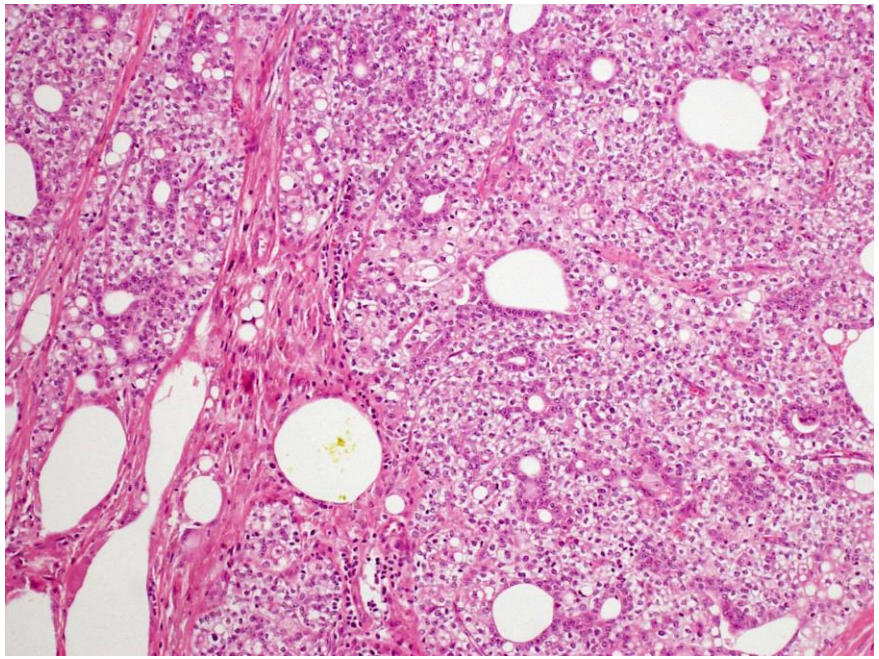
Diagnosis: Acinic cell carcinoma

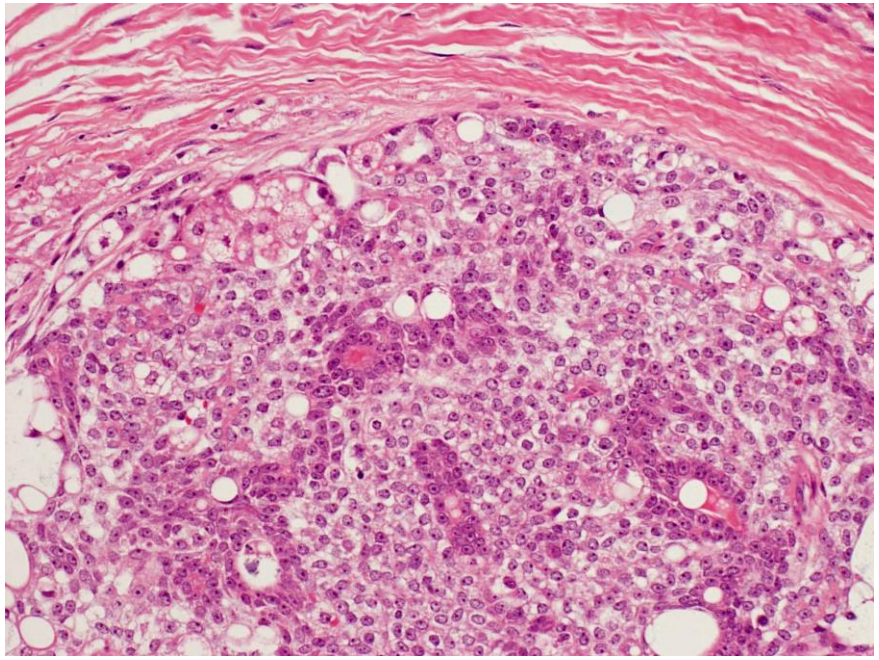
- Can be seen in children (2nd after MEC)
- Morphological types: Solid, microcystic, papillary cystic, follicular
- **Tumour-associated lymphoid proliferation**
- **Acinar cell poor types likely to be Secretory carcinoma (MASC), which can be proven by ETV6 NTRK3 translocation.** Acinic is negative for mammaglobin
- High grade transformation

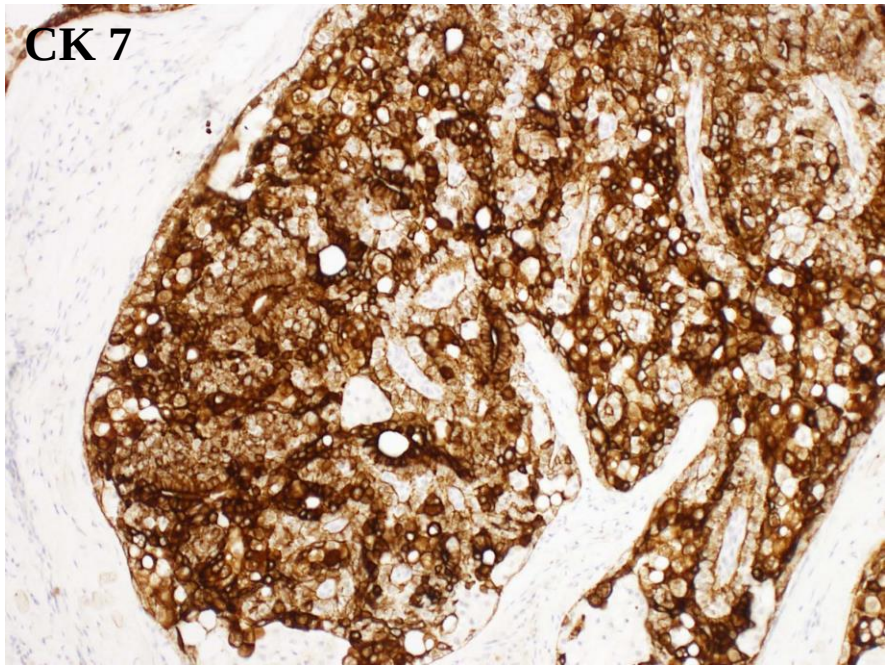
Case 23. **67 male**

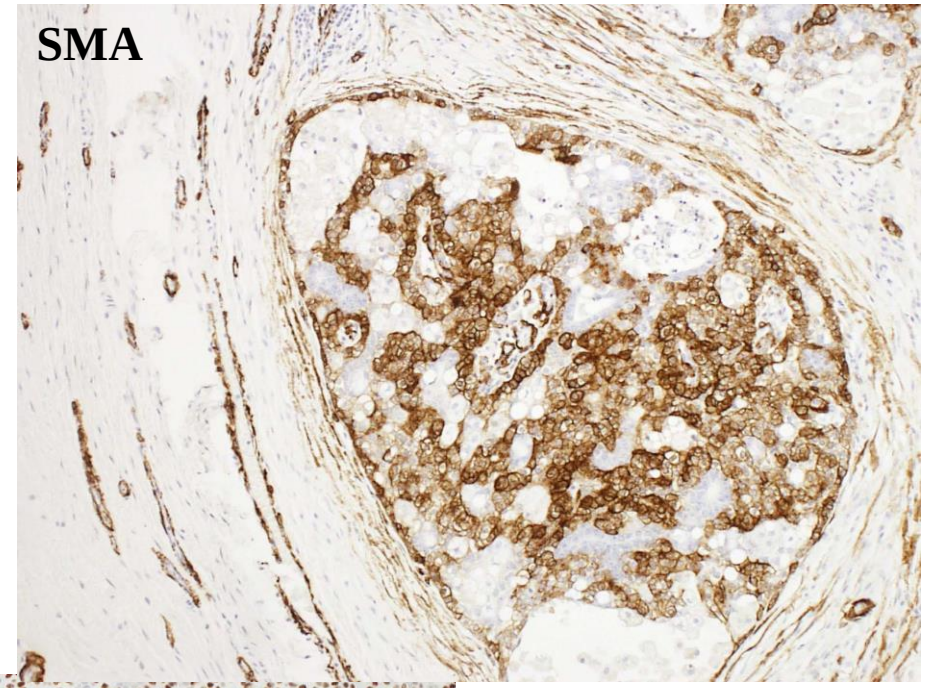
Right parotid tumour

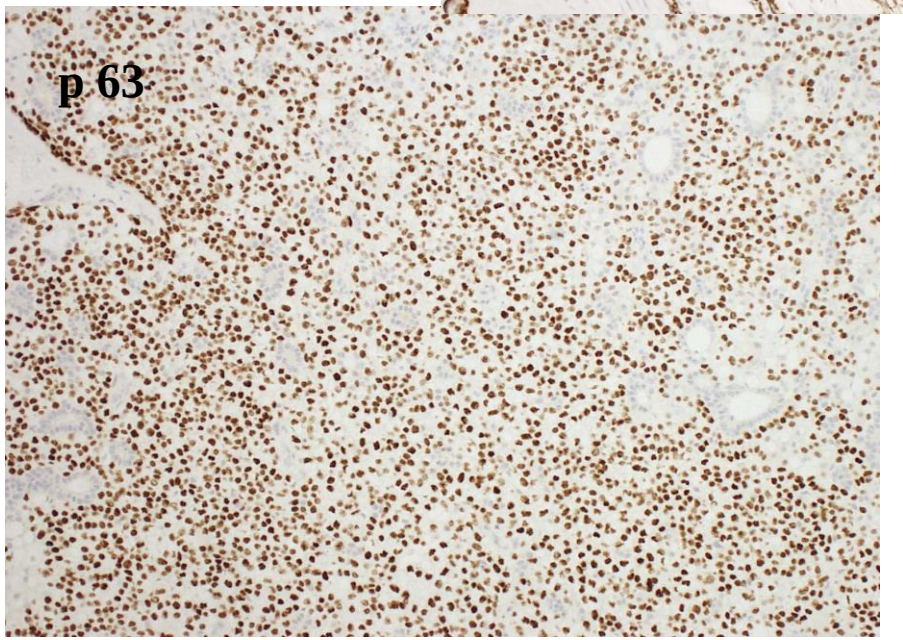







CK 7

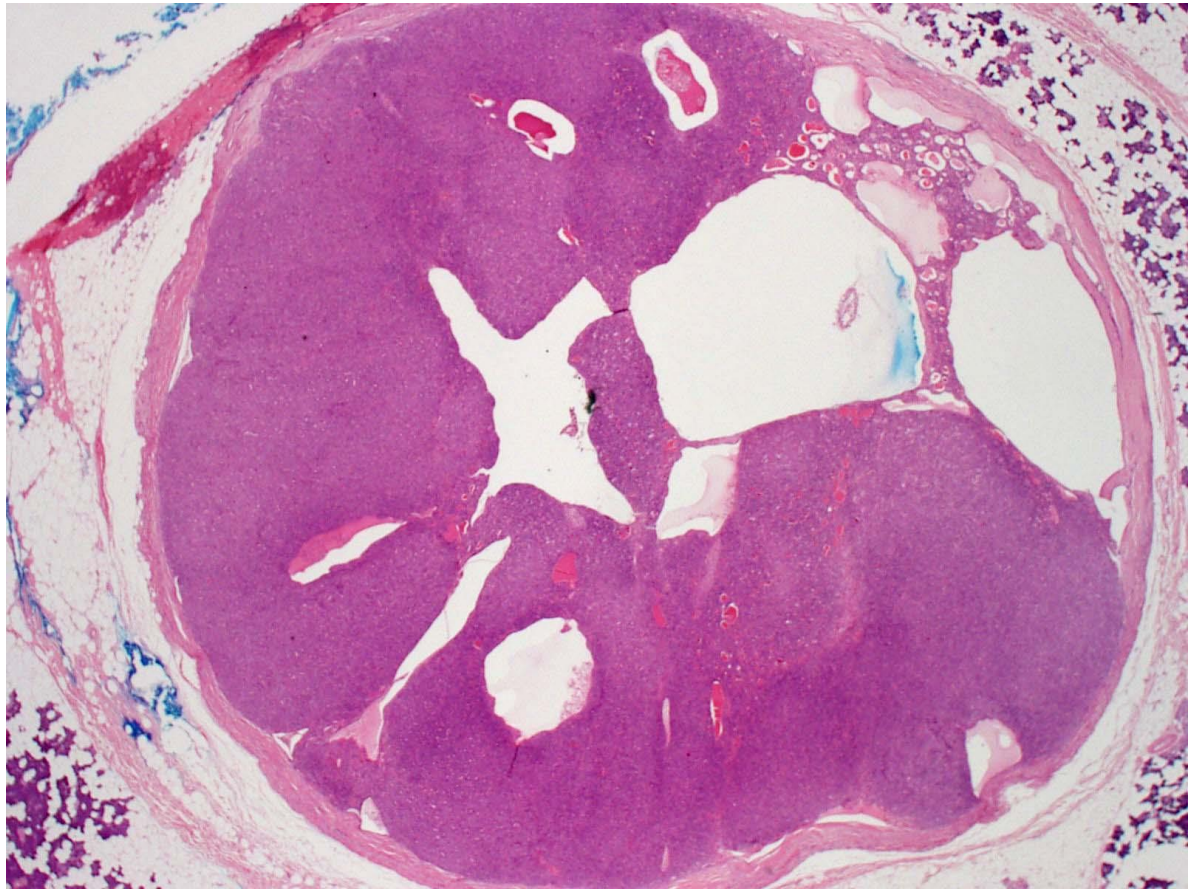

SMA

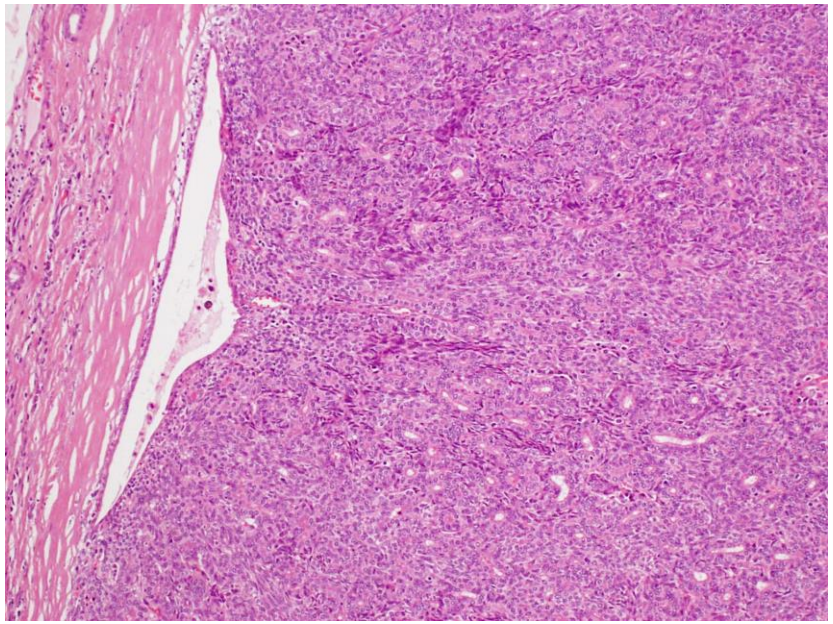

p 63

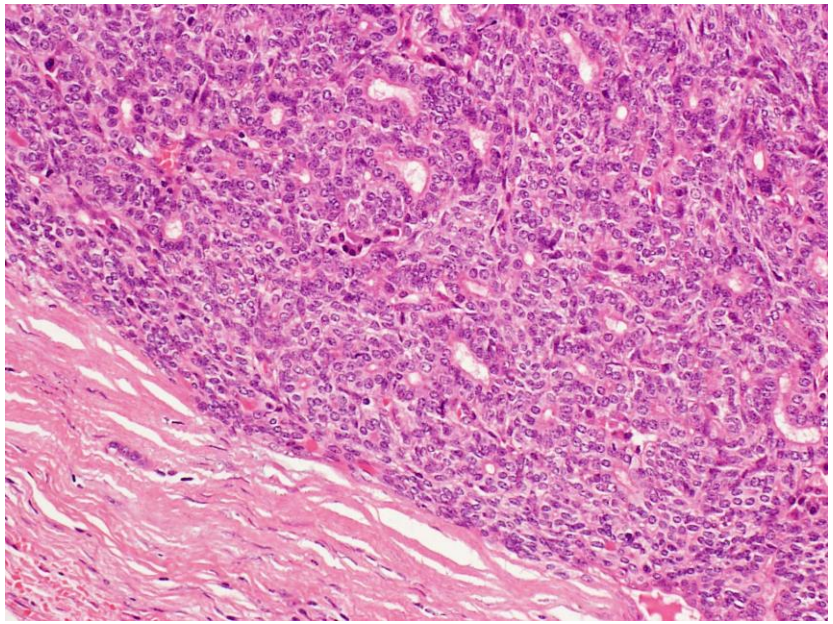
Diagnosis: Epithelial myoepithelial carcinoma

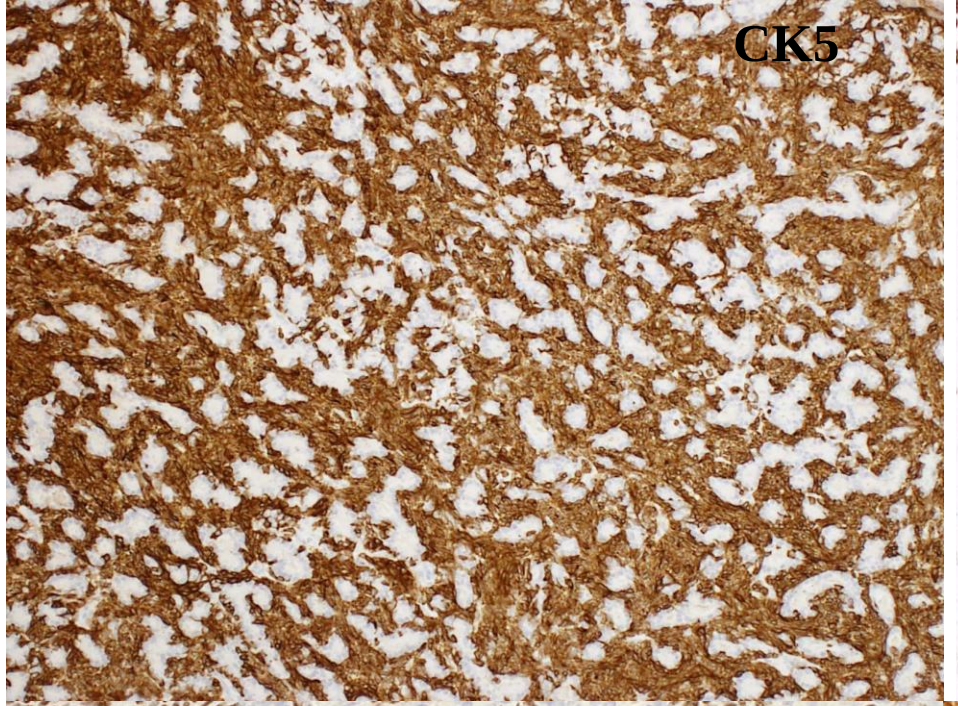
- Low grade
- Variant types: Clear, Oncocytic, Sebaceous, Spindle cell type
- More common in major glands
- Can be multinodular, perineurial invasion, larger myoepitheal clls and can appear as clear cell tumour with attenuated luminal cells.
- High grade transformation
- **<u>DD:</u> Adenoid cystic carcinoma, pleomorphic adenoma, clear cell carcinoma, clear cell variant of myoepithelial carcinoma (EWSR1-ATF1 gene fusion in clear cell carcinoma and some clear cell MEC)**

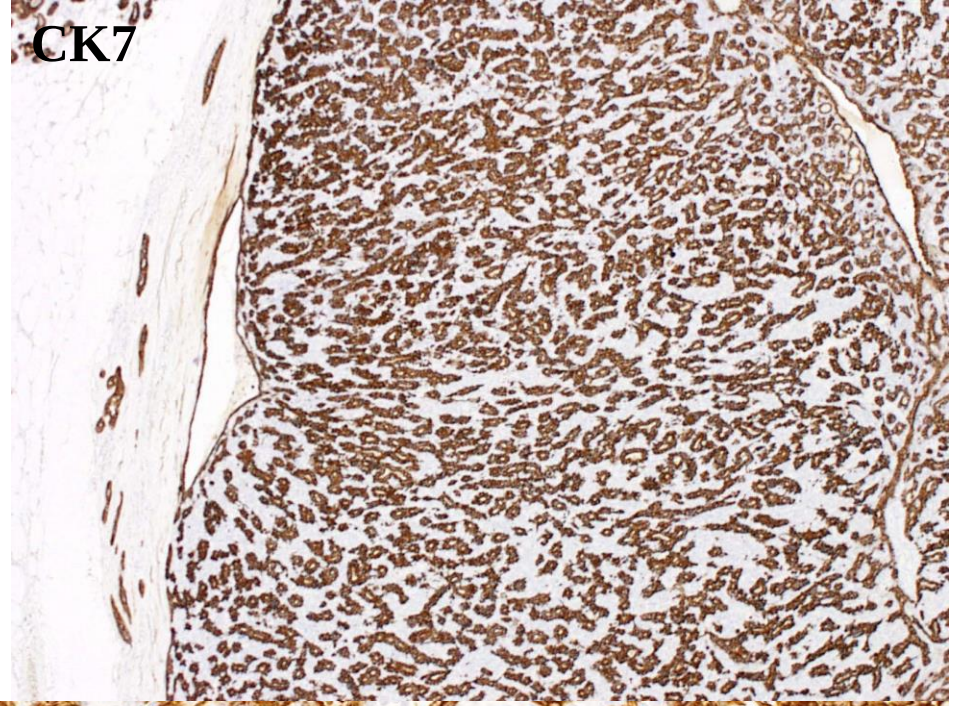
Case 24. 36 male
Left parotid tumour

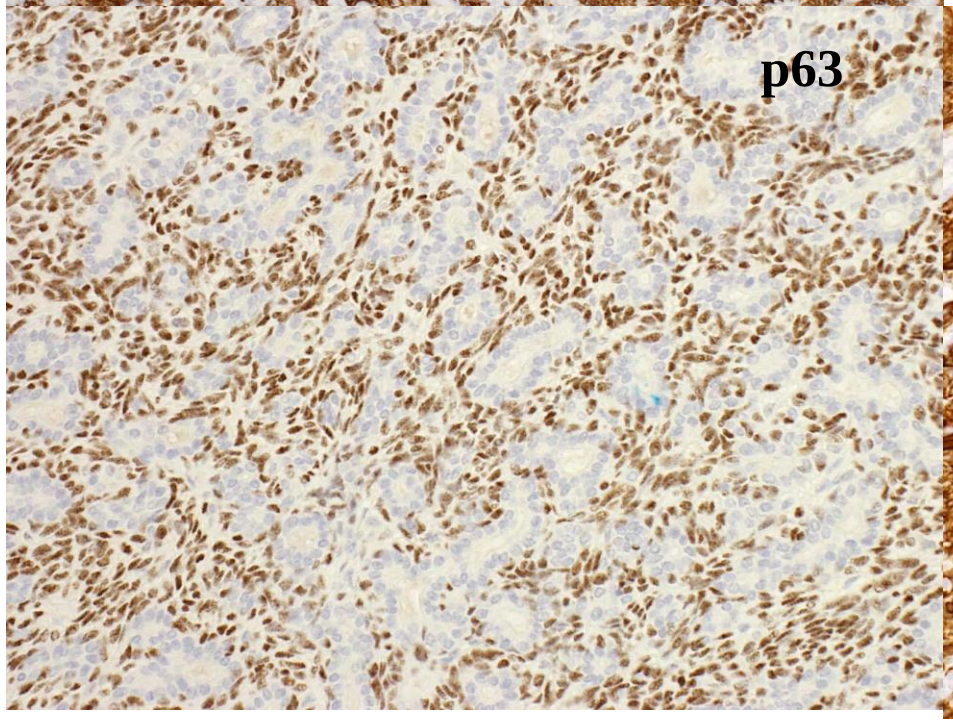







CK5


CK7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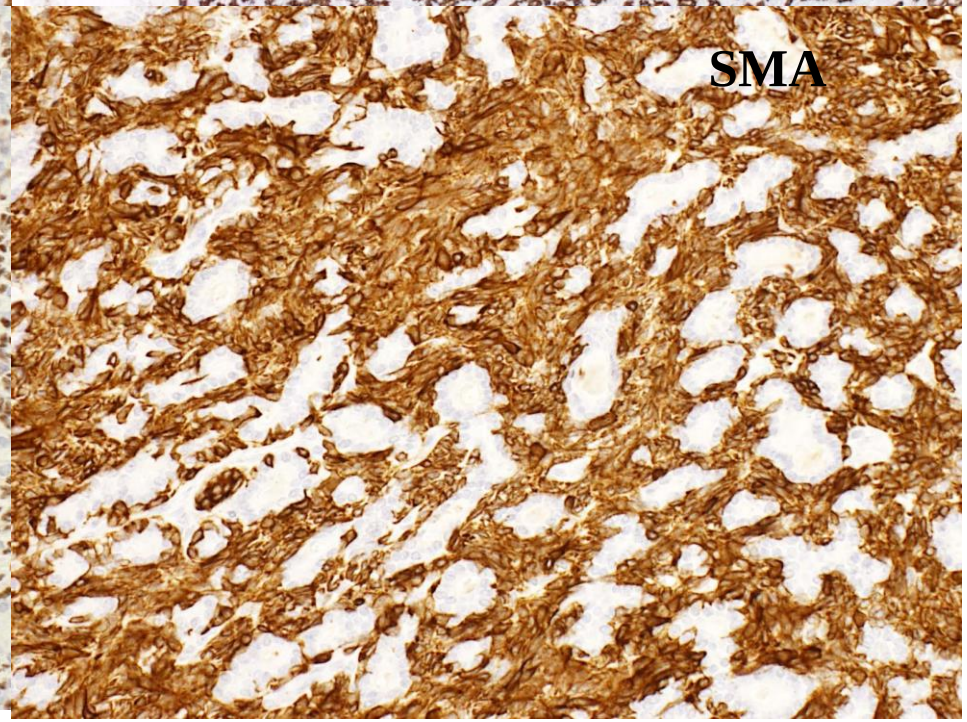
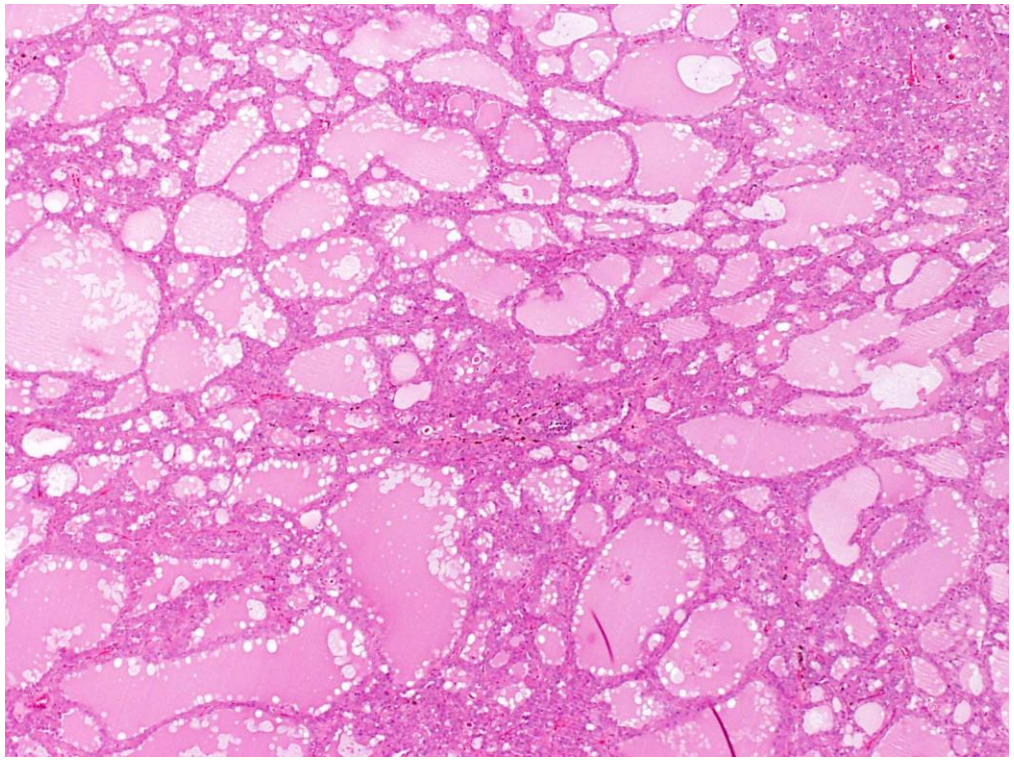
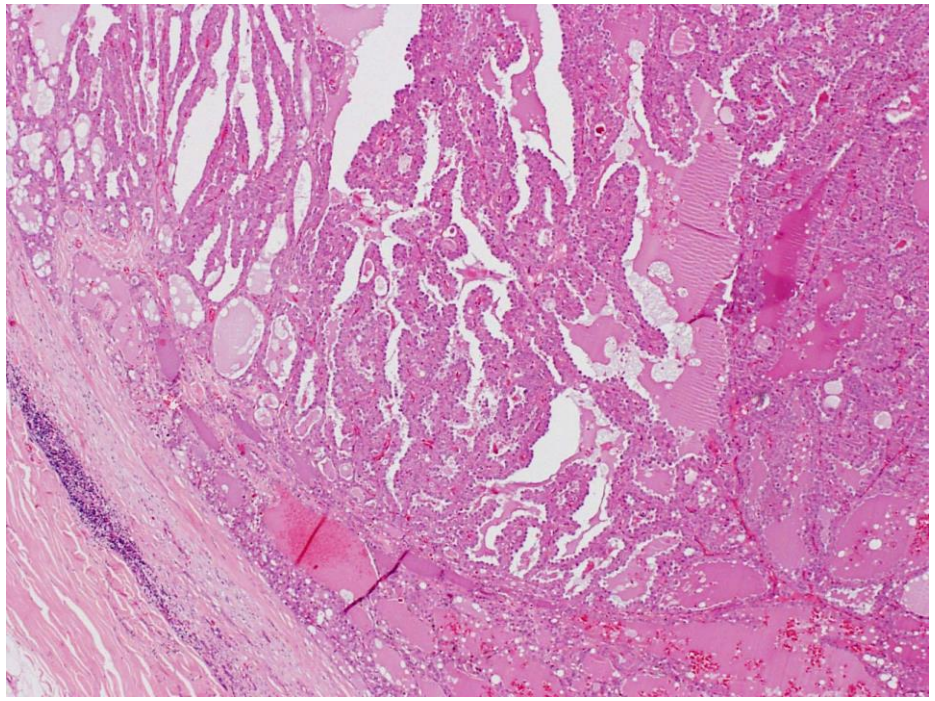

SMA

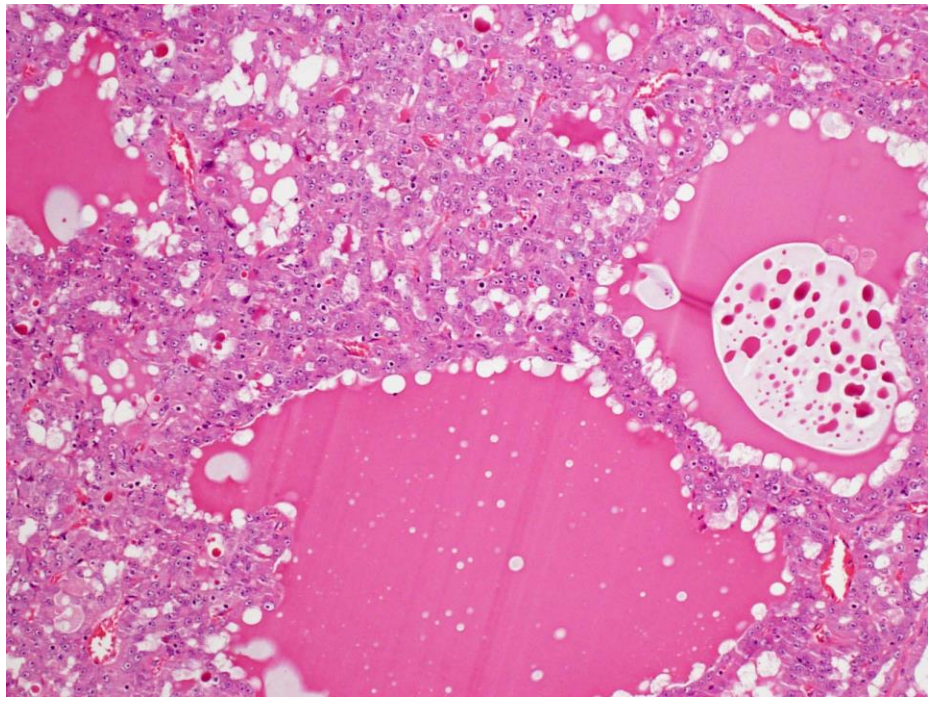
Diagnosis: Basal cell adenoma,, tubular type

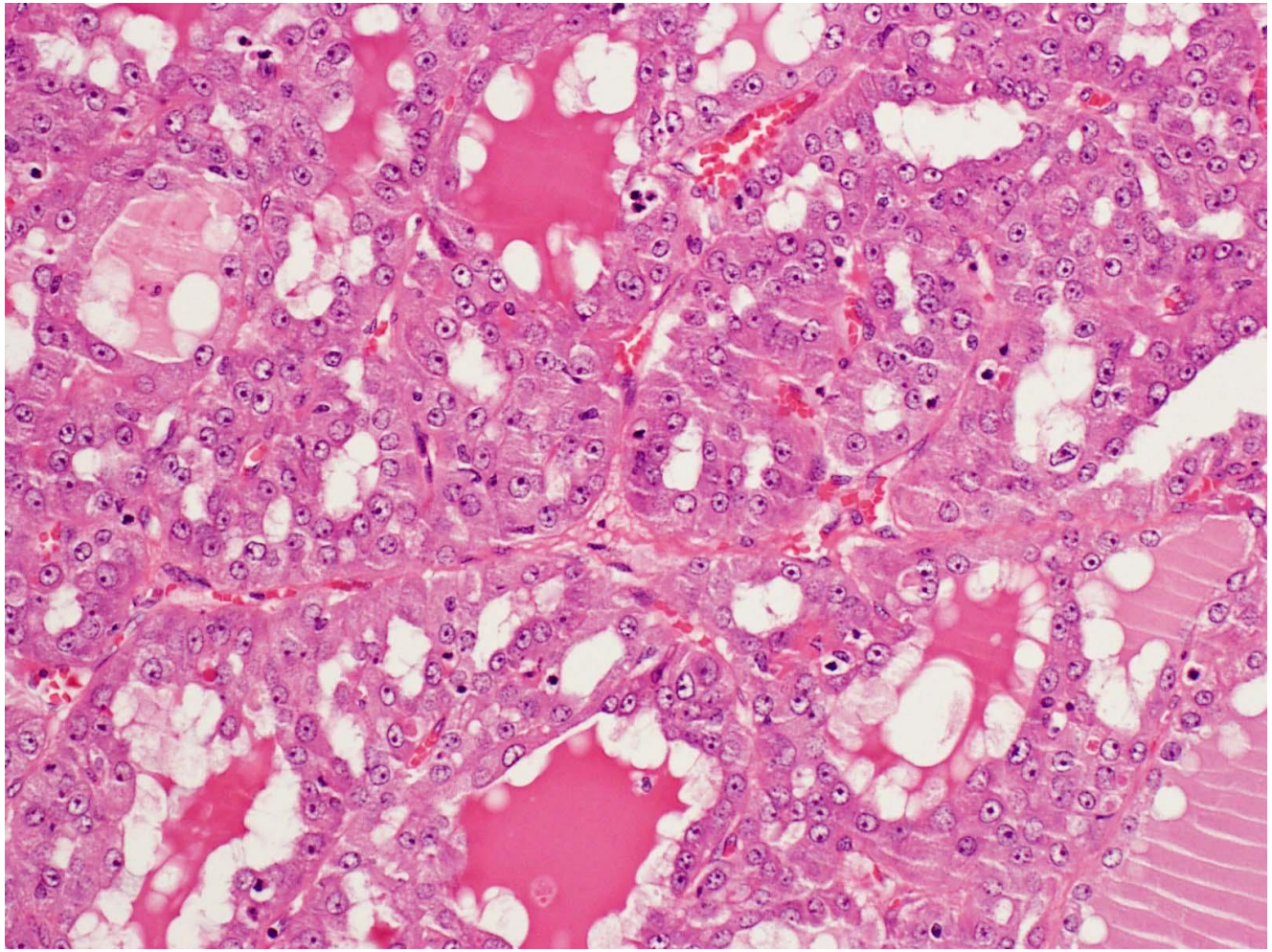
- Biphasic salivary tumour. Immunohistochemistry highlights luminal and abluminal composed of both basal type and myoepithelial type cells
- Solid, tubular, trabecular, membranous
- Peripheral palisading, hyaline intercellular deposits
- CTNNB1, Cyclin D1 mutations
- Membranous type: Syndromic (with skin trichoepitheliomas)
- **Basal cell adenocarcinoma:** Low grade malignancy, sometimes bland cytology; invasion and perineurial invasion.

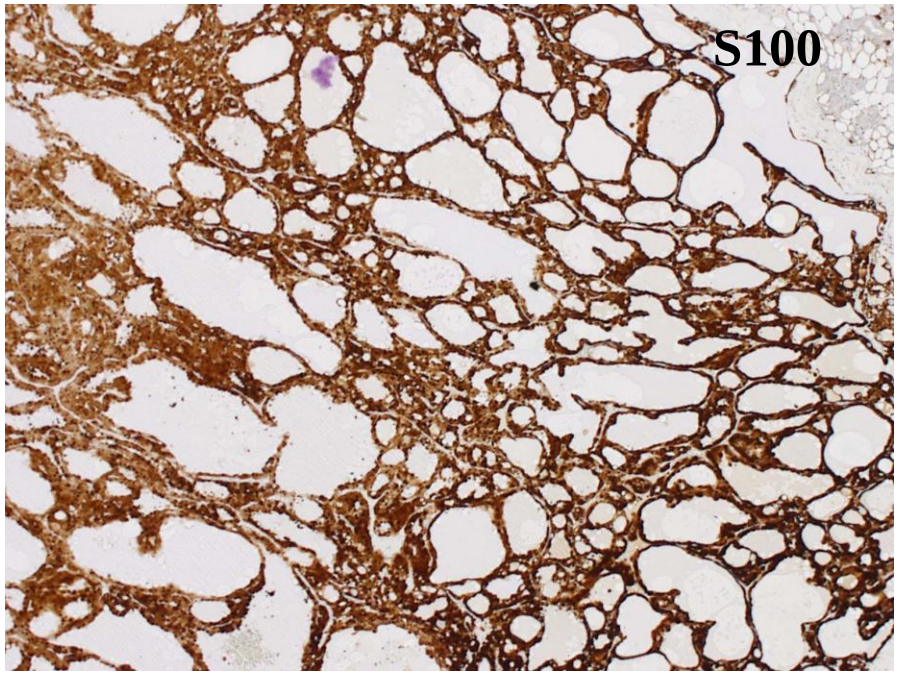
Case 25. 72 male
Right parotid tumour

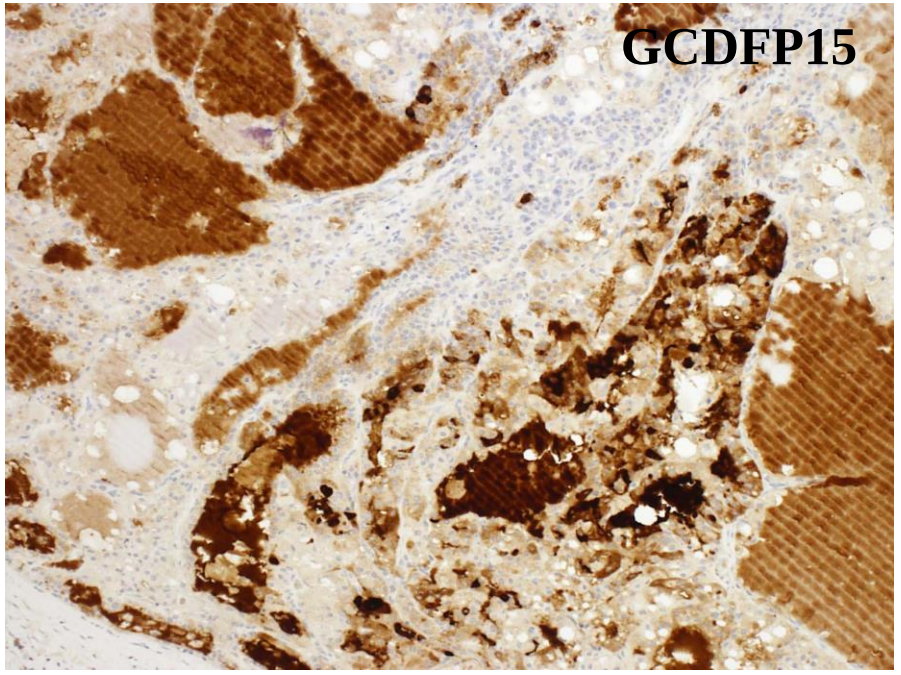




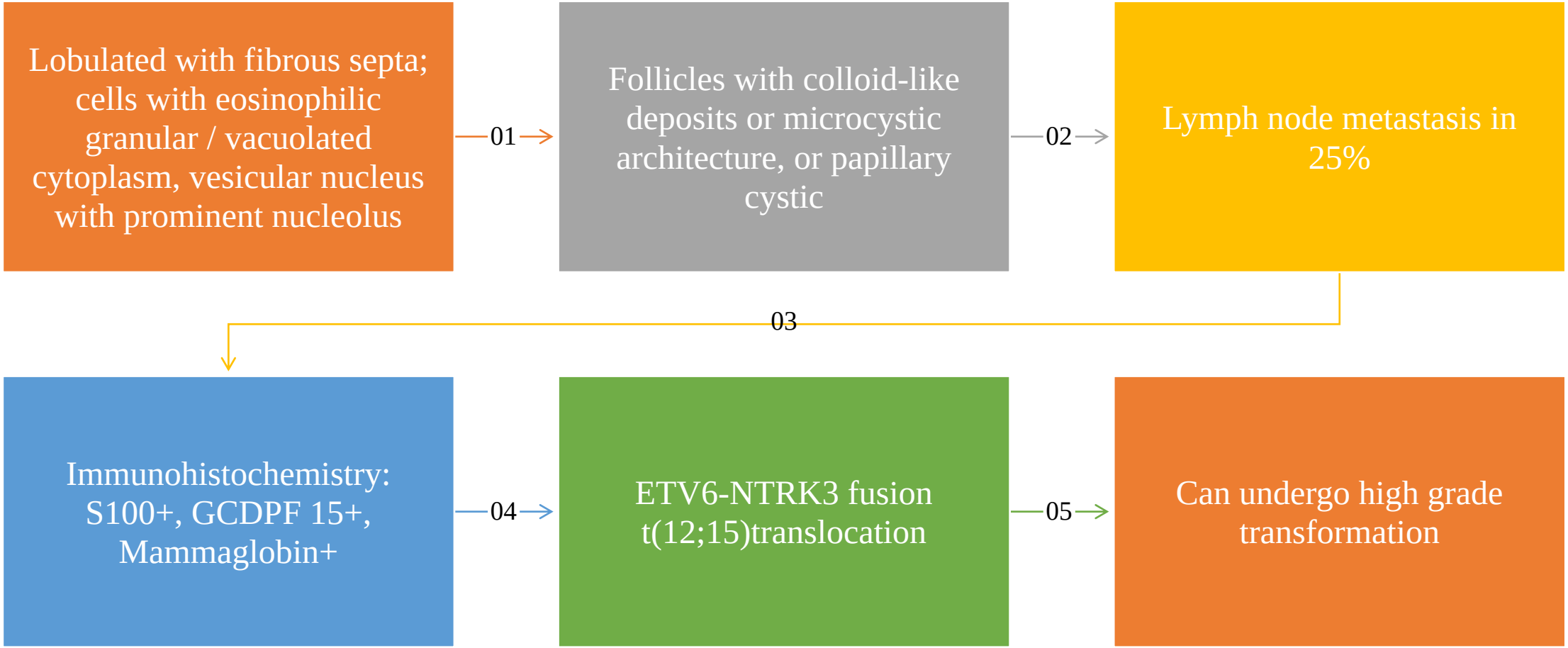




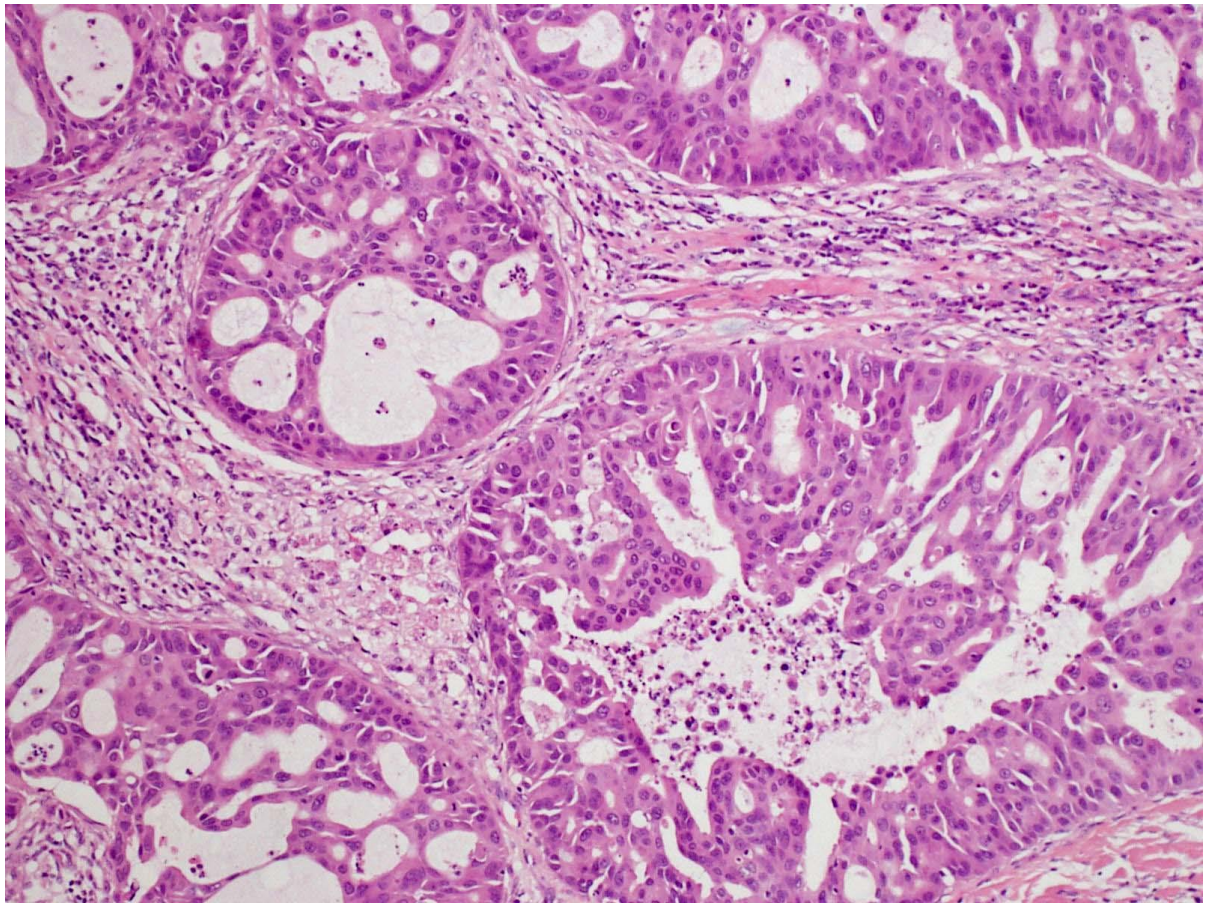

S100

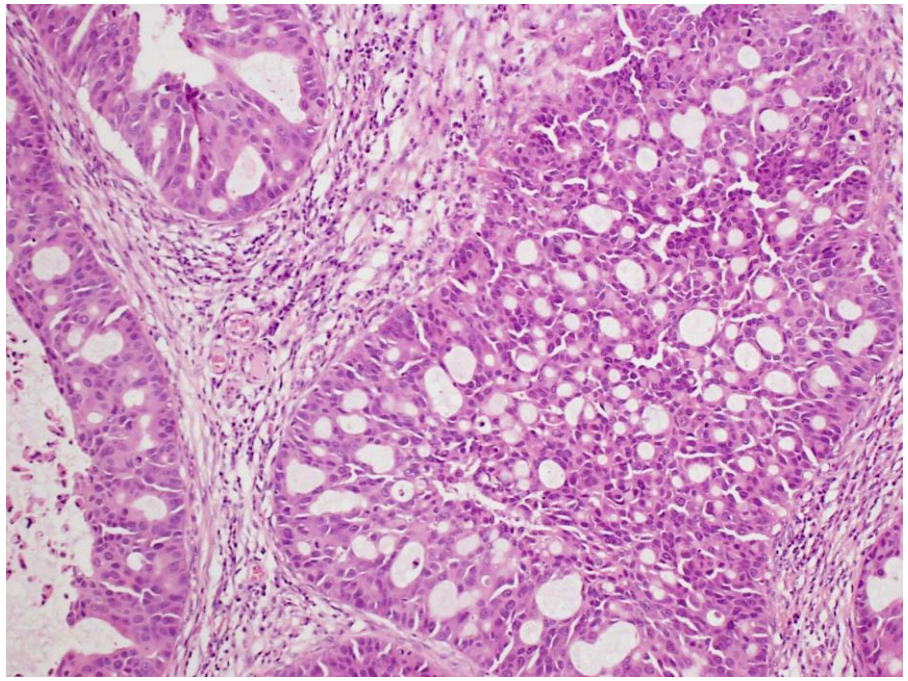

GCDFP15

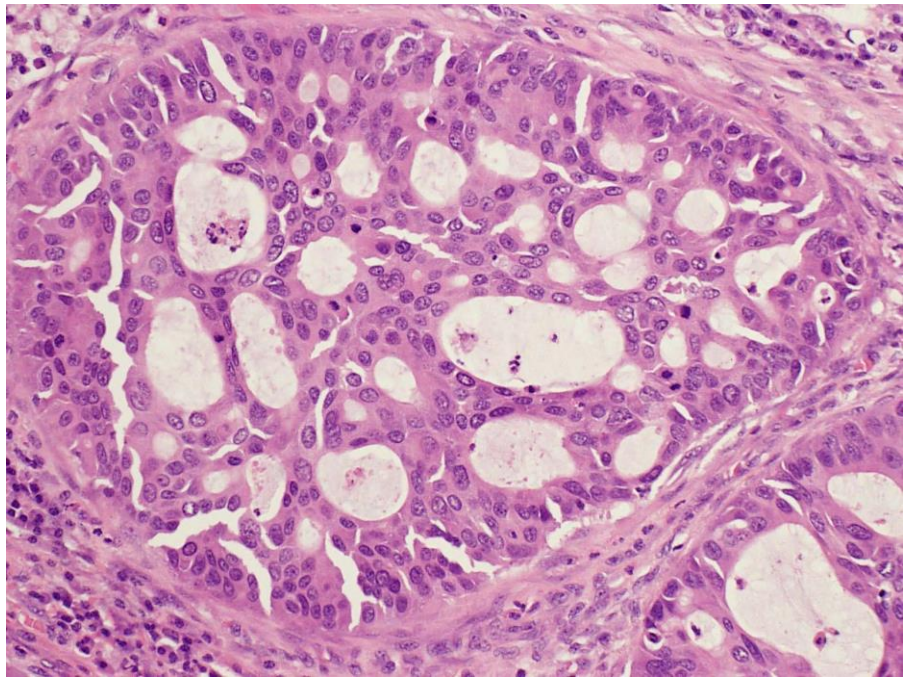
Diagnosis: Secretory carcinoma (Mammary analogue secretory carcinoma)



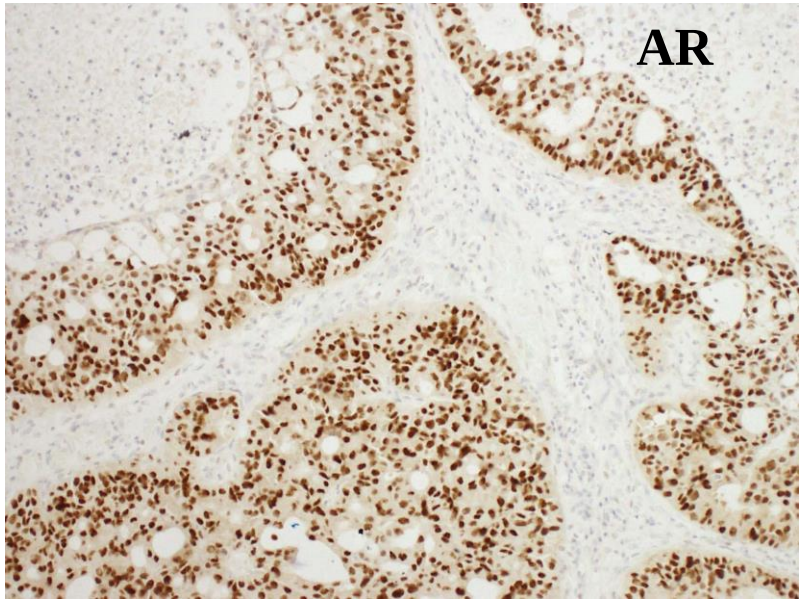
Case 26. 64 male
Right parotid tumour

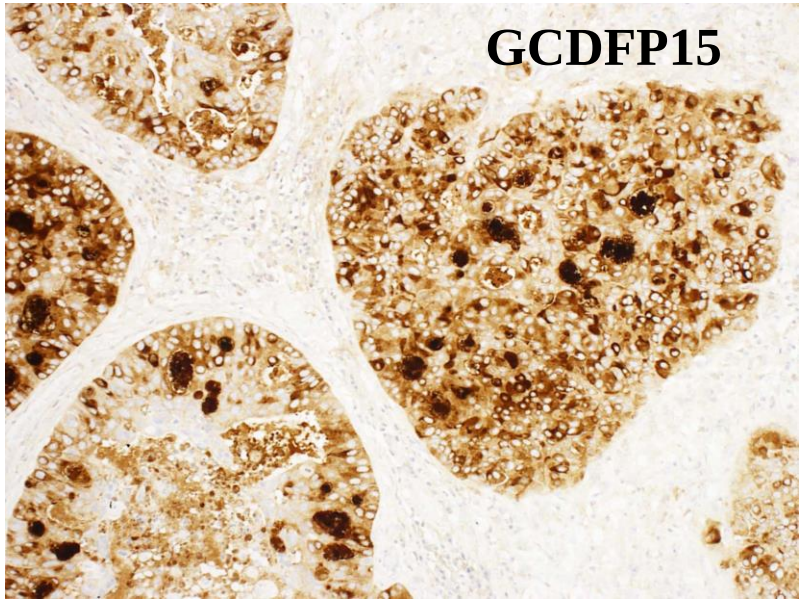


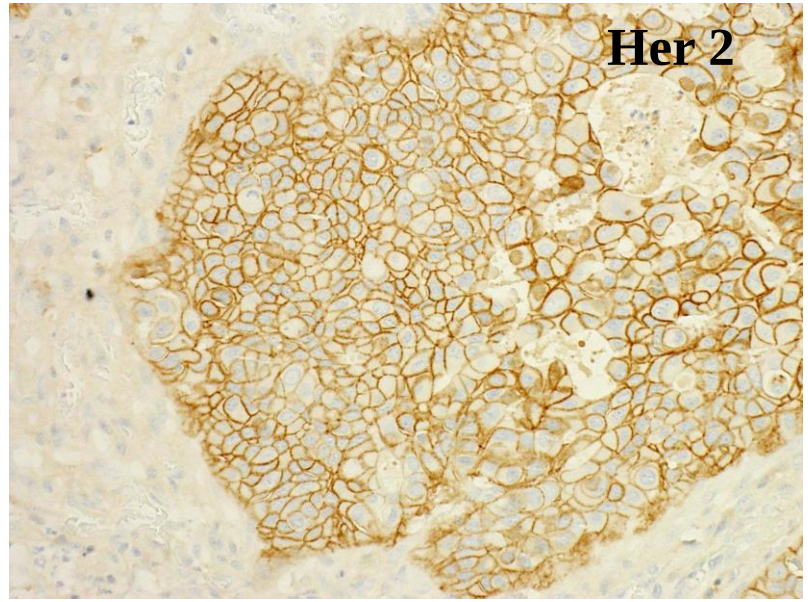




Immunohistochemistry



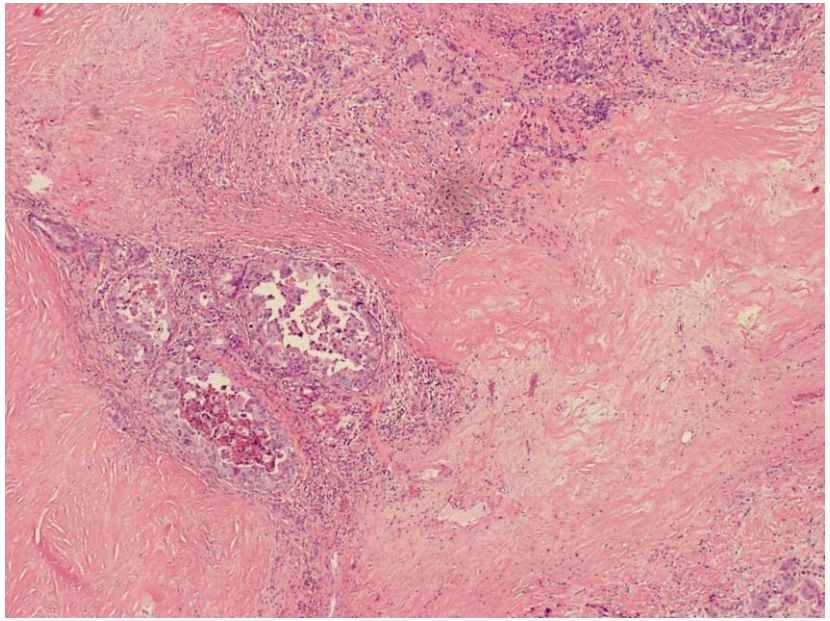
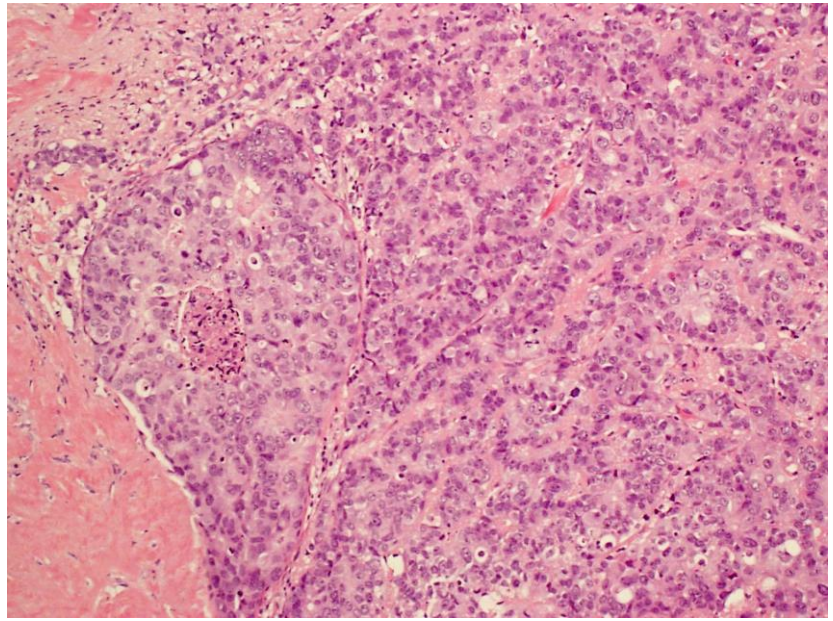
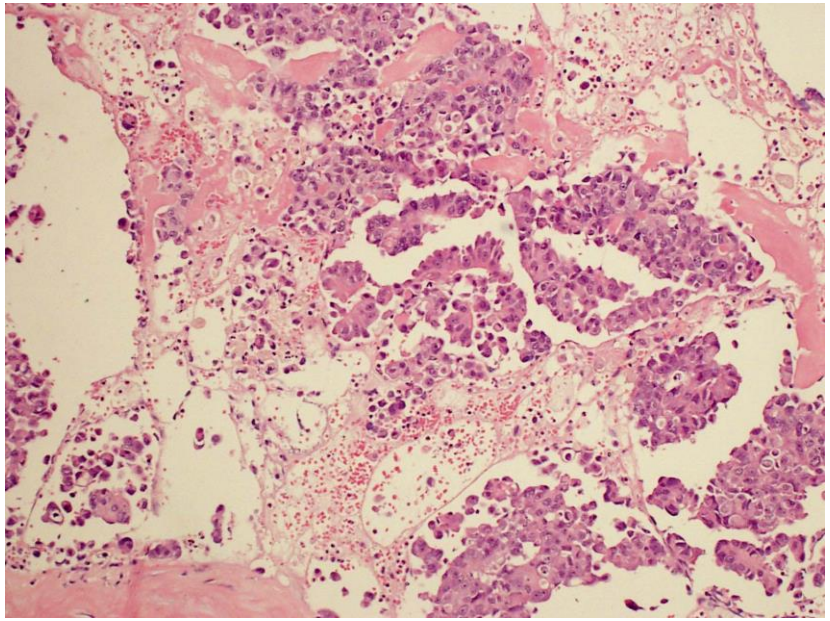


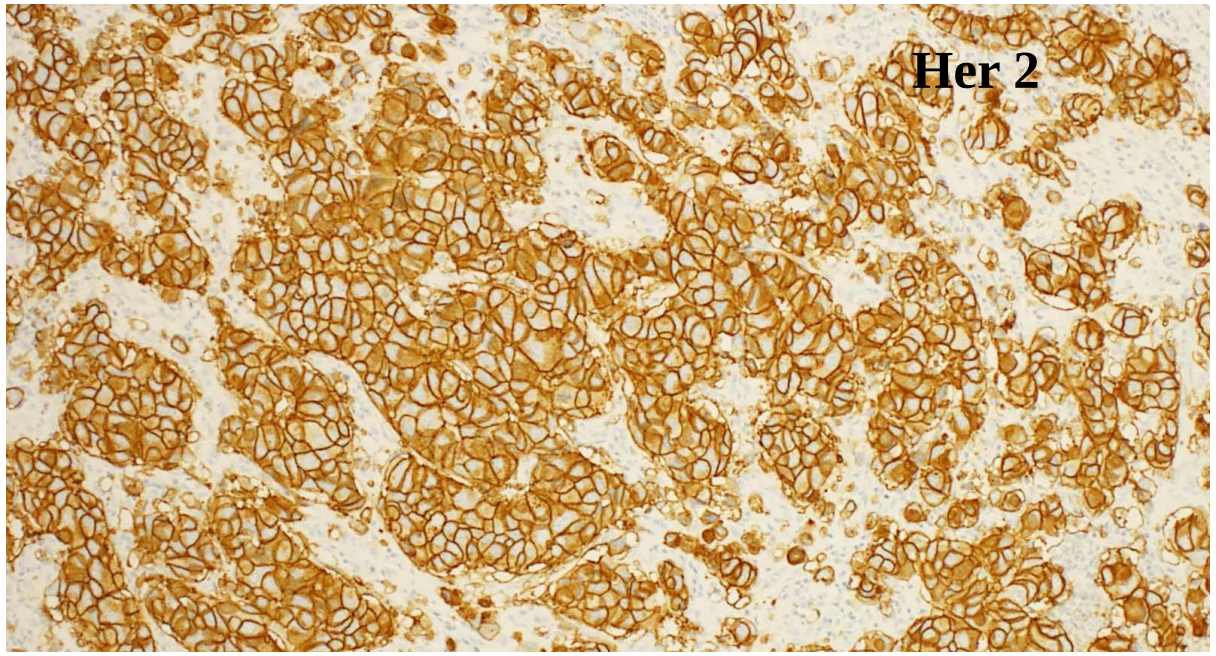


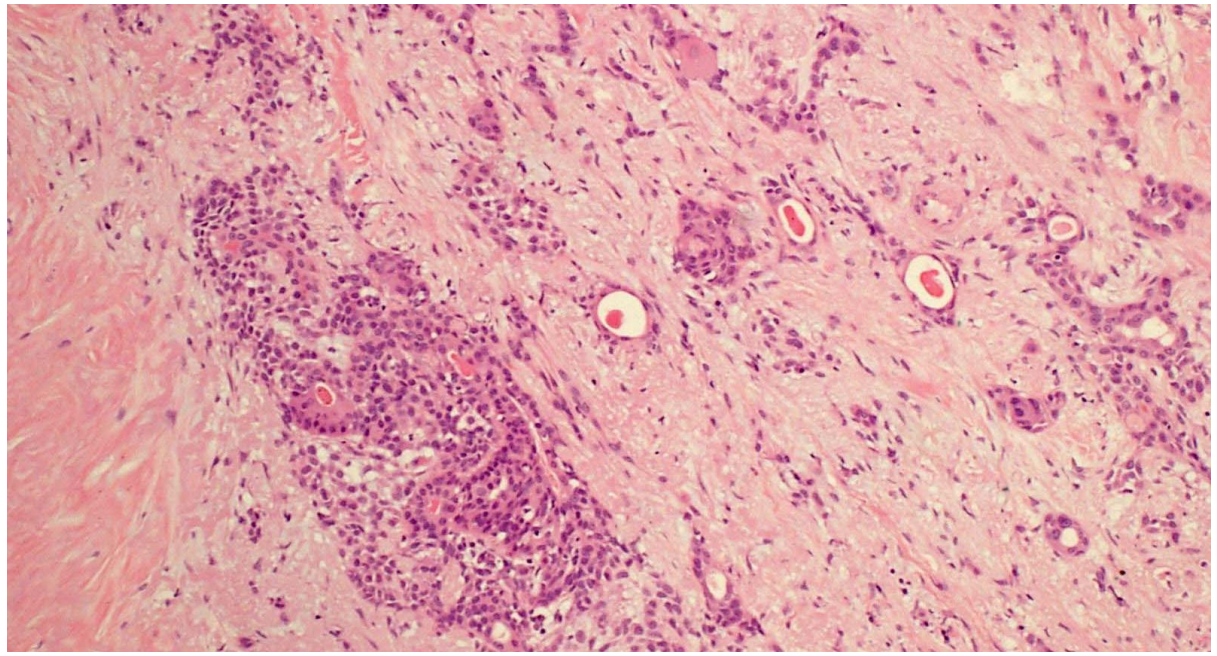
Diagnosis: Salivary duct carcinoma

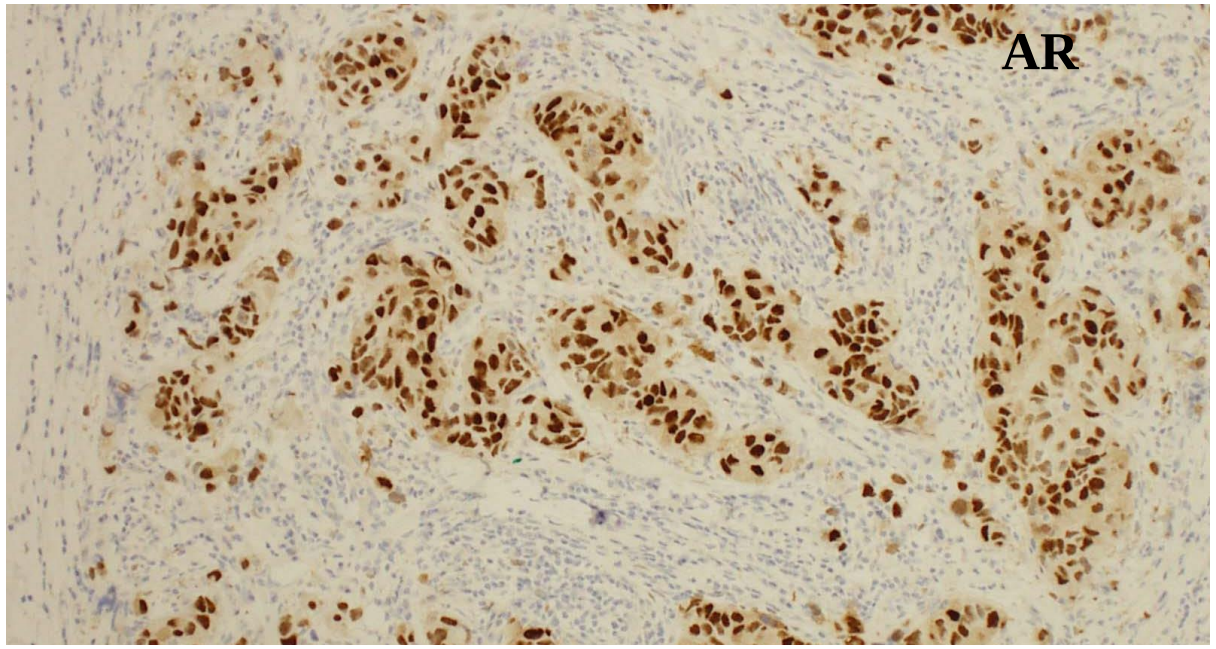
- **Most in males**
- High grade (resembles mammary ductal carcinoma)
- Morphological types: solid, micro papillary, mucinous, microcystic, sarcomatoid, basal type
- Apocrine / oncocytoid cells
- **Positive for Androgen receptor (70%), Her 2 +++ (25-30%)**
- **Negative for ER, PR**
- CK7, GCDFP15
- **Aggressive:** recurrence, Lymph node and distant metastasis

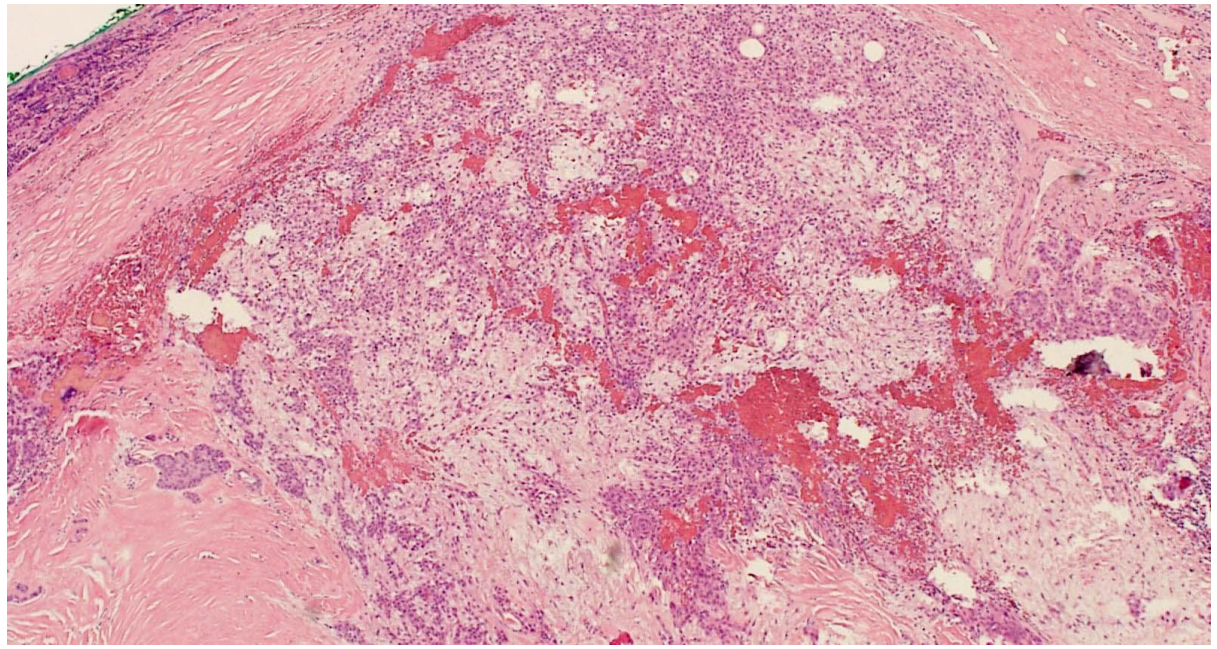
Case 27. 74 male
Right parotid tumour


Her 2



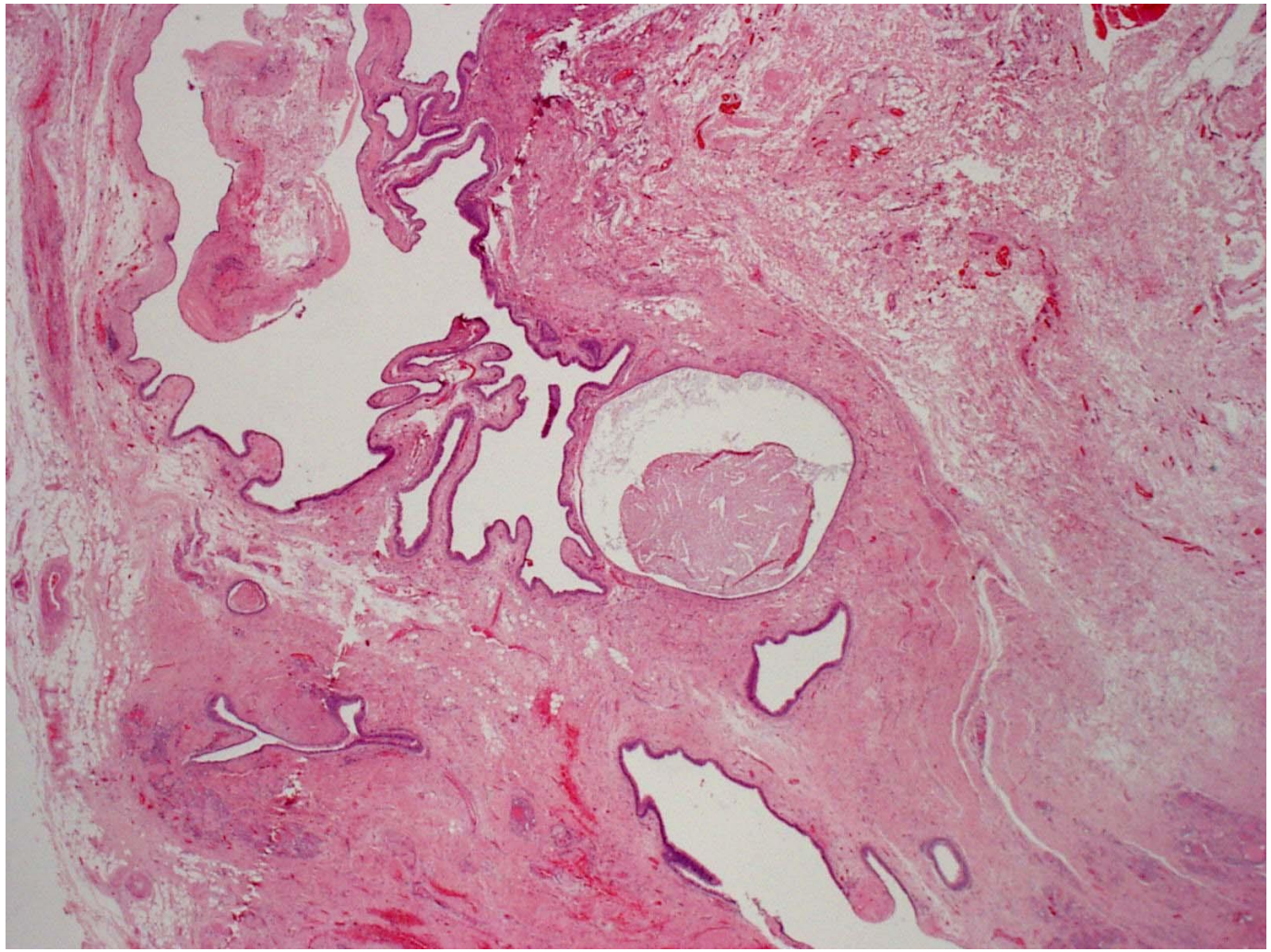

AR

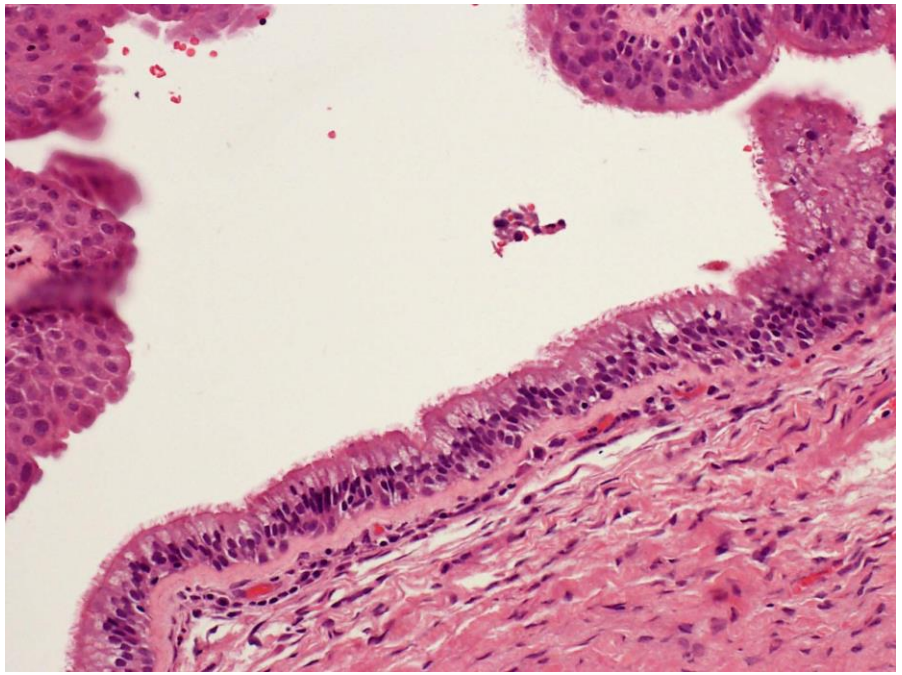


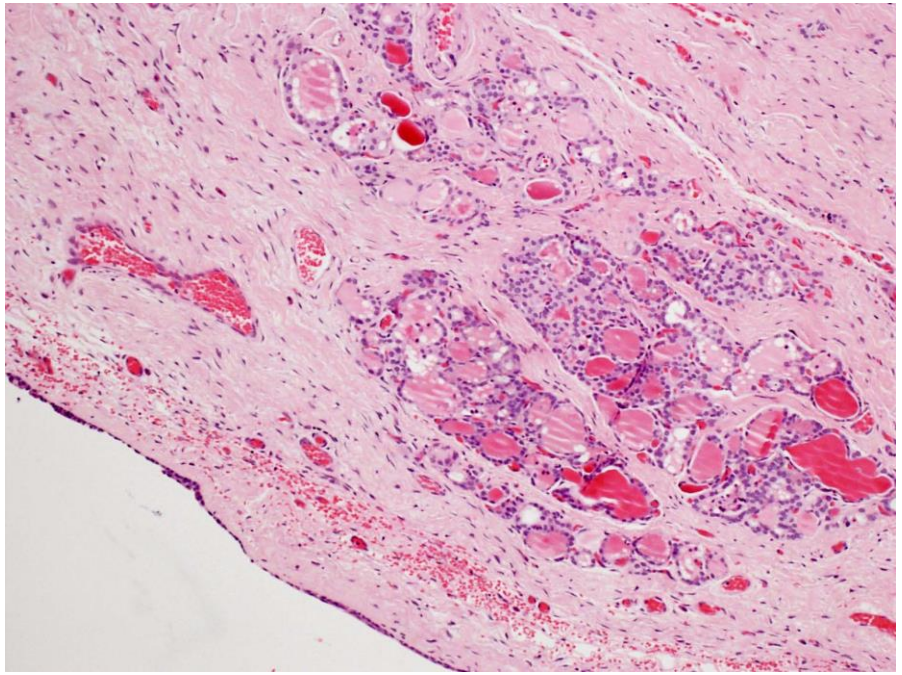
Diagnosis: Ca ex Pleomorphic adenoma
Subtype: Salivary duct carcinoma

- Residual circumscribed area of scarring may indicate PA
- **Identify type of malignant tumour such as salivary duct, mucoepidermoid etc**
- **Extent of invasion beyond capsule of PA**
- Grade
- **Immunohistochemistry:** AR, Her 2
- High rate of lymph node metastasis, local invasion
- PLAG1 and HMGA2 alterations or depending on type of adenocarcinoma : Her2, p53

Case 28. 68 male
Cystic lesion midline of neck







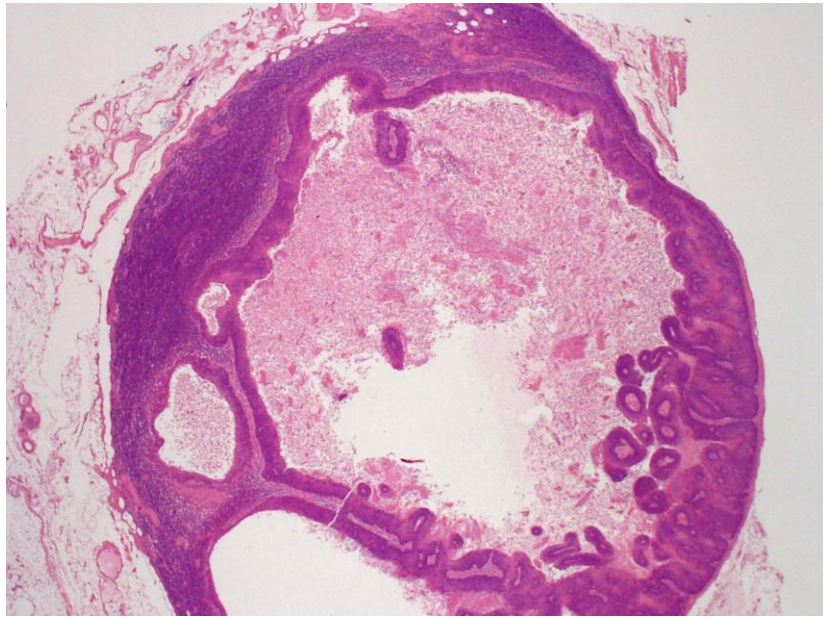
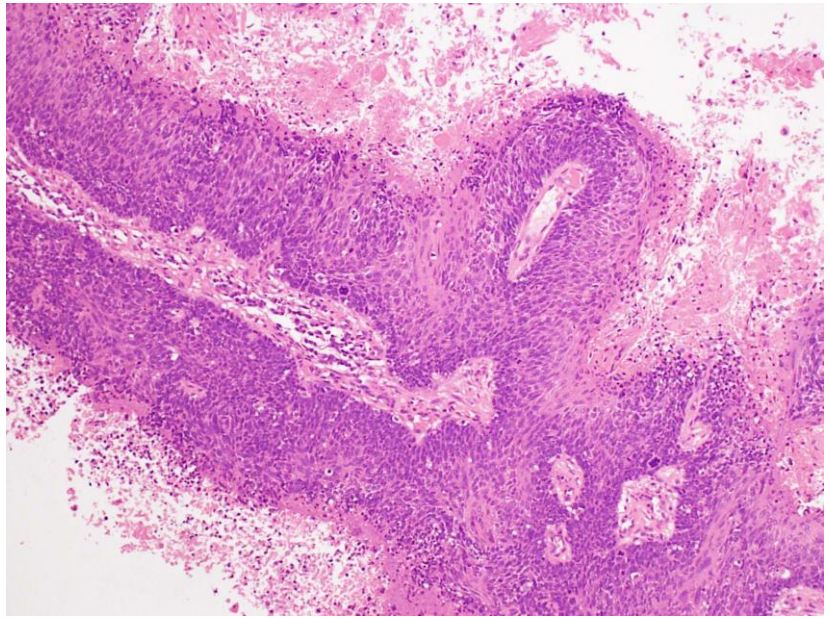
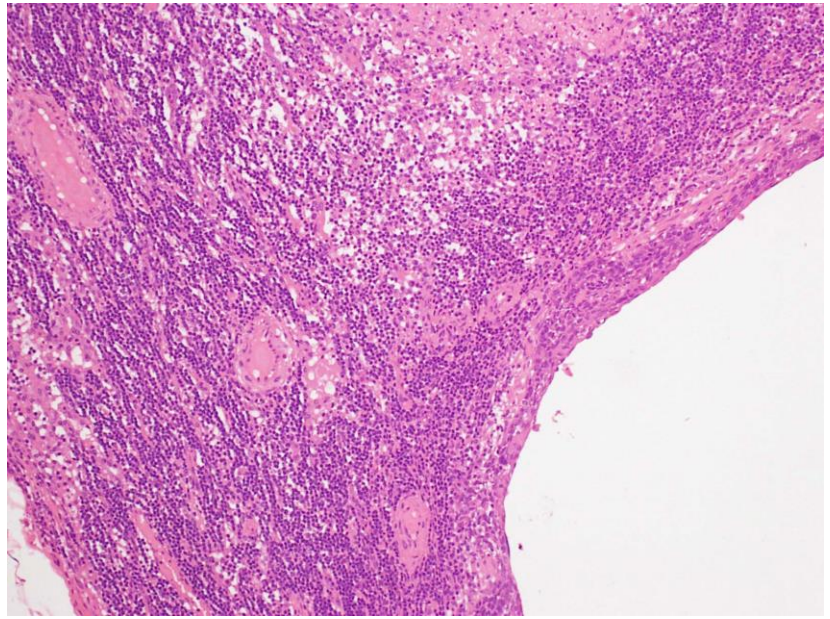
Diagnosis: Thyroglossal duct cyst

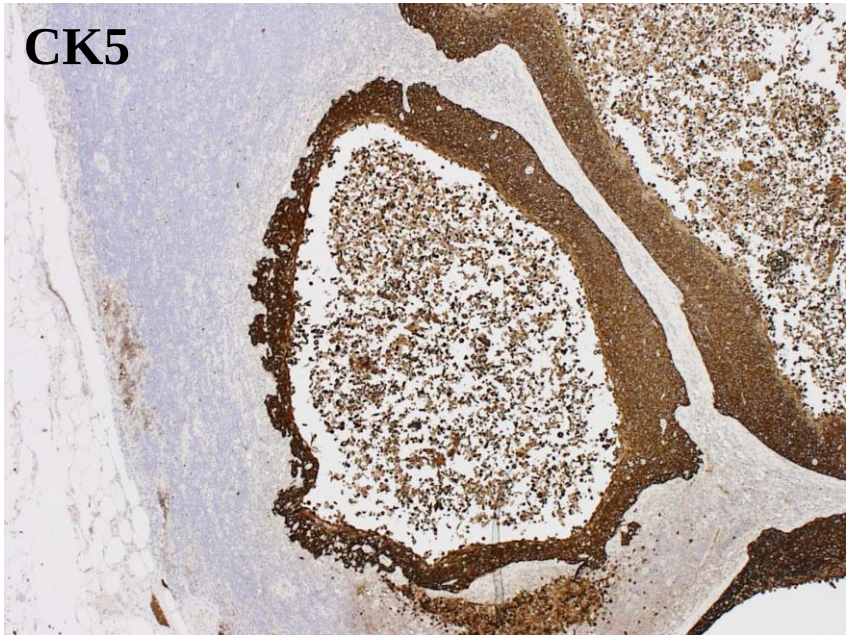
- Thyroglossal tract: recurrent infections, carcinoma development
- Anywhere in the midline neck from foramen caecum region of tongue.
- 75% present in midline of neck at or just below hyoid bone. Can present more laterally if inflamed and fibrosed. Thyroid tissue not always found.
- Excised by Sistrunk procedure.

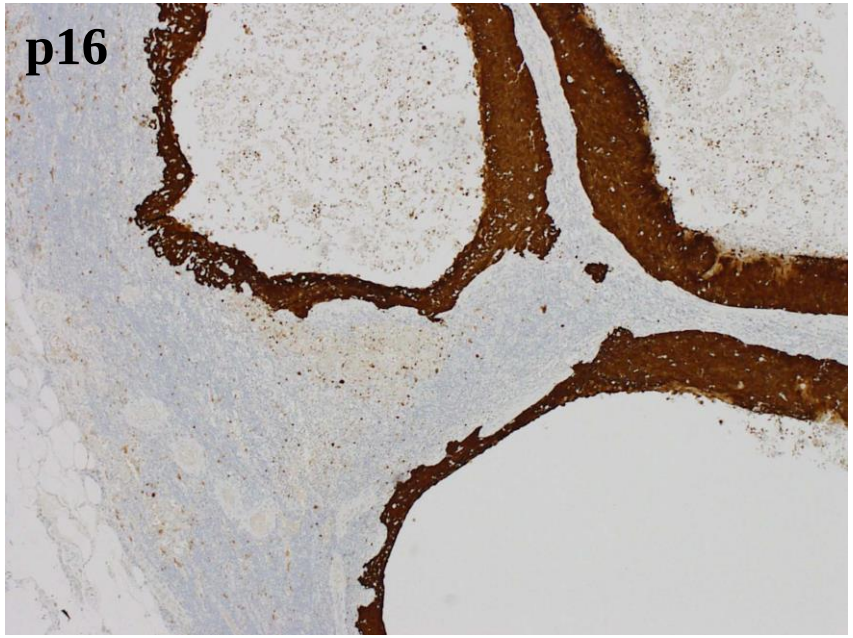
<u>DD of cystic swellings in the neck:</u>

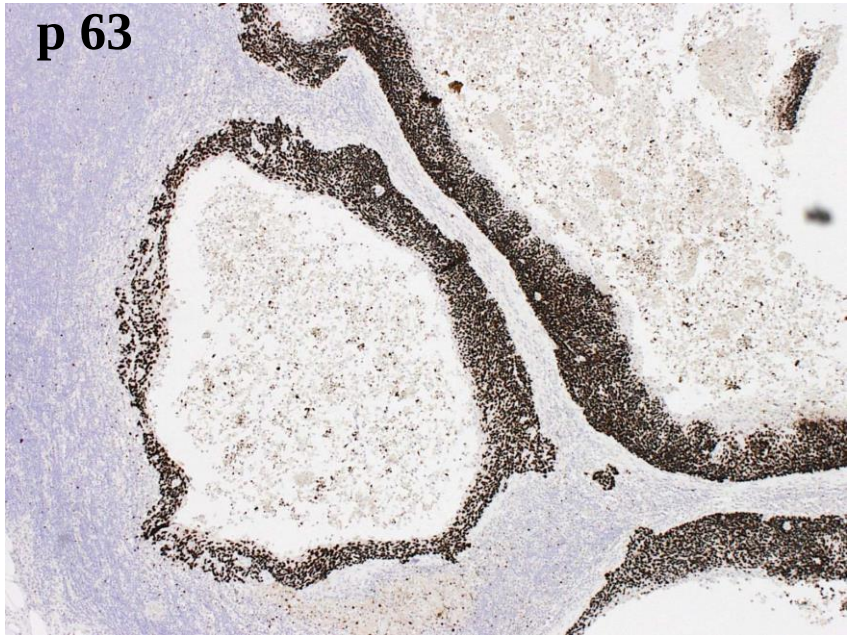
- Midline: Plunging ranula, thyroglossal duct cyst, thyroid cystic benign and malignant lesions, parathyroid cyst, thymic cyst, cystic metastasis, cystic teratoma
- Lateral: Branchial cyst, cystic metastasis from head and neck, parathyroid cyst, thymic cyst, cystic teratoma

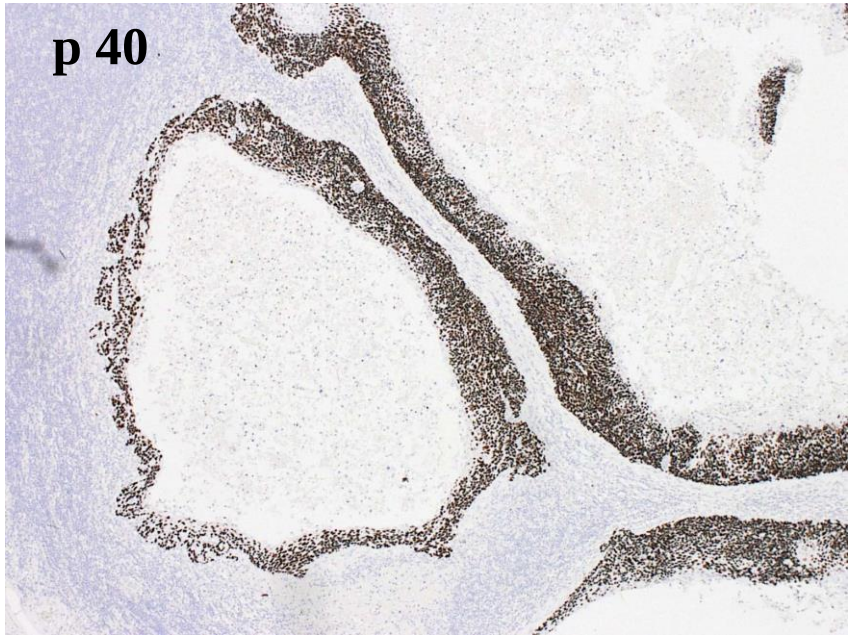
Case 29. 60 male
Right neck mass

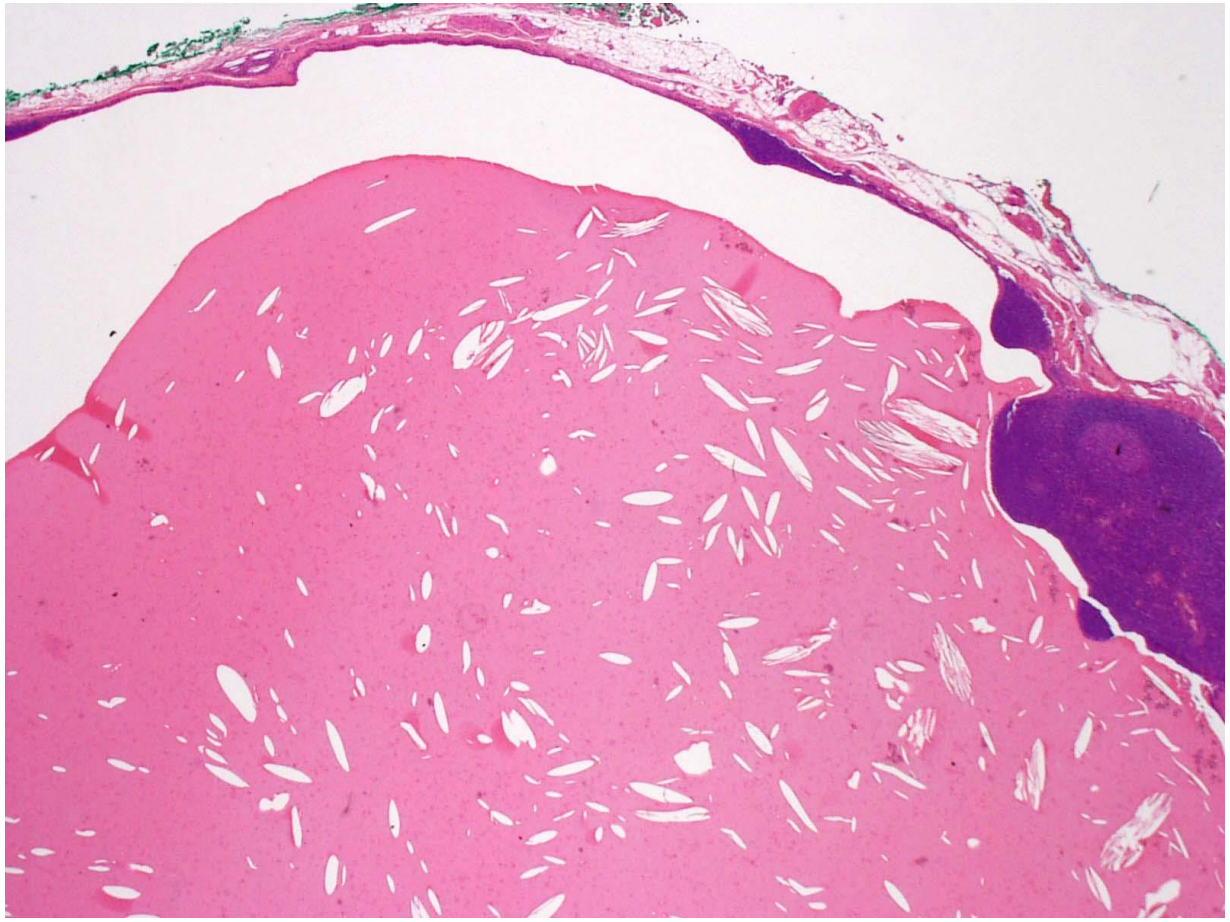

CK5

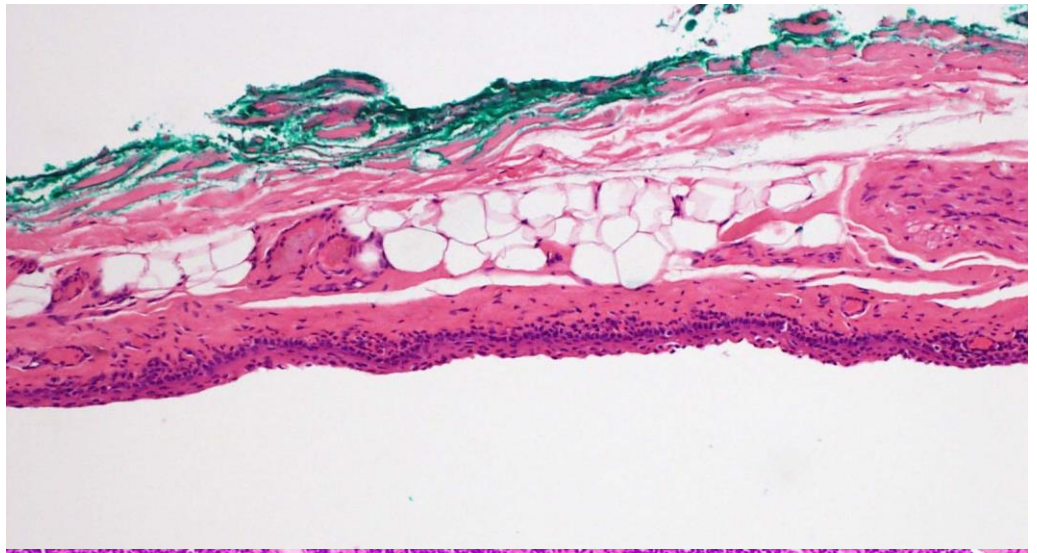

p16

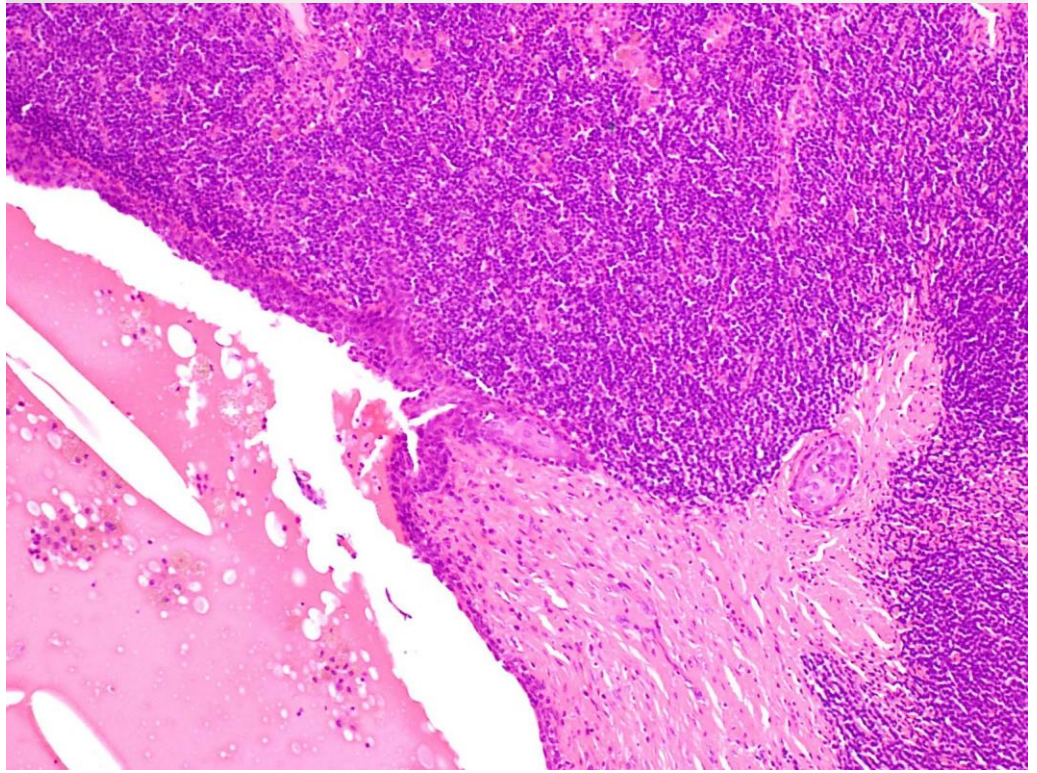

p 63


p 40

Case 30. 61 female
Cystic lesion in the right neck







Diagnosis: Branchial cyst

- Age, location
- Clinical history
- Histology
- P16 can be positive but patchy