



# SALIVARY GLAND CARCINOMAS

# INTRODUCTION

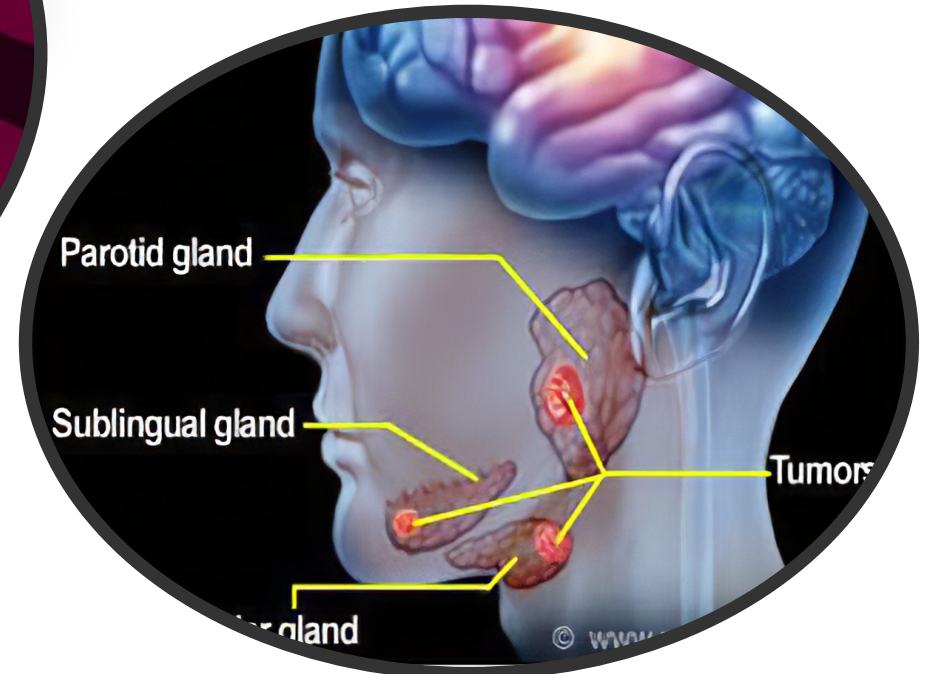
## Salivary gland neoplasm

### 1. Major salivary gland

- a. Parotid gland
- b. Submandibular gland
- c. Sublingual gland

### 2. Minor salivary gland

600 – 1,000 minor salivary gland distributed throughout the mucosa of the upper aerodigestive tract (more common in the soft and hard palate).



# Salivary gland carcinomas

- **SGCs** are a heterogeneous group of tumors with many histological subtypes.
- **SGCs** are relatively rare, accounting for 3-6% of all neoplasms in the head and neck region.
- **Male: Female** ratio of (1:1.5).
- The **age range from** 4<sup>th</sup> to 7<sup>th</sup> decade of life.
- **The pathogenesis** of SGTs is unknown.
- These tumors are showing varied rates of **local, regional,** and **distant metastasis** and **recurrence** in accordance with tumor site and therapy.

**The diagnosis of Salivary Gland Carcinomas done at:**

- **Oral and maxillofacial Pathology laboratory / College of Dentistry, University of Baghdad.**



From the archives of Oral and Maxillofacial pathology department/Collage of dentistry/University of Baghdad, from **1972-2021,**

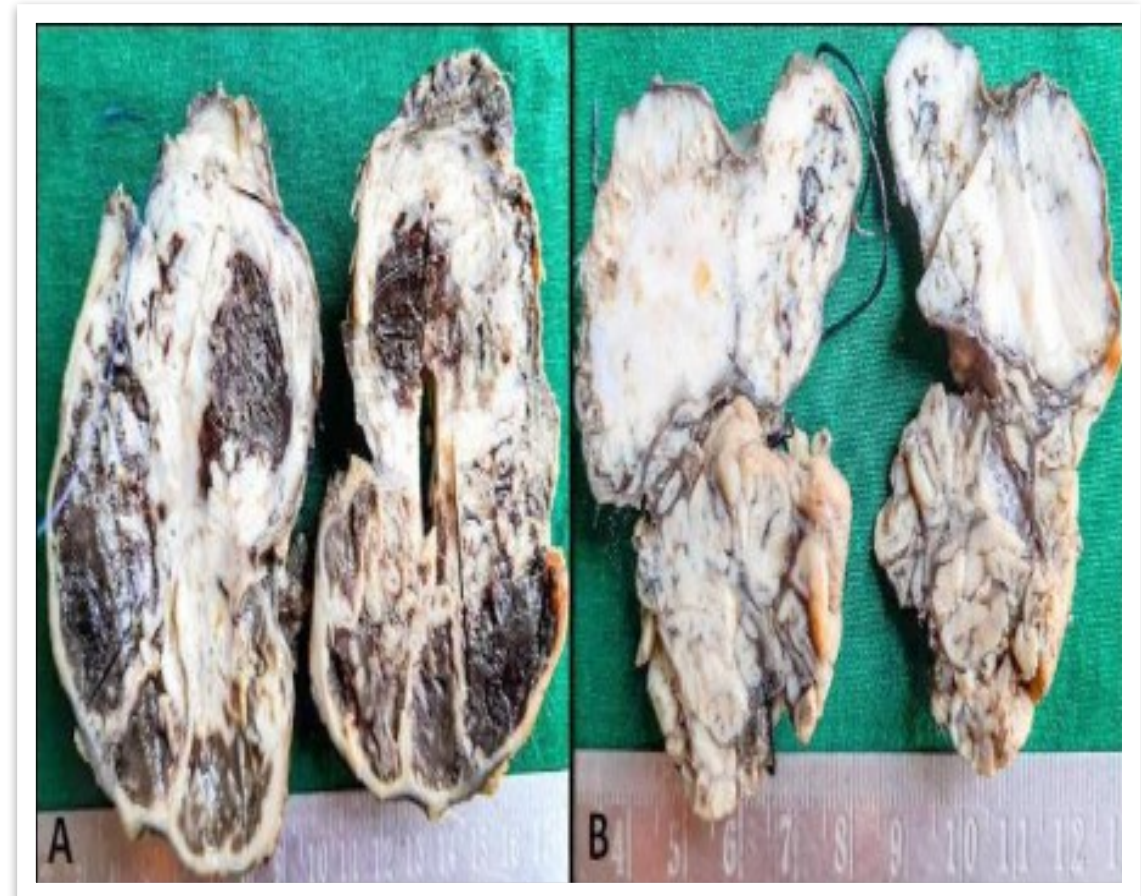
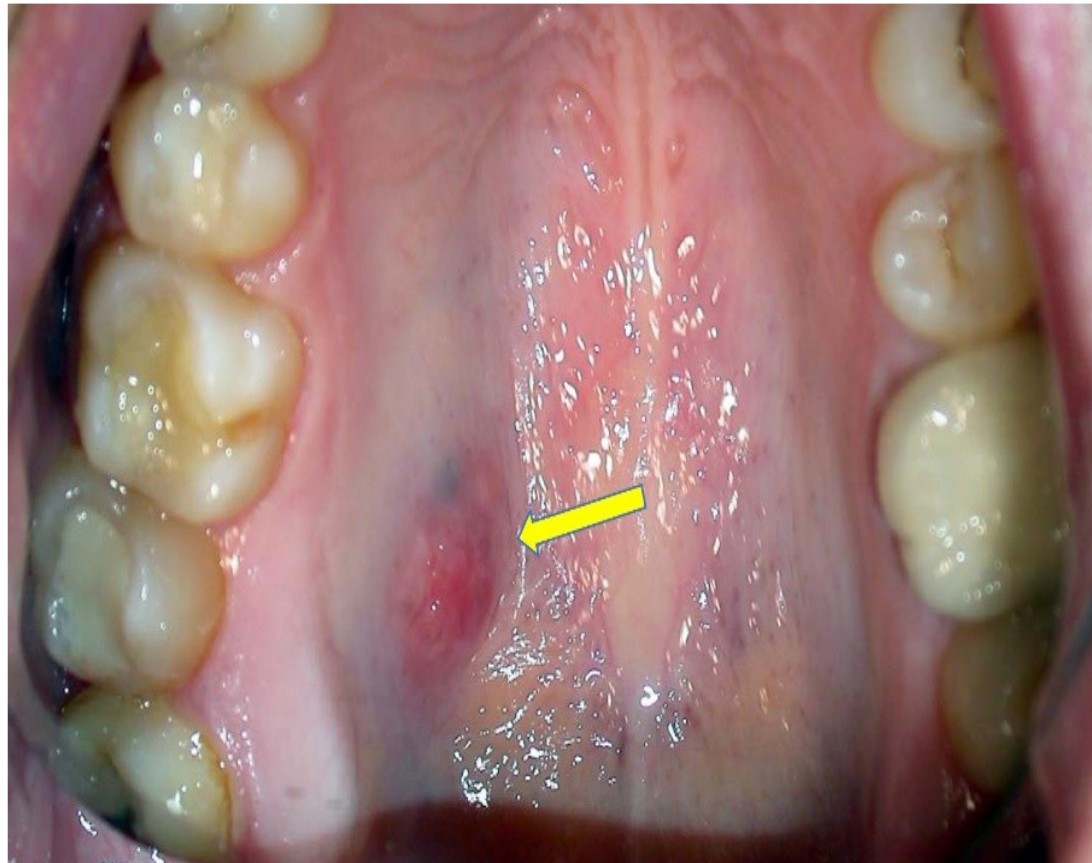
**93** formalin-fixed, paraffin embedded tissue blocks diagnosed as SGCs range from:

- 37** cases diagnosed as MEC.
- 44** cases diagnosed as AdCC.
- 12** cases diagnosed as PAC.

# Mucoepidermoid carcinoma (MEC)

- MEC it accounts for 5%–10% of all tumors and 30% of all salivary malignancies.
- The age between 3<sup>rd</sup> to 7<sup>th</sup> decades of life MEC typically manifests as a **painless, variable-fixed, rubbery or soft mass**.
- MEC is thought to be a mixture of cell types, including **mucous cells, epidermoid cells, and intermediate cells** in varying proportions.

# Mucoepidermoid carcinoma (MEC)



# Grading system for MEC

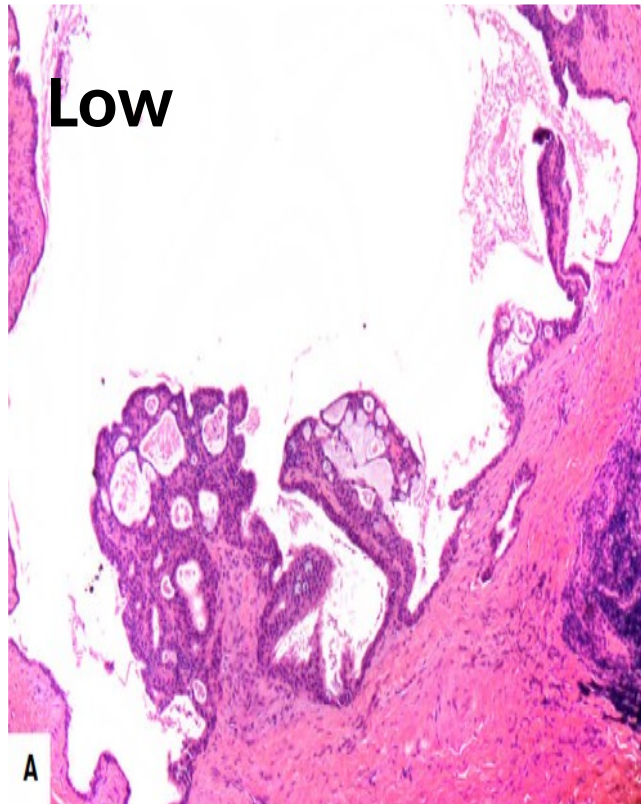
- ❖ Histopathological grading was done for each case of MEC according to **AFIP** grading system (Goode et al., 1998).

Parameter	Point Value
Anaplasia	+4
Neural Invasion	+2
Cystic component <20%	+2
≥4 mitosis per 10 high power fields	+3
Necrosis	+3
Grade	Point Score
High	7-14
Low	0-4
Intermediate	5-6

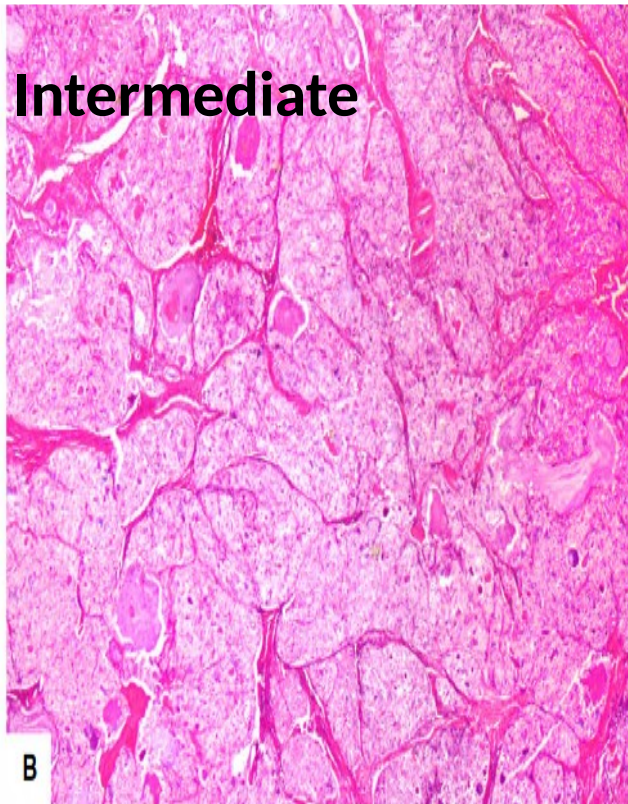


# MEC

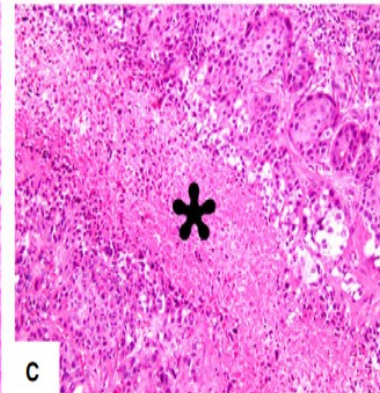
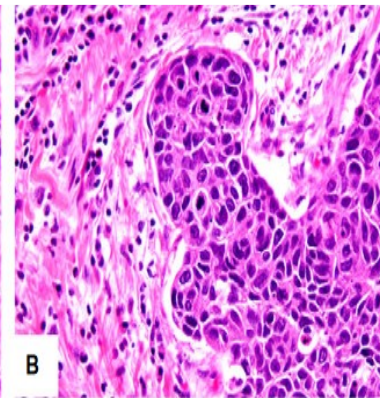
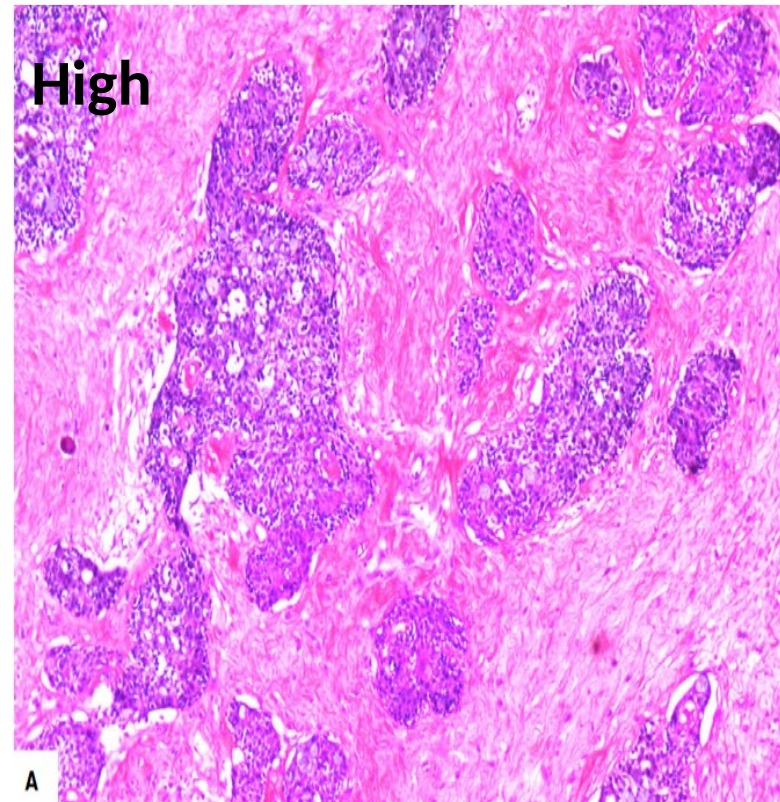
Low



Intermediate



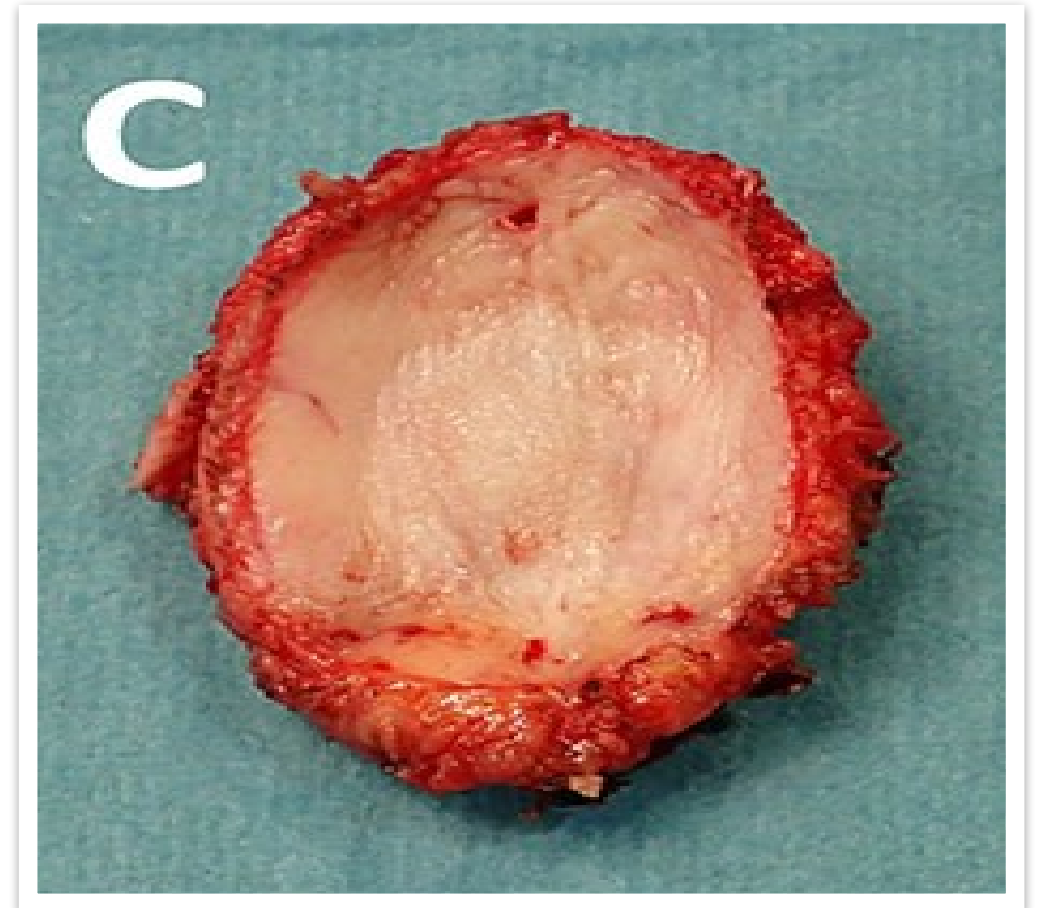
High



# Adenoid cystic carcinoma (AdCC)

- AdCC accounts for about 1% of all head and neck tumors and 6%–10% of salivary gland tumors.
- AdCC occurs between the 5<sup>th</sup> and 7<sup>th</sup> decades of life.
- There is a slight female predominance .
- AdCC frequently appears clinically as a **small, slow-growing lesion with indolent behavior, but it is frequently discovered at an advanced stage.**

# Adenoid cystic carcinoma (AdCC)



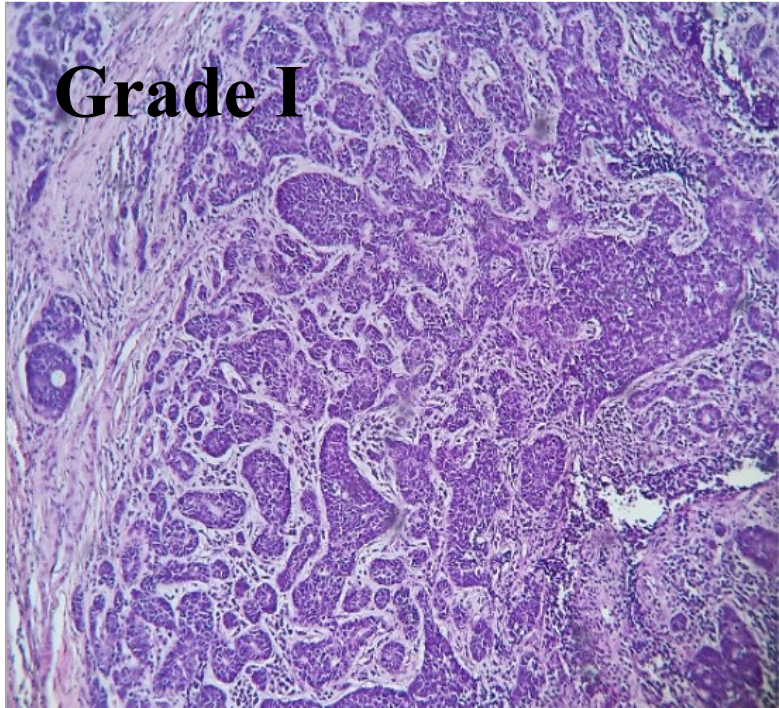
# Grading system for AdCC

❖ Histopathological grading was done for each case of AdCC according to **Perzin/Szanto** grading system (Perzin et al., 1978 & Szato et al., 1984)

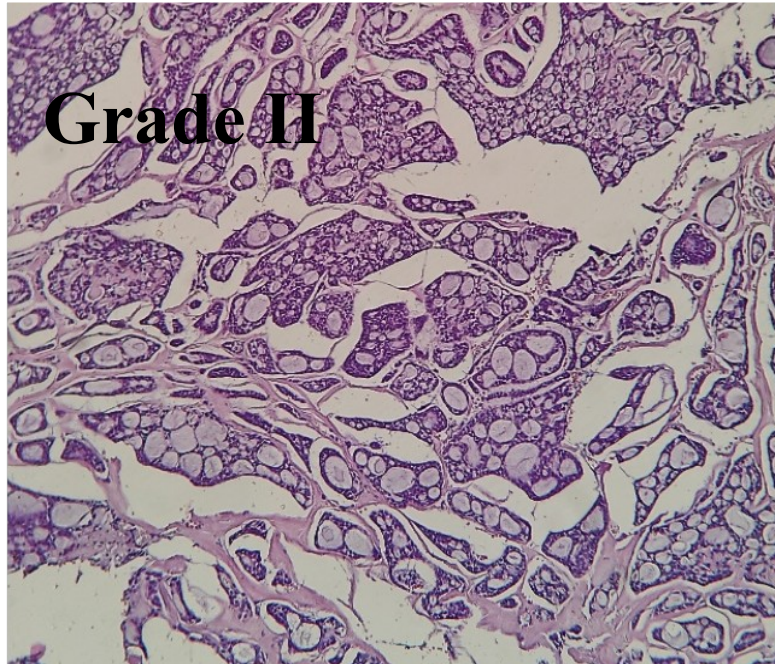
Perzin/Szanto grading system for AdCC (Szanto et al., 1984, Perzin et al., 1978)	
I	Predominantly tubular, no solid
II	Predominantly cribriform
III	Solid component > 30%

# AdCC stained with H&E

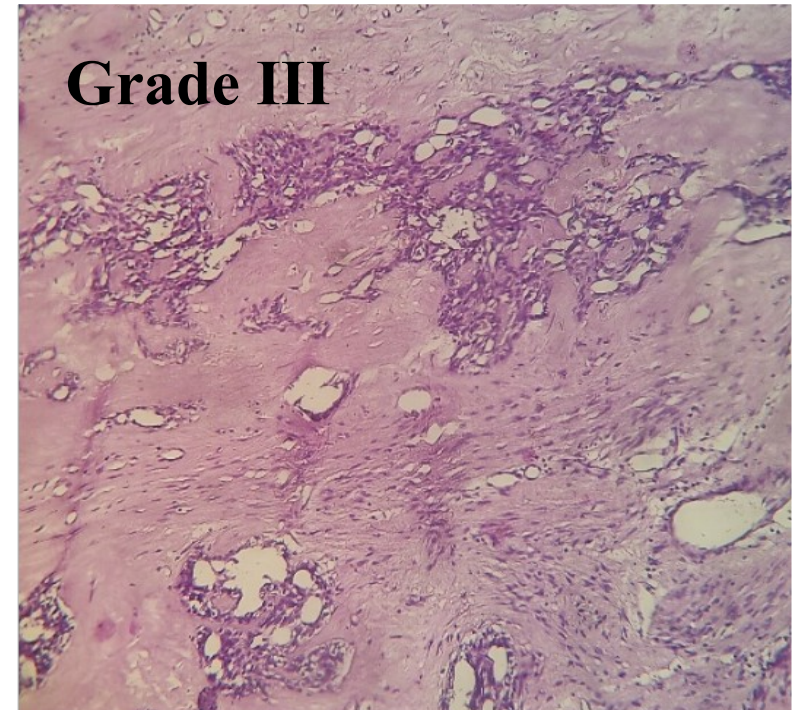
**Grade I**



**Grade II**



**Grade III**



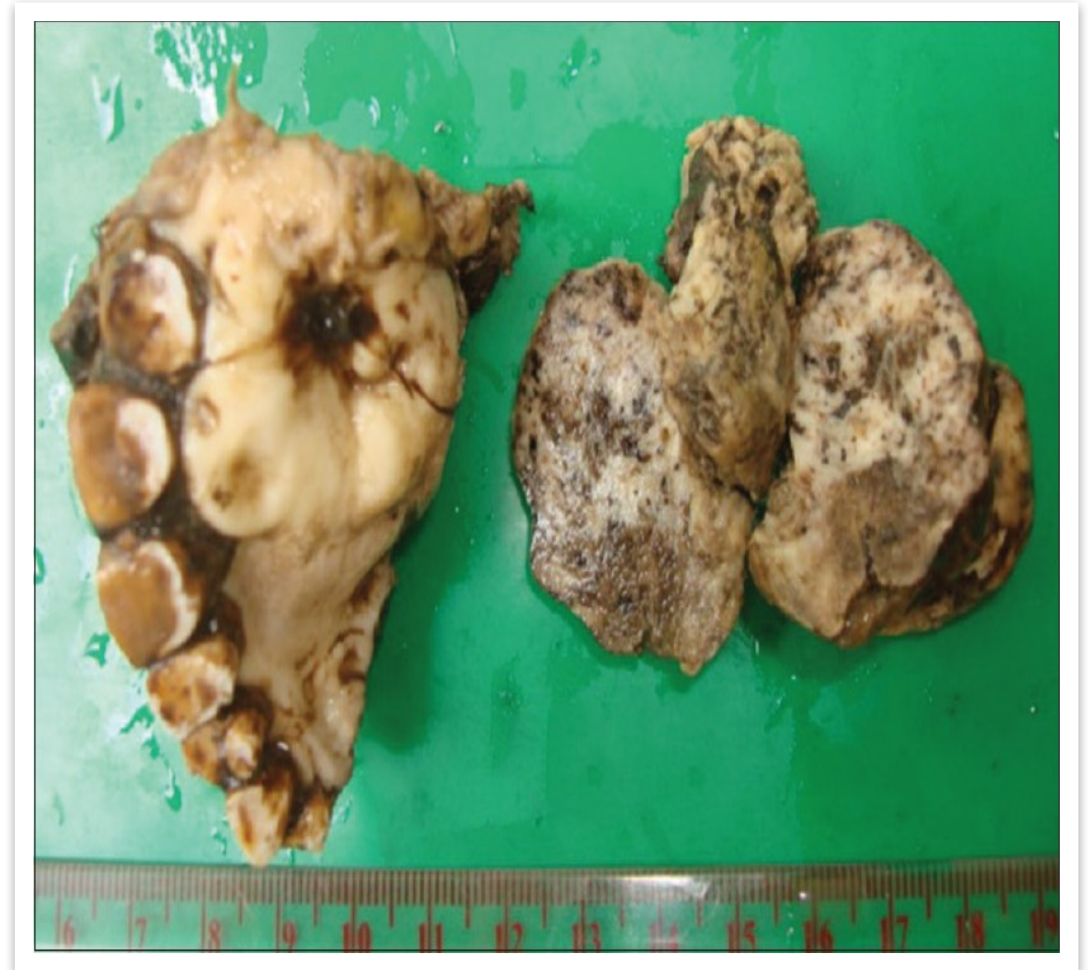
# Polymorphous Adenocarcinoma (PAC)

- PAC accounts for approximately 7% of minor salivary gland tumors and 20% of malignant salivary gland tumors.
- The age range from 23-94 years. WHO
- The female to male ratio was 2:1.
- It is typically **firm to solid, with an ovoid, unencapsulated, but broadly circumscribed contour.**



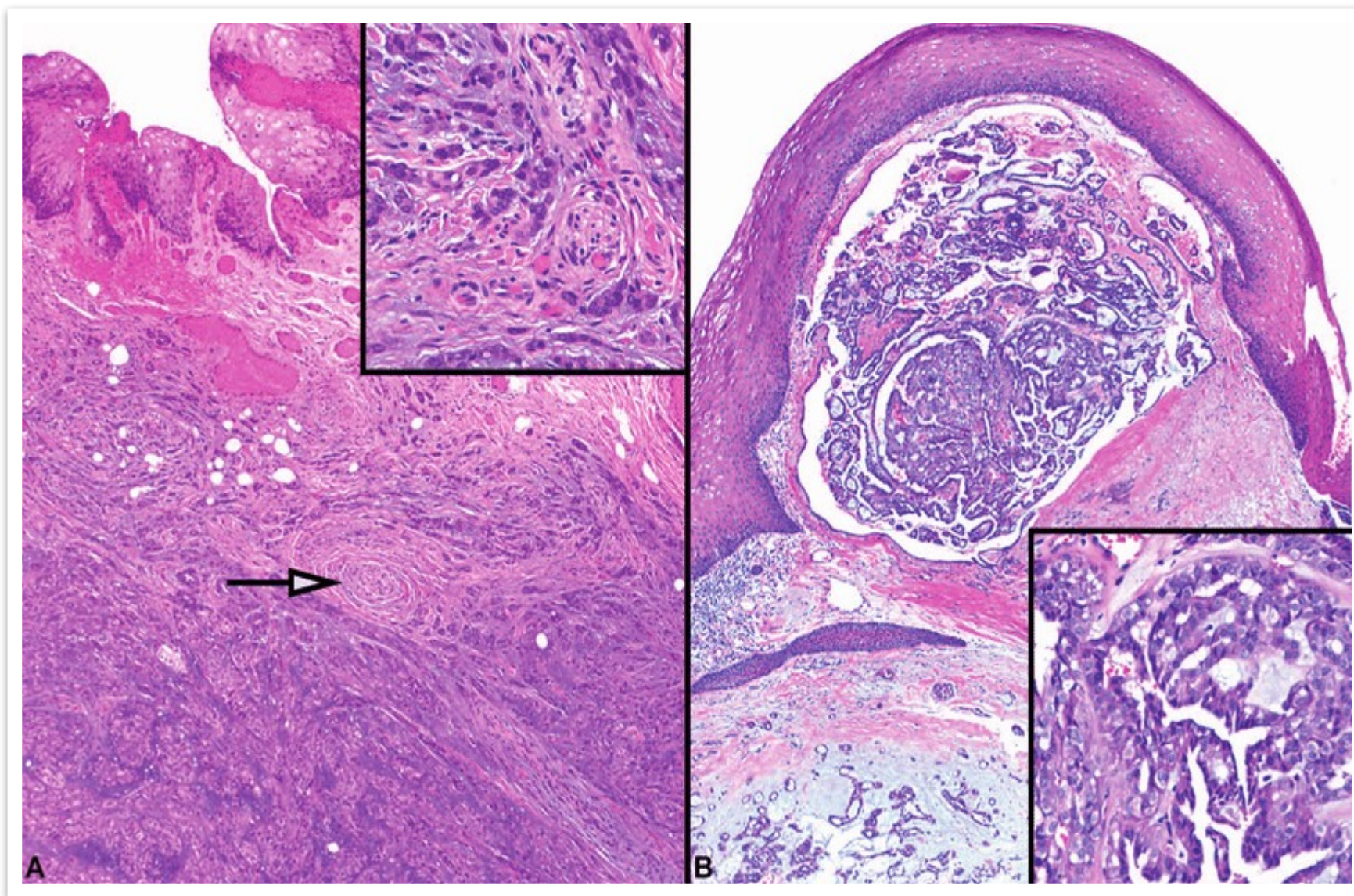
**WHO recently replaced the term  
Polymorphous Low Grade  
Adenocarcinoma (PLGA) to  
Polymorphous Adenocarcinoma  
(PAC) because of its ability to de-  
differentiation**

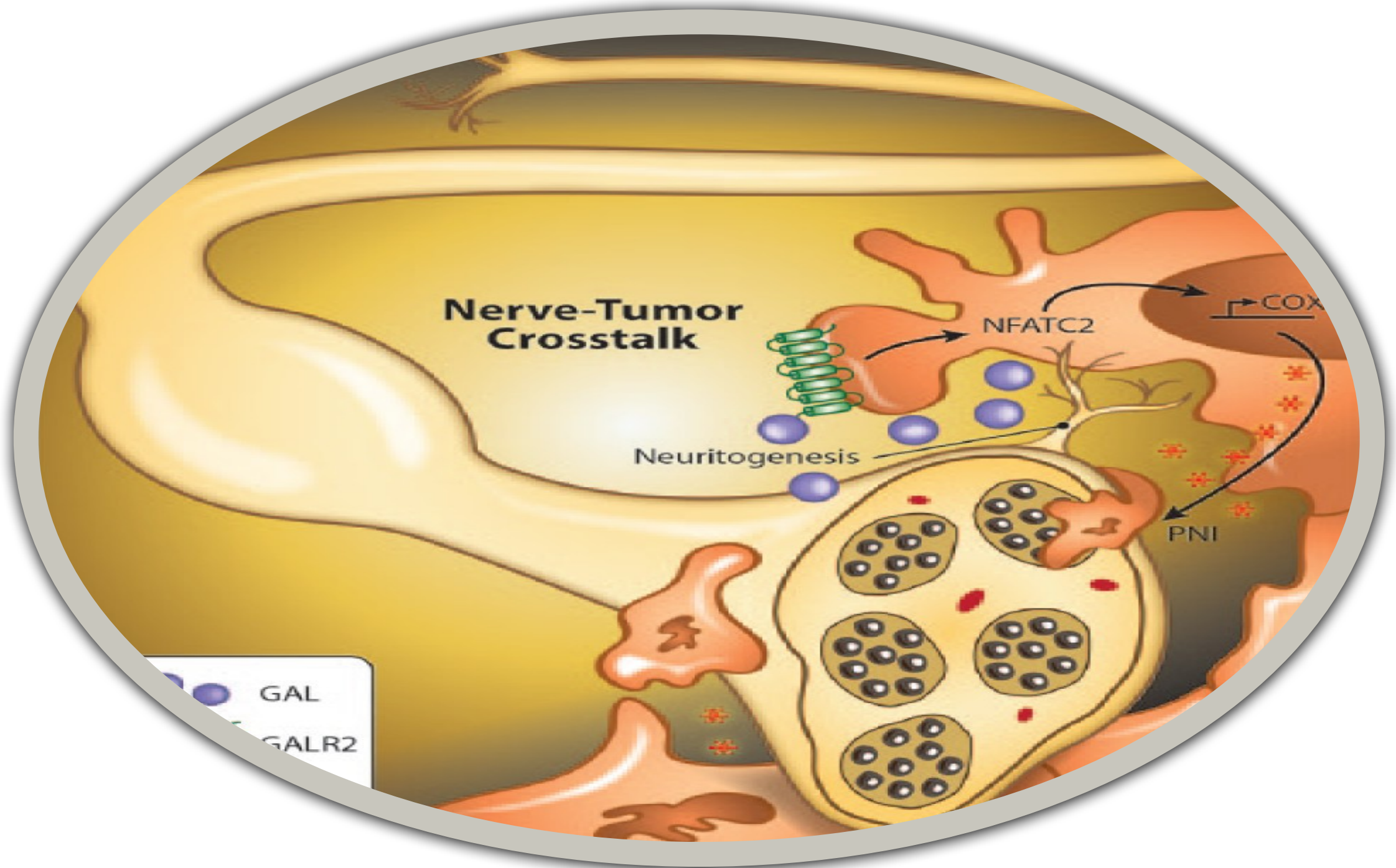
# Polymorphous Adenocarcinoma (PAC)





# Polymorphous Adenocarcinoma (PAC)

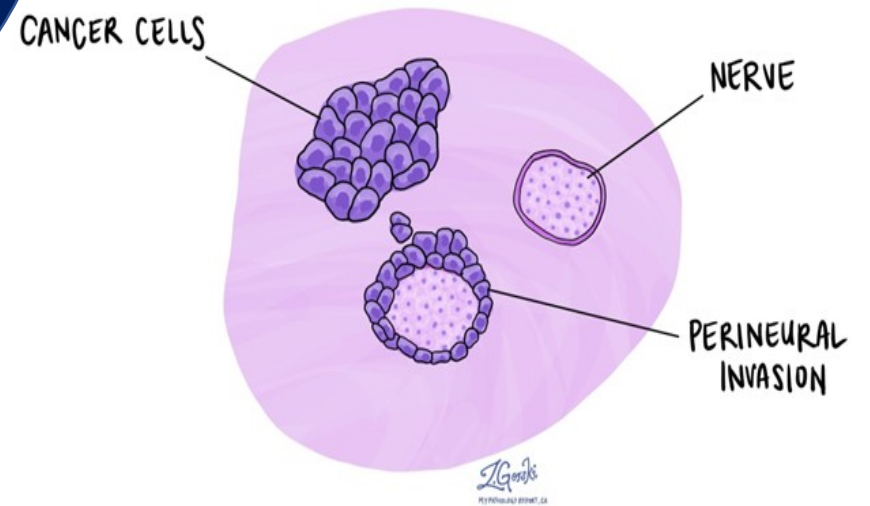




# Hallmark a characteristic feature of SGCs is PNI

- ❑ PNI reported 60% AdCC.
- ❑ PNI reported in 40% MEC.
- ❑ PNI reported in 30% PAC.

PERINEURAL INVASION = CANCER CELLS ATTACHED TO A NERVE



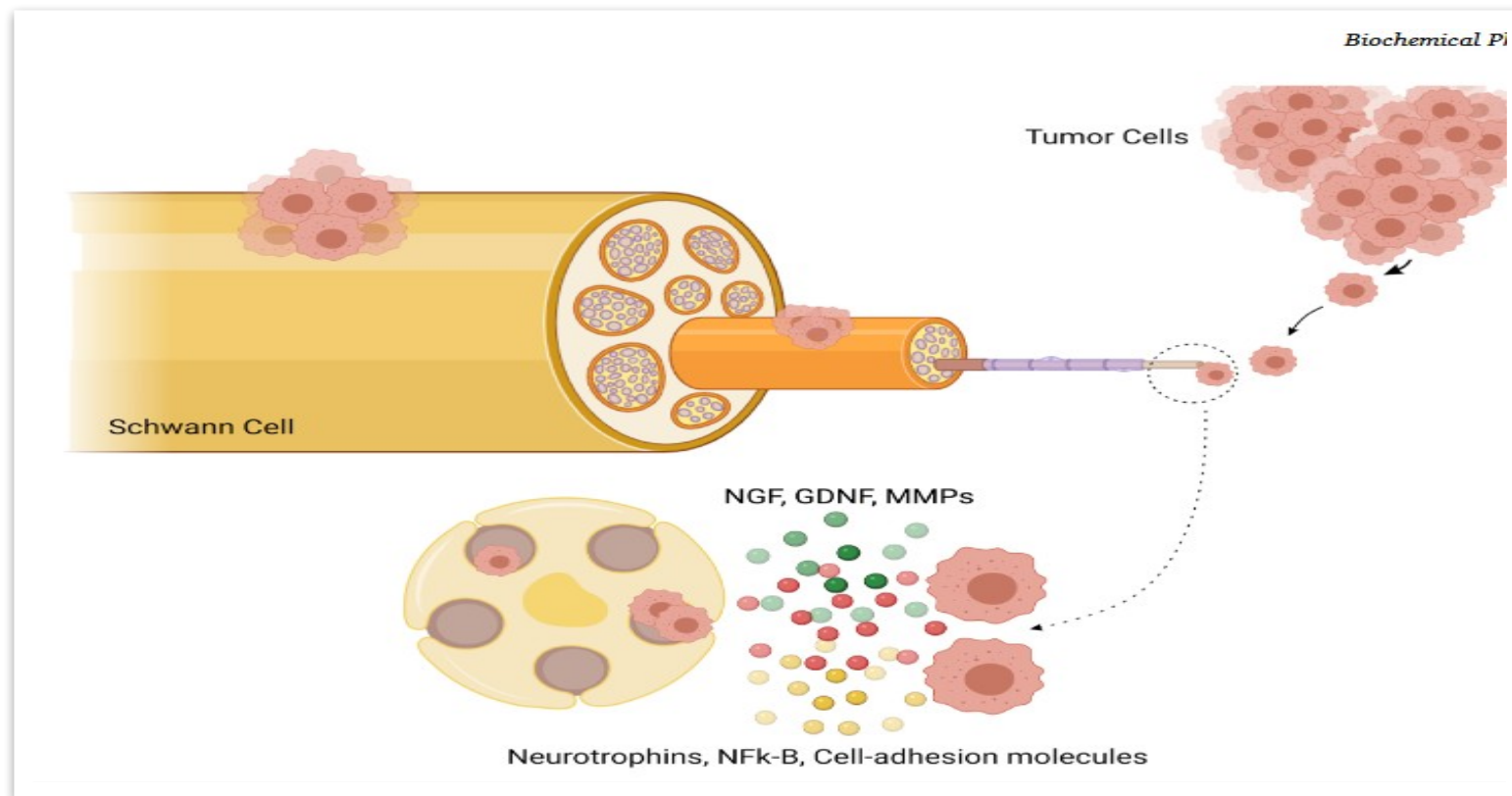
# Perineural invasion

- ❖ **PNI** is a type of metastatic tumor spread in which cancer cells travel along nerves far away from the primary lesion.
- ❖ **PNI** is linked to an increased risk of metastasis and a lower chance of survival in oral salivary gland cancers and many other tumors.

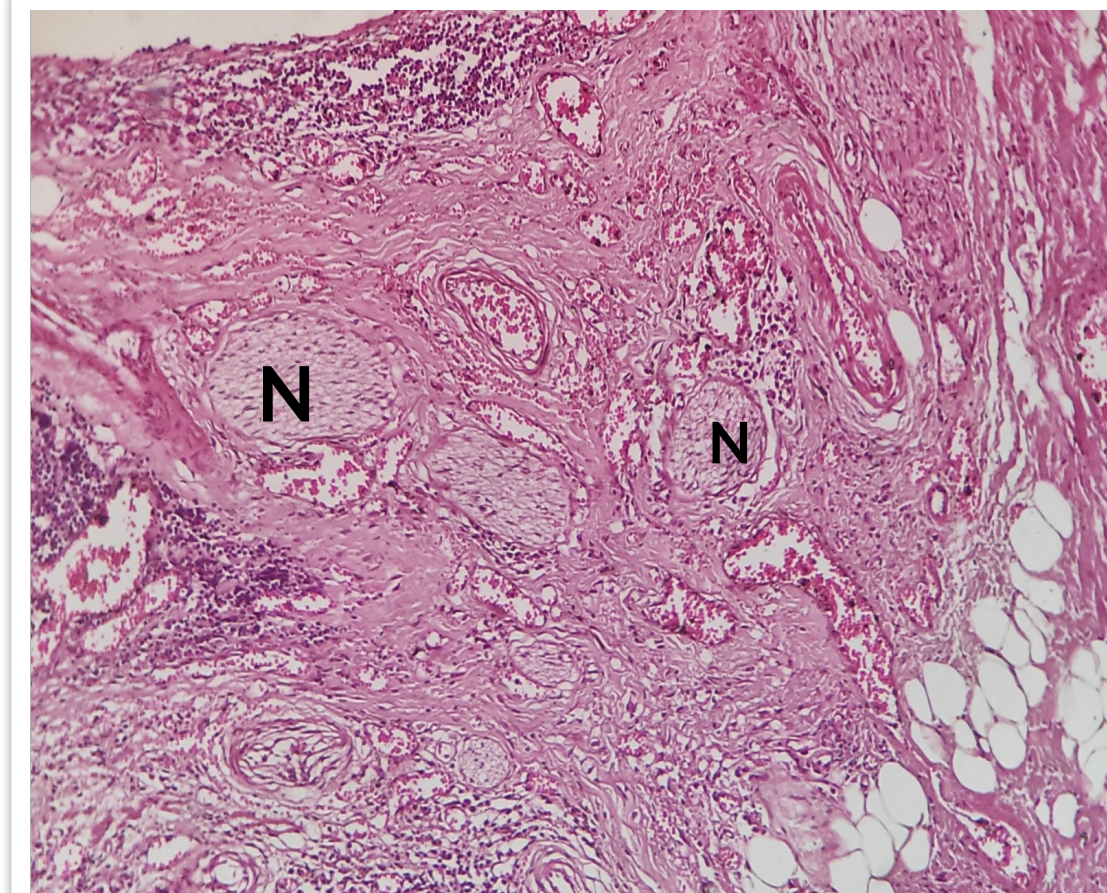
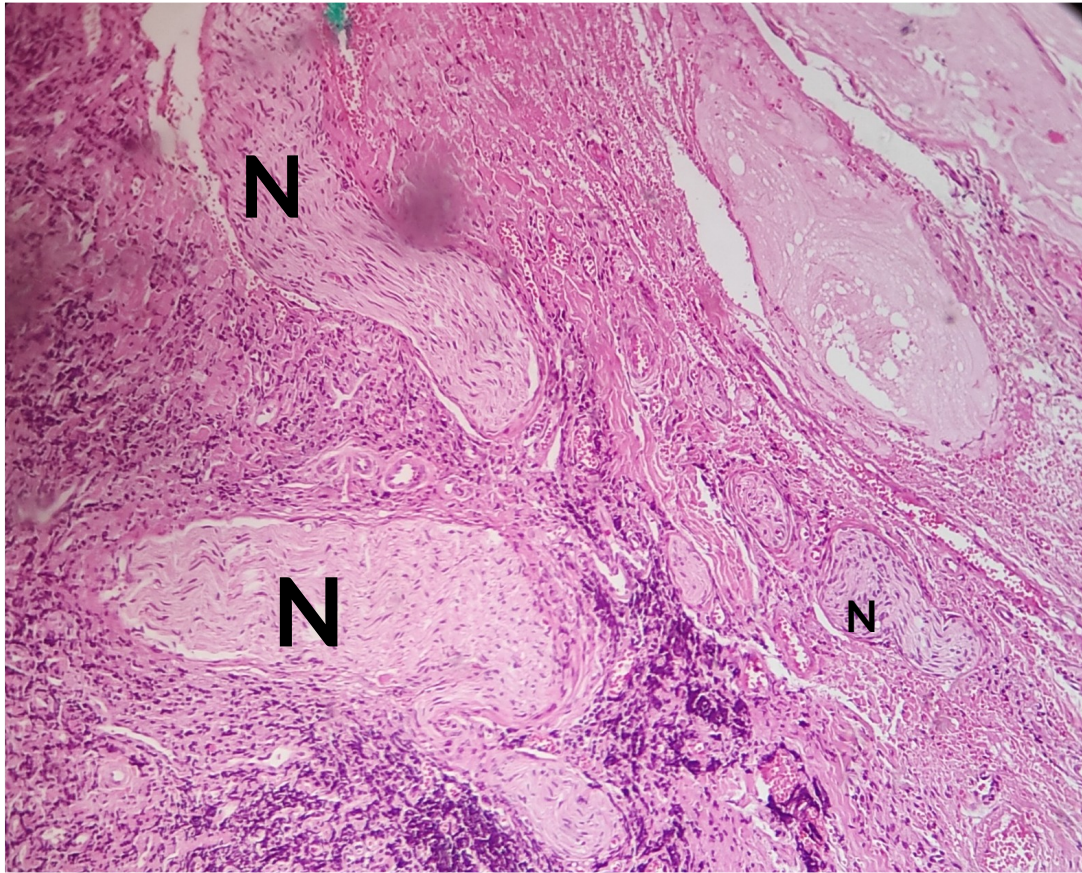
❖ Multiple tumors are characterized by their neurotropic behavior such as pancreatic, prostate, upper gastrointestinal, and head and neck carcinomas. Several theories suggest that PNI comprises a reciprocal interaction between tumor cells and target neurons, rendering these cells responsive to several factors that are released by nerve environment.

# Neoneurogenesis

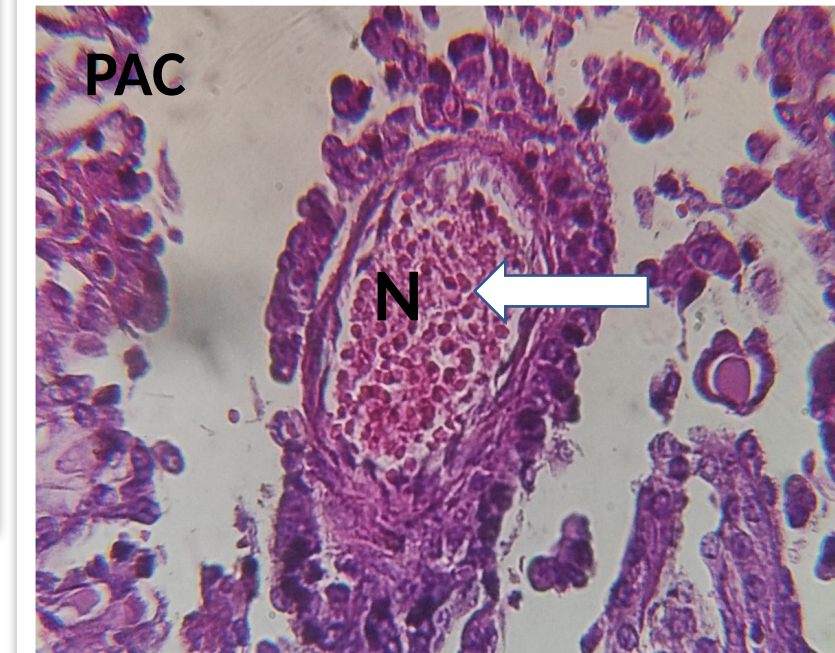
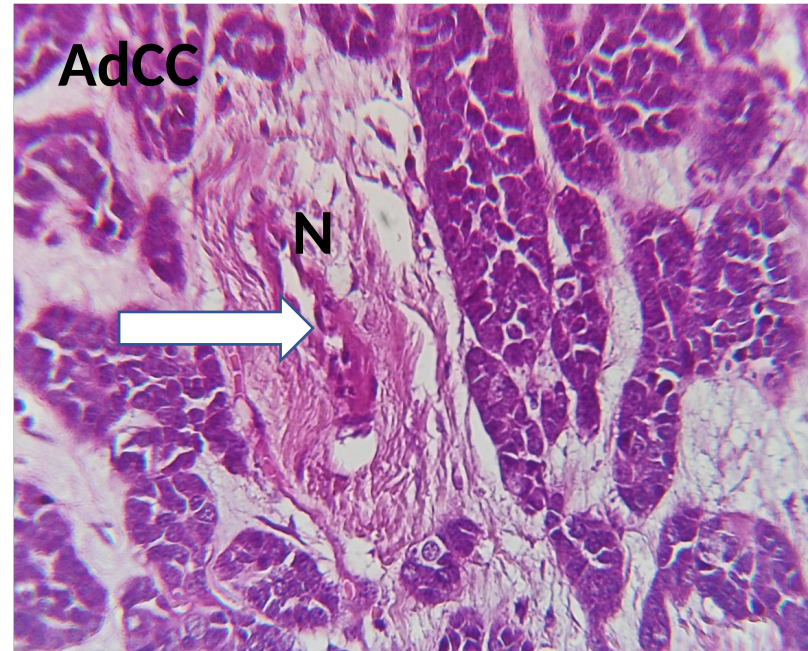
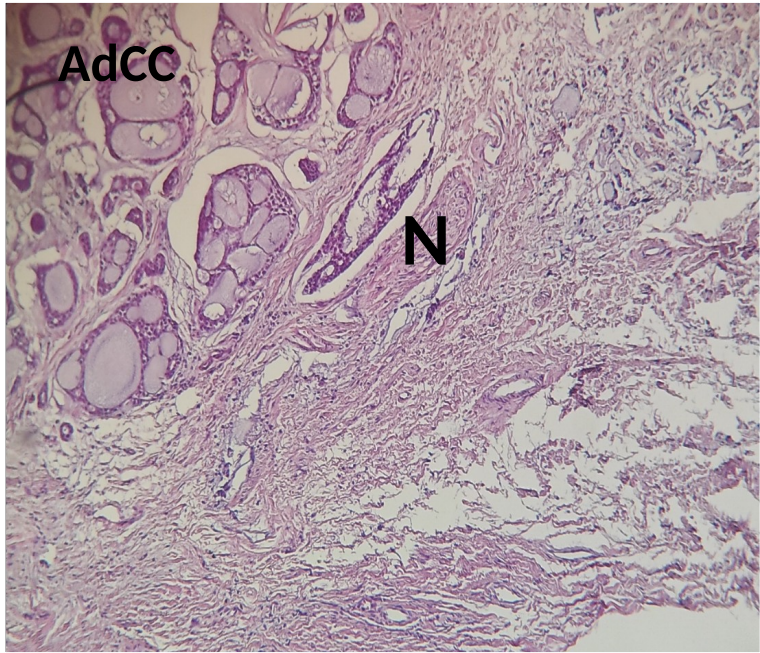
Is the ability of tumor cells to stimulate their own nerve supply by the growth of nerve endings (axons) in the direction of the tumor from the existing peripheral nerves, this can be achieved by the release of growth enhancing and axon guidance molecules by tumor cells.



# Histopathological Evaluation of PNI of MEC tested by H&E



# Histopathological Evaluation of PNI of AdCC and PAC tested by H&E







Thank  
you!