***Salivary gland tumors***

First, the doctor made a revision about salivary glands and their basic anatomy (it was a quick one so I advise you to study these information from the previous lecture).

-We have two types of salivary glands: major and minor.

-The major salivary glands come in pairs and they are: parotid, submandibular and sublingual.

-*Parotid gland*

It’s located in the retromandibular area bounded superiorly by TMJ. Posteriorly by base of skull, stylomastoid process, stylomastoid foramen, posterior belly of digastric. Medially there are vascular (external carotid artery, branches of internal maxillary artery and network of veins) and muscular structures.

Since its function is secretomotor so it’s innervated by parasympathetic nerve supply that comes from auriculotemporal nerve from otic ganglion at the base of skull.

Its secretion is mainly serous.

-*Submandibular gland*

It’s located in the submandibular space bounded superficially by skin, platysma, deep cervical fascia. From the inside we have mylohyoid muscle and inner surface of body of the mandible.

Parasympathetic nerve supply from chorda tympani, a branch of facial nerve.

*-Sublingual gland*

It’s the only one that it’s not capsulated and it’s located underneath the mucous membrane in the floor of the mouth bilaterally and it has multiple ducts.

It has mixed secretion just like the submandibular gland.

*-Minor salivary glands*

Roughly from 600-1000 and located in many areas in the oropharyngeal and respiratory airway.

*-Embryology*

Parotid gland: pouching of the ectoderm into mesenchymal tissues forming ducts, acini, myoepithelial cells. Usually have some lymphatic structures around it come from mesenchyme.

Sublingual mainly from endoderm and wherever you have connective tissue it comes from mesenchyme.

***Why*** do we get tumors in salivary glands??

It’s not really understood why, but we have some theories that relate them to tobacco (e.g. Warthin tumor) other theories relate them to genetic mutation (mainly P53).

-Roughly speaking , to remember, most tumors ( around 75-80%) affect major salivary gland and 75% of these tumors affect parotid gland and 75% of parotid tumors are pleomorphic adenoma(benign).

-another rule easy to remember is the smaller the gland the more the chance that it will be malignant so if the patient has minor salivary gland (MSG) tumor , most probably its bad news while if he has a parotid gland tumor then he is lucky.

The percentage of malignancy:

Parotid gland around 15%

Submandibular gland has a higher percentage

Sublingual and MSG around 50%

Now we will start with benign salivary gland tumors

***a) pleomorphic adenoma***

-it’s called “pleomorphic “because histologically it has different cells (mixed cell origin).

-usually it’s a slowly growing tumor that mainly affects the parotid.

-an important characteristic is that it has *incomplete capsule* and this is important for two reasons:

1) It makes the surgical procedure more difficult because we can leave tumor tissue behind resulting in recurrences. So we cannot just remove the tumor itself, instead we go for superficial parotidectomy (removal of the whole superficial lobe which includes the tumor inside).

2) Having incomplete capsule prevents us from taking open biopsies as that could rupture the capsule with seeding of tumor cells to other places like skin.

-Note: incomplete capsule means it’s not a thick tough capsule easy to identify surgically which increases the possibility of recurrence.

-malignant transformation is possible but rare.

-The doctor then showed a picture and described it as follows: a clinical photograph showing the maxilla for a full dentate patient and we can see swelling on right side of the maxilla extending from premolar area to the junction of hard and soft palate ,almost reach the midline and covered by mucosa of a normal color.

What do you think the differential diagnosis??

1) Inflammatory lesion: unlikely but possible (problem in one of the teeth that causes abscess in the palate).

2) Could be cystic lesion (dentigerous, keratocyst)

3) Bony exostosis

4) Tumors like pleomorphic adenoma

***Warthin tumor***

- It’s the 2nd most common tumor happens almost exclusively in the parotid.

-Bilateral, related to smoking.

- Patient with autoimmune disease, decreased immunity, or previous radiotherapy has increased risk of having salivary gland tumor.

***Management of salivary gland tumor***

a) Full history and examination

We should know the characteristic of the lesion: rate of enlarging, does it have symptoms or not and is pain related to eating or drinking (which usually indicates functional problem in parotid like sialolithiasis).

If the lesion is isolated, painless, its size doesn’t change and it’s not related to drinking or eating usually it’s neoplastic.

b) Presentation

-in the parotid gland the tumor mainly affect the tail of the gland while in submandibular gland usually its diffuse swelling in the gland itself. In sublingual gland usually there is elevation in the floor of the mouth and the tongue becomes elevated.

-MSG: isolated discrete swelling. If it affects the nasal cavity the patient will complain of obstructed nasal passage. And if it affects the parapharyngeal wall the airway will be affected and the complain will be non-efficient respiration.

-if the tumor is malignant how the presentation will differ?

a) Possibility of neural symptoms (like if the patient complains of facial nerve palsy you should suspect malignancy).

b) Pain and deep fixation in malignancy. The pain isn’t necessarily from the tumor itself but because of invasion to adjacent structure that may cause hemorrhage or suppuration causing pain.

c) The overlying skin/ mucosa are usually ulcerated/ abnormal while in the case of a benign tumor they are normal.

d) Time frame of malignant tumors is narrow “faster growth”.

Malignant tumor in parotid gland: there will be a lump that extends externally with redness of skin (it could be penetrated in some cases) and it might go medially and invade structures like parapharyngeal wall in addition to enlarging intraorally. It might go up to TMJ.

c) Investigation

MSG: excisional biopsy.

Major salivary gland:

-proper imaging (CT, MRI) which gives a good idea about size and location of tumor.

-FNA (fine needle aspiration) core biopsy: we take certain cells from the tumor and it helps us to know the type of tumor without the need for open biopsy (which is contraindicated as we said earlier).

Note: biopsy for major salivary gland is actually a superficial parotidectomy.