

New York City College of Technology

Course: DEN 2311-D243

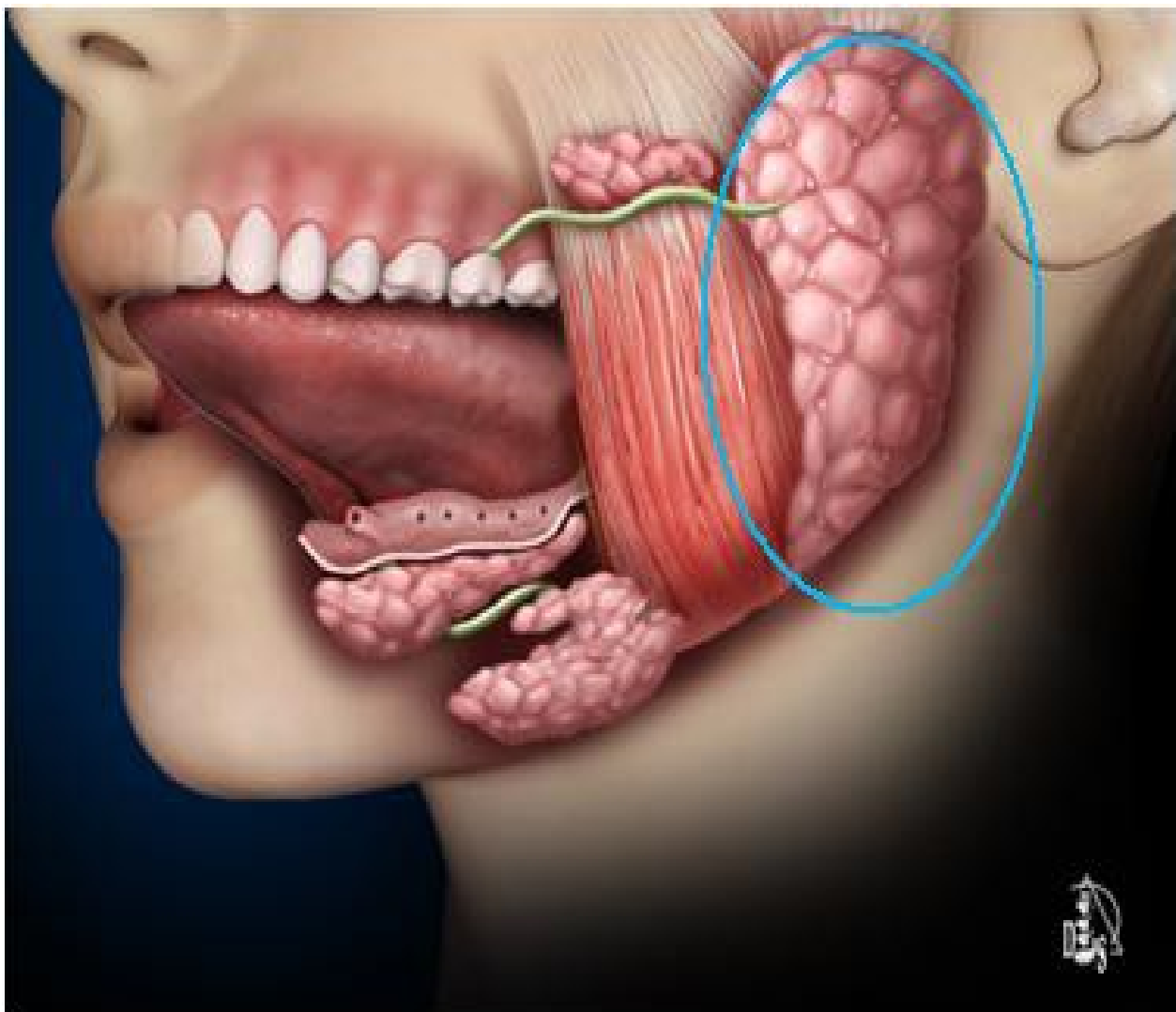
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Assignment:

PLEOMORPHIC ADENOMA



Pleomorphic Adenoma

(Pleos – many : morphus – form)

Pleomorphic Adenoma (PA) is the most common benign salivary gland tumor in adult which mainly affects the superficial lobe of the parotid gland and is also known as benign mixed tumor. The reason it's called mixed tumor is because it consists of both epithelial and mesenchymal elements and is found in the parotid glands (85%), minor salivary glands (10%), and the submandibular glands (5%). In most cases it involves the superficial lobe; however, it could involve the deep lobe (Dumb bell tumor) of the parotid gland and the pharyngeal space. On the other hand, minor salivary gland tumors most frequently occur on the palate, followed by the lips, cheeks, tongue, as well as the floor of the mouth. PA is followed by the second most common benign salivary gland tumor, Warthin's tumor.

Pleomorphic adenoma usually occurs because of the inability of saliva to drain due to blockage of the salivary ducts and the risk increases with smoking and exposure to radiation. PA is a glandular origin in the head and neck region and it's usually asymptomatic, encapsulated, slow growing, firm nodule, mobile, and painless because the parotid gland swells without involving the facial nerve. It measures about 2-6 cm and usually seen below the ear and cannot be moved above zygomatic bone (Curtain sign). If it's present as a large mass, it may have signs of facial nerve compression. It could also be present in deep lobe with pharyngeal mass (retrotonsillar mass) which cause difficulty swallowing (dysphagia) or snoring.

Furthermore, PA could occur at any age, but the highest incidence is mostly seen in women in the fourth to sixth decades of their life (30-50 years of age). In terms of diagnosis, FNAC important and diagnostic. CT scan is one of the primary imaging modalities used to assess tumors of the salivary glands. It allows the detection of lesions and assessment of their extension and characteristics. CT has some limitations and higher accuracy levels might be obtained through MRI. Incisional biopsy is contraindicated due to chance of injury to facial nerve, seeding and high chance of recurrence, and it could cause parotid fistula formation. However, a biopsy could be done to confirm whether the tumor is benign or malignant.

The gross appearance of PA is a firm smooth mass within a pseudocapsule and histologically the epithelial cells of this lesion make up a trabecular pattern that is contained within a stroma. The stroma could be chondroid myxoid, osteoid, or fibroid and the presence of these different elements accounts for the name mixed tumor. Microscopically, one characteristic of a pleomorphic adenoma is the presence of tumor projections outside the capsule. Additionally, PA appears radiographically as a radiolucent defect with well-defined cortical margins.

Surgical excision with adequate margins is the principle treatment of pleomorphic adenoma to avoid recurrence. If only superficial lobe is involved a superficial parotidectomy (Patey's operation) is performed. On other hand, total conservative parotidectomy should be performed if both lobes are involved (facial nerve is preserved). If the tumor involves the submandibular glands, a total removal of the gland along with tumor is done. Briefly, how pleomorphic adenomas are treated depends on the size, location, and which stage the tumor is. PA does not generally recur after adequate surgical excision. However, it might recur if there is

incomplete excision, seeding, cutting through the microscopic extracapsular projections thereby leaving some tumor behind. Also, rupture of the capsule and seeding of tumor cells when dissecting close of the capsule. Therefore, local enucleation should be avoided as it results in seeding of the tumor bed. A follow up of the patient is required to observe any signs of recurrences.

Additionally, if PA left untreated it could experience malignant changes because of its reoccurrence. This pleomorphic adenoma malignant transformation is long standing and is also known as carcinoma in ex pleomorphic adenoma (CA ex PA). Carcinoma ex pleomorphic adenoma is defined as a pleomorphic adenoma from which an epithelial malignancy is derived. The risk of malignant transformation is properly small, but it may occur in as many as 5% of all cases. Signs of malignant transformation will include rapid growth, ulceration, fixed on palpation, facial nerve palsy, and regional lymphadenopathy and it might cause restrictions of jaw movements. In the meantime, the most clinical presentation of CA ex PA is a firm mass in the parotid gland and another important factor is the extent of extra capsular invasion and histologic grade of the malignant component. Treatment of Ca ex PA often involves a surgical procedure which may be followed by radiotherapy. The stages of development of CA ex PA are associated with some specific genes and cell adhesion also plays a role in progression of this tumor. The prognosis of CA ex PA depends on the location, parameters or level of invasion, lymph node involvement and local or distant metastasis.

In terms of differential diagnosis, I believe PA could be confused with any of the following:

- Myoepithelial carcinoma
- Pleomorphic adenoma
- Nodular fasciitis
- Solitary fibrous tumor
- Fibrous histiocytoma
- Leiomyoma
- Schwannoma

Some other primary salivary tumors that include myoepithelial cell participation are classified in two categories such as follow:

Benign	Malignant
<ul style="list-style-type: none"> <input type="checkbox"/> Pleomorphic adenoma <input type="checkbox"/> Myoepithelioma <input type="checkbox"/> Basal cell adenoma 	<ul style="list-style-type: none"> <input type="checkbox"/> Adenoid cystic carcinoma <input type="checkbox"/> Polymorphous low-grade adenocarcinoma <input type="checkbox"/> Epithelial-myoepithelial carcinoma <input type="checkbox"/> Myoepithelial carcinoma (malignant myoepithelioma) <input type="checkbox"/> Carcinoma ex pleomorphic adenoma

In conclusion, salivary gland neoplasms could occur at any site where salivary tissue is present. Our job as dental hygiene personnel is detection and prevention of diseases and since salivary gland tumors arise in the oral cavity, it's our responsibility to detect any abnormalities while assessing the patient. Pleomorphic adenoma is the most common salivary gland tumor which is characterized by diverse histomorphological features and mostly commonly seen on the palate. Therefore, early diagnosis of the disease through medical history, clinical examination, radiographs and histopathological findings is essential for the treatment plan of any disease. The dental hygienist competencies focus on disease prevention and oral health promotion; thus referral to a dentist would become necessary in the event of disease cannot be controlled or prevented. Also, educating our patients about the connection between oral health and general health will necessitate a multidisciplinary approach to prevention and oral health promotion. Lastly, prevention and treatment of disease is the core of dental hygiene “the science and practice of the prevention of oral diseases; the integrated preventive and treatment services administered for a PT by a DH.”



Firm mass of the hard palate lateral to the midline.

Tumor of the pterygomandibular area.



<http://www.dentalcare.com/en-US/dental-education/continuing-education>

<http://www.slideshare.net/DRKALPAJYOTI/salivary-gland-tumors-52695122>

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References

1. Morita N, Miyata K, Sakamoto T, Wada T. Pleomorphic adenoma in the parapharyngeal space: report of three cases. *J Oral Maxillofac Surg.* 1995;53:605–610. [PubMed]
2. 1. Gnepp DR. Malignant mixed tumours of the salivary glands: a review. *Pathol Annu.* 1993;28:279–328. [PubMed]
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