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### Pleomorphic Adenoma of the Parotid Gland

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#### Abstract

Salivary gland tumours are rare, comprising less than 3% of all neoplasia of head and neck region. Pleomorphic adenoma is the most common salivary gland tumour, accounts for 60- 80% of benign tumours of salivary glands. Usually they are found as solitary unilateral, firm and mobile, painless, slow growing mass. Management involves surgical resection by superficial or total parotidectomy. Key words: Benign mixed tumor, parotid gland, pleomorphic adenoma, parotidectomy

*Keyword:* Pleomorphic adenoma, parotid

#### Introduction

About 70% of all salivary gland tumors arise in the parotid gland, and approximately 85% are benign. Pleomorphic adenoma (PA) represents 45-74% of all salivary gland tumors and 65% of them occur in the parotid gland. [1, 2, 3] PA presents clinically as a painless, slow-growing mass, usually varying from 2-6cm when resected [4]. Cases of giant PA have been reported in the parotid gland, presenting as an irregular multinodular mass that can weigh more than 8kg [1]. Most cases of giant PA were seen before 1980's, but some cases have been published recently [4-5]. These unusual cases are treated by parotidectomy, but the possibility of positive surgical margins and malignant changes must be considered. This paper describes a case of a giant pleomorphic adenoma arising in the parotid gland and treated by total parotidectomy with facial nerve preservation.

#### Case report

A 45-year-old man presented, complaining of a tumor on the right side of the face for more than 10 years. History dates back to 10 years when patient noticed swelling on left side of his face. Initially swelling was small in size and grows gradually to attain its present size. There is also slight reduction in the mouth opening since 1 month. Swelling is not associated with fever or any secondary changes. He has taken some medications for swelling but there was no relief. The nature of medication taken is not known to the patient. He was referred to the dental college for treatment. Patient does not give any history of previous dental treatment. Patient is married and has one child. All the family members are apparently healthy and do not suffer from any related illness. Patient is of moderate built and moderately nourished with normal gait and posture. Patient is comfortably seated and well oriented to time, place and surroundings. Patient is calm and quiet. Patient is answering to all

questions and her eyes to hand coordination are good. Face of the patient is asymmetrical with swelling on left side of his face. On extra oral examination a solitary oval shaped swelling measuring approximately 4 x 5 cm in size is seen on the left side of the face extending superiorly from tragus of the left ear to 1 cm below the angle of the mandible inferiorly and anteriorly from 4 cm in front of tragus of left ear to the posterior border of ramus of mandible. The left ear lobule is raised. The colour of the overlying skin is same as that of adjacent skin. The margins of the swelling are well defined. No visible pulsations can be seen. No sinus or discharge of pus or bleeding can be seen. There is also slight reduction in the mouth opening. The temperature of the overlying skin is same as that of adjacent skin. Swelling is firm in consistency, slightly tender, non fluctuant, non compressible, non reducible, non pulsatile in nature. It is not fixed to the underlying structures.



Image of left lateral view of face showing lesion of pleomorphic adenoma

On intraoral examination The gingiva around 37 and 38 region is firm and non tender. The teeth in the affected area are sensitive to percussion but no mobility could be demonstrated. Based on historical aspect and clinical examination a diagnosis of Pleomorphic adenoma of parotid gland was given.

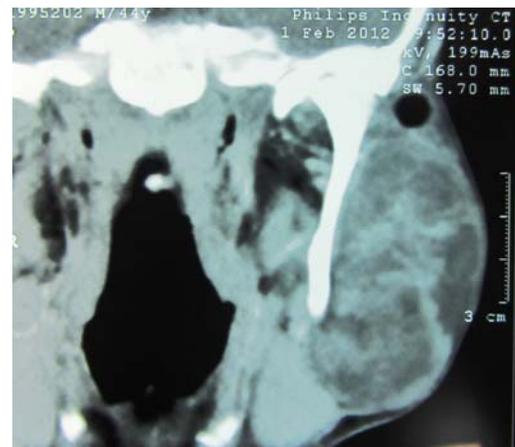
On further investigations Panoramic radiograph reveals partially edentulous maxilla w.r.t 26 and partially edentulous mandible w.r.t. 36, 45 and 46 along with root stumps i.r.t. 16, 17, 28, 37. It shows generalized bone loss. No other significant finding can be seen



Panoramic image

**CT scan:** CT scan shows a well defined encapsulated homogeneously hypodense soft tissue swelling of size 3.3 cm(ML) X 5.6 cm(AP) X 4.4 cm(SI) is seen in the superficial lobe of parotid gland in the anteroinferior part of the left parotid gland extending more anteriorly. It is extending into the soft tissue of cheek. left masseter muscle is not visualized separately from the mass.

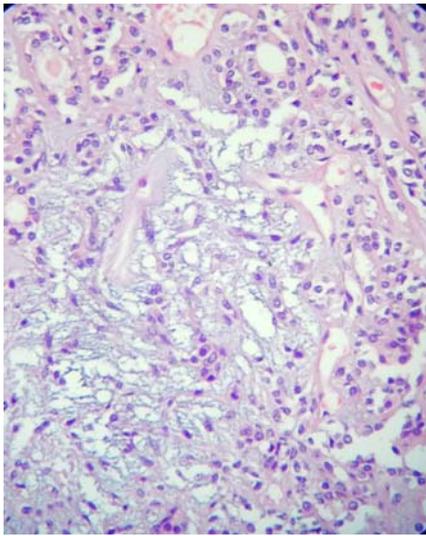
- Deep lobe of the parotid gland appears normal
- Major vessels appear normal
- No extension of the mass is seen in the surrounding tissues.
- No destruction of mandible is seen



Ct scan image

On histopathological examination section reveals , epithelial tumor cells arranged in the form of sheets and duct like pattern surrounded by fibrous capsule. The duct like spaces contain eosinophilic coagulum. The connective tissue stroma shows vessels and areas of haemorrhage. There is also present chondroid metaplasia and

highly cellular areas. These features are suggestive of Pleomorphic Adenoma.



H and E stained section in higher magnification showing typical features of a pleomorphic adenoma includes islands and strands of epithelium in a myxoid stroma

### Treatment

Under general anesthesia, it was performed a right total parotidectomy with preservation of the facial nerve and complete removal of the tumor en bloc. The postoperative course was uneventful. Macroscopically, the removed mass measured 28cm x 20cm x 16cm, and weighed 4.0 Kg. Microscopically the tumor was composed of islands and strands of epithelial cells immersed in a hyaline stroma, some showing squamous differentiation. Areas presenting spindle and plasmocytoid myoepithelial cells in a myxoid stroma were also abundant.



Post Operative Image Of The Patient

### Discussion

Pleomorphic adenoma is the most common salivary gland tumour with parotid gland being the most common affected site. The typical parotid tumour found below the lobule of the ear and overlying the angle of the mandible. On gross finding, pleomorphic adenoma is a single, firm, mobile, wellcircumscribed mass. The tumour may be whitish-tan to gray to bluish in colour. It may vary from a few millimetres to few centimetres or even to giant size. They are irregularly shaped 1, 2 and have a bosselated surface. Usually they are found as solitary, unilateral, firm and mobile, slow growing 1,2 asymptomatic mass. Symptoms and signs depend on the location. When the tumour occurs in the parotid gland, signs of facial nerve weakness are seldom encountered; in large neglected tumours, facial nerve weakness is likely to arise as the result of malignant change. Microscopically, PAs are characterized by a myriad of morphological diversity. Epithelial cells are arranged in sheets and islands showing typical ductal structures, and various epithelial and myoepithelial characteristics as spindle, clear, squamous, basaloid, plasmacytoid, oncocyctic and sebaceous. The stroma characteristically is mixed, with fibrous, chondroid, mixoyd or hyaline aspects [6,7].

The current case was formed predominantly by cuboidal and spindled cells embedded in a hyaline and myxoid stroma. The incidence of malignant transformation in PAs ranges from 1.9% to 23.3% [8]. The risk increases in tumors with long time of evolution, recurrences, advanced age of the patient and location in a major salivary gland [9]. Some authors postulated that the risk of malignant transformation increases from 1.6% in tumor with less than 5 years of evolution, to 9.5% for those presenting for more than 15 years [10]. The classic clinical history of carcinoma ex-pleomorphic adenoma is of a slow-growing mass for many years, with a recent fast growth [11]. A case of a giant PA with malignant transformation with this typical history was recently reported by Honda *et al* [5]. (2005) in a 72-year-old woman with a slow growing parotid lesion for 20 years, with a rapid increase

in the last 3 months. Schultz-Coulon <sup>[6]</sup>. (1989) reported 31 cases of giant PAs, and in 3 cases malignant areas were found within the tumor. Our patient presented all the characteristics for an increased risk of malignancy, however either clinically and microscopically there were no such evidences. The treatment of choice for PAs of the parotid gland is superficial parotidectomy with preservation of the facial nerve <sup>[12]</sup>. In two recent cases of giant PA reported in the literature, the resection of the tumors were performed with preservation of the facial nerve <sup>[5]</sup>.

### Conclusion

Pleomorphic adenomas are benign tumors and most commonly involves parotid gland. Proper diagnosis and careful surgical resection with preservation of facial nerve, helps in better prognosis with least chances of recurrence.

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