

## Case Report

# Oncocytoma of parotid gland: A rare benign tumor

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#### Abstract

Tumors of parotid glands are majority benign and commonest of them is Pleomorphic adenoma. Parotid Oncocytoma is a rare parotid tumor with incidence of 0.1-1.5% (rarest of salivary tumor type) of all parotid tumors, and it occurs in 6-8 decade of life. Patients commonly presents with a painless swelling in face. Because of its rarity and clinical presentation of tumor, there is a tendency to misdiagnose it. Only histopathology can confirm it. In these two case reports we have presented a case of 21 years old male and a 31 years old female with painless swelling in parotid gland and diagnosis of Oncocytoma has confirm by Histopathological examination.

**Key Word:** Oncocytoma, Parotid Gland, Salivary Gland Tumor, Parotidectomy.

## Introduction

Salivary gland neoplasm represents the most complex and diverse group of tumors encountered by head-and-neck surgeons. Their diagnosis and management is complicated by their relative infrequency (1% of head and neck tumors), the limited amount of pretreatment information available, and wide range of biological behavior seen.<sup>1</sup> Oncocytoma is predominantly composed of oncocytic cells lining the salivary ducts. The prefix onco is derived from the Greek word onkoustai, which means to swell. The term 'Oncocytoma' was proposed by Jaffe. Meza Chavez later proposed the term 'Oxyphilic granular cell adenoma'.<sup>2</sup> They are predominantly tumors that occur in those who are middle aged and above. Women, usually in the seventh or eighth decade, are likely to be affected. These tumors are slow growing and may rarely be bilater.<sup>1</sup>

Apart from the major salivary glands, oncocytes are also found in a great number of locations in the body such as respiratory tract, mammary glands, thyroid gland, pancreas, parathyroid gland, pituitary gland, testicle, fallopian tube, liver and stomach.<sup>3</sup> Physical examination usually reveals a painless, slow growing, non-tender, firm, lobulated, and mobile mass, but

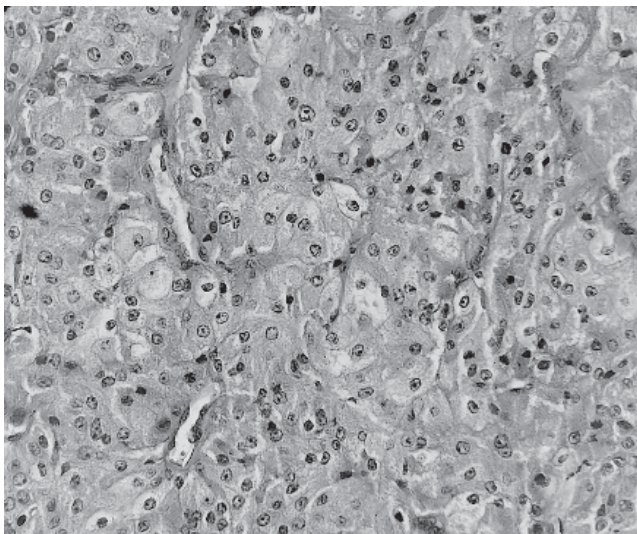
sometimes the patient refers to a clinician for the development of pain and/or facial nerve paralysis. Such symptoms were initially regarded as criteria of malignancy but later were observed in combination with benign tumors, such as Warthin's tumor, pleomorphic adenoma, lipoma, and PGO.<sup>4</sup> Alternative designations for the tumor are oncocytic adenoma, oxyphilic granular-cell adenoma and oxyphilic adenoma.<sup>5</sup> Diagnosis is confirmed by histological examination after parotidectomy.<sup>6</sup> We are presenting these two cases of parotid oncocytoma because both of them are young which is not common and we have to confirm the diagnosis after histopathology.

## Case Presentation

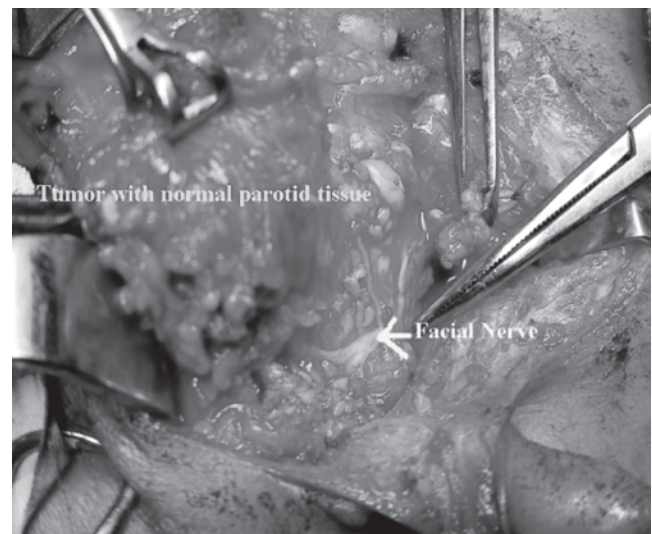
**Case 1:** A 21 years old male patient unmarried, normotensive, non-diabetic, non-smoker, hailing from Bogura, was admitted in RCH on 12.08.2023 with the complaints of gradual swelling over the right parotid region for 6 months. The swelling was painless and initially small but gradually increasing in size. There was no history of sudden increase or decrease in size of swelling while chewing food, no difficulty or pain while swallowing. There was no discharge from parotid duct opening, no restrictions on mouth opening, no history of fever, earache or facial

paralysis. General and systemic examination revealed no other abnormalities. On local examination revealed a solitary globular swelling,  $5 \times 3 \text{ cm}^2$  in size, over right parotid region. Temperature over the swelling was not raised, it was non tender, and surface was smooth, consistency was firm, well defined margin and border. The swelling was free from overlying skin and not fixed with structures like masseter and Sternomastoid muscle. Temporomandibular joint was normal. Facial nerve function was intact on both side.

Ultra sonogram showed a lobulated hypo echoic mass measuring about  $2 \times 2.3 \text{ cm}^2$  in right parotid gland.



FNAC showed chronic sialadenitis. A modified blair incision was given. Tumor mass was excised along with some surrounding normal tissue in the form of superficial parotidectomy. On grossly excised tissue was about  $5 \times 3 \text{ cm}^2$  in dimension, firm and brownish in color. On histopathology section showed an Oncocytoma composed of sheets of large round eosinophilic cells with dense granular cytoplasm. No malignancy was seen. Patient was followed up at sixth month and after one year. There was no complain of any growth and clinical examination was normal.

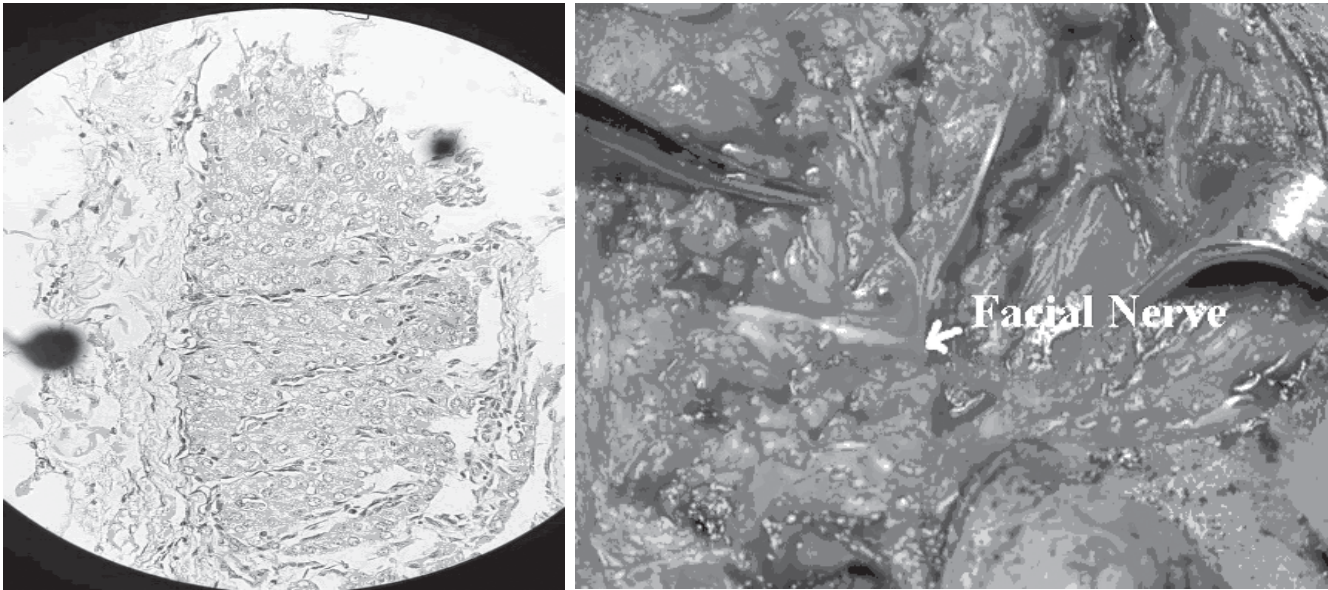


**Fig 1: Histopathology and Operative Picture of Case 1.**

**Case 2:** A 31 years old female patient married, normotensive, non-diabetic, non-smoker, hailing from Bogura, was admitted in RCH on 04.06.2024 with the complaints of gradual swelling over the right parotid region for 4 months. The swelling was gradually increasing in size. There was no history of sudden increase or decrease in size of swelling while chewing food, no difficulty or pain while swallowing. There was no discharge from parotid duct opening, mouth opening was normal, no history of fever, earache or facial paralysis. General and systemic examination revealed no other abnormalities. On local examination revealed a globular swelling,  $2 \times 1 \text{ cm}^2$  in size, over right parotid region. Temperature over the swelling was normal, it was firm, non tender, smooth, well defined margin and border. The swelling was free from

overlying skin and underlying structures like masseter & Sternomastoid muscle. Temporomandibular joint was normal. Facial nerve function was intact on both side.

Ultra sonogram showed a lobulated hypo echoic mass measuring about  $1.81 \times 0.9 \text{ cm}^2$  in right parotid gland. FNAC showed Pleomorphic Adenoma. A modified blair incision was given. Tumor mass was excised along with some surrounding normal tissue in the form of superficial parotidectomy. On grossly excised tissue was about  $2 \times 1.5 \text{ cm}^2$  in dimension, firm and brownish in color. On histopathology section showed an Oncocytoma composed of sheets of large round eosinophilic cells with dense granular cytoplasm. No malignancy was seen. Post-operative follow up was normal.



**Fig 2: Histopathology and Operative picture of Case 2.**

## Discussion

Parotid gland is the most common site of tumor in all salivary glands, and majority of tumors in parotid gland are benign. Most common benign tumor in parotid gland is pleomorphic adenoma, whereas most common malignant tumor is mucoepidermoid tumor.<sup>7</sup> Oncocytomas are rare benign tumors that comprise about 0.1 to 1.5% of all salivary gland tumors. It is benign neoplasm composed of oncocytes: large cells with abundant granular and eosinophilic cytoplasm. Parotid gland is the most common site of oncocytic changes. The risk factors of Parotid Oncocytoma are yet unknown. Its symptoms may be non-specific, such as pain, discomfort, or facial nerve paralysis. Often present as solitary slow growing painless masses, which are smooth and with some mobility upon clinical examination.<sup>4, 8, 9</sup> In our two cases Patient had slow growing painless swelling. Pathologically, oncocytoma is described as a well-circumscribed mass, composed of layers of oncocytes (small round nucleus and microgranular, eosinophilic cytoplasm). In our both cases histopathology showed sheets of large round eosinophilic cells with dense granular cytoplasm. Pathogenesis is quite obscure although mitochondrial functional defects are believed to mediate the progressive degeneration of the salivary

epithelial cells. Fine-needle aspiration is the procedure of choice for making a diagnosis in the majority of cases although its sensitivity is reported to be only 29%. FNAC has increasingly been used as a primary screening tool for salivary gland lesions with high levels of sensitivity and specificity. However, as salivary glands are notorious for having overlapping morphological features, diagnosis by cytology alone often becomes difficult. Histopathology remains the gold standard to clinch the precise diagnosis.<sup>1, 8</sup> Many salivary gland neoplasms (benign and malignant) present as oncocytic lesions on cytopathology, including Warthin tumours, pleomorphic adenoma, oncocytoma oncocytic carcinoma, acinic cell carcinoma, mucoepidermoid carcinoma, cystadenoma, cystadenocarcinoma, and metastases.<sup>10</sup> The histological differential diagnosis of Oncocytoma includes Warthin's tumor, Acinic cell carcinoma, Clear cell carcinoma, Oncocytic carcinoma, Mucoepidermoid carcinoma and Metastatic renal cell carcinoma.<sup>2</sup> Oncocytomas do not have reliable distinguishing features on a CT scan or an Ultra sonogram of the parotid.<sup>11</sup> Intra operatively, the tumors were multilobulated, brownish red in colour and were firm in the gross appearance. Oncocytomas are best treated by surgical excision with a small margin of normal surrounding tissue. In the parotid gland, this

usually involves partial parotidectomy to avoid violation of the tumor capsule. The facial nerve should be preserved whenever possible.<sup>2</sup> In our two cases we have excised the tumors along with surrounding normal tissue in the form of superficial parotidectomy. Postoperative period was uneventful.

## Conclusion

Oncocytoma of parotid gland is a rare benign tumor and the absence of characteristic imaging and clinical features makes the diagnosis difficult. Malignant degeneration to oncocytic carcinoma is possible. Both FNAC and imaging is not conclusive. Histopathological examination is warranted to confirm the diagnosis. Treatment of choice for such tumors is either a superficial or total parotidectomy based on the location and extent of tumor. Since it is a less aggressive neoplasm, there is no need for adjuvant therapy. For patients with an indefinite diagnosis or symptoms, a complete resection is recommended.

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