

## Primary Squamous Cell Carcinoma of Parotid Gland- Case Report

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### **Authors' contributions**

*This work was carried out in collaboration among all authors. Author SV designed the study, performed the statistical analysis, wrote the protocol and wrote the first draft of the manuscript. Authors AP, MM, AKT and AK managed the analyses of the study. Author AP managed the literature searches. All authors read and approved the final manuscript.*

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Case Study

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### **ABSTRACT**

Malignant neoplasms of salivary glands are rare, accounting for 6% of all head and neck malignancy. Incidence of primary squamous cell carcinoma of parotid gland is 0.3% to 1.5%. Squamous cell carcinoma of parotid gland is an aggressive malignancy seen mostly in adults in their 5<sup>th</sup> or 6<sup>th</sup> decade of life. Here we report a case of primary squamous cell carcinoma of parotid gland in a 29 years old, male patient. He had an infra-auricular swelling on right side of face progressively increasing in size since the age of 6 years and he had facial nerve paralysis since 10 years of age. Patient was diagnosed with squamous cell carcinoma of parotid gland at the age of 29 years. He underwent total parotidectomy without neck dissection elsewhere. Recurrence of tumour was there at the primary site within five months of the treatment of primary tumour. Recurrent tumour was treated successfully by wide local excision with level I-V neck dissection. Reconstruction was done with pectoralis major myo-cutaneous flap and patient had post-operative radiotherapy and chemotherapy.

*Keywords: Parotid gland; squamous cell carcinoma; facial nerve.*

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## 1. INTRODUCTION

Parotid gland tumours have histological diversity and a wide spectrum of biological behaviour. Common malignant neoplasm of major salivary glands are mucoepidermoid carcinoma (36%), Adenoid cystic carcinoma (20%), Adenocarcinoma (14%) and Squamous cell carcinoma (6%) [1]. Squamous cell carcinoma of parotid gland is usually due to metastasis from cutaneous malignancy of face and scalp to intra-parotid and peri-parotid lymph nodes. Primary squamous cell carcinoma of parotid gland accounts for very few cases (0.3%-1.5%) [2]. Diagnosis of Parotid gland squamous cell carcinoma is done with fine needle aspiration biopsy (FNAB). FNAB of parotid gland tumours have high specificity (97%) in differentiating benign and malignant lesions and in differentiating non-neoplastic from neoplastic lesions (98%) [3]. Facial nerve paralysis is associated with 35% of parotid gland malignancies [4]. Treatment of parotid gland malignancies is mainly surgery with adjuvant postoperative radiotherapy.

## 2. CASE REPORT

A 29-years -old male patient, farmer by profession, presented in outpatient department with complaints of swelling in right parotid area and neck with right sided facial weakness since six years of age. Swelling was progressively increasing in size and was painful. Skin over the swelling was ulcerated. Patient had undergone total parotidectomy five months back elsewhere, with recurrence of swelling after two months of surgery at same site. Post-operative histopathology was squamous cell carcinoma. Addiction history was negative for smoking and alcohol. On inspection, a 10cm X 10cm swelling was present in the right parotid region with superior extent being the ear lobule, inferiorly it extended to an imaginary line passing through superior border of thyroid cartilage, medially up to the angle of mandible posteriorly to anterior border of trapezius muscle, irregular surface, with central degeneration of the covered skin and tumour fungating (Fig. 1). There was no evidence of any ulcer or growth in any other part of head and neck region. On palpation it was tender, non-pulsatile, hard, bleed on touch, mobility was restricted in both horizontal and vertical directions, no local rise of temperature. On auscultation, no bruit present. Patient had right sided facial nerve palsy (House Brackmann Grade VI), lower motor neuron type. FNAB was

done and was suggestive of squamous cell carcinoma. Contrast enhanced MRI was done which showed absent parotid gland on right side, tumour mass abutting the carotid vessels with displacement of carotid vessels medially, right sternocleidomastoid muscle was infiltrated (Fig. 2 a and b). MR Angiogram revealed normal study. USG Abdomen showed normal study. Chest X ray and other routine investigation were within normal limits. Orthopantomogram suggested mandible to be free of disease. Patient was operated with wide local excision and Modified neck dissection - level I-V lymph node dissection, excision of sternocleidomastoid muscle on right side (Figs. 3 and 4), with reconstruction with Pectoralis Major Myocutaneous Flap (Fig. 5a and b). Intra-operative there was preservation of spinal accessory nerve and internal jugular vein, facial nerve could not be traced. Post-operative histopathology was suggestive of well differentiated squamous cell carcinoma, with all nodes free of disease (Fig. 6). Patient received External Beam Radiotherapy 60 Gy/ 30# in two phases on right side of neck and 4 cycles of chemotherapy with cisplatin. Patient is on regular follow up for last six months and is free of disease and is planned further for reconstructive surgery for facial nerve paralysis (Figs. 7 and 8).



Fig. 1. Pre operative

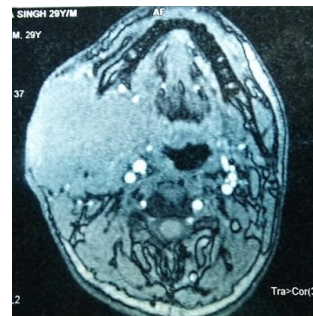


Fig 2a. MRI (axial section)



**Fig. 2b. MRI (Coronal section)**



**Fig. 3. Per operative**



**Fig. 4. Excised tumour**

### 3. DISCUSSION

The mean age of presentation of squamous cell carcinoma of parotid gland is 64 years with a male predominance (male: female- 2:1) [5]. In this case, the age of presentation was 3<sup>rd</sup> decade of life, that is an early presentation, a rare occurrence.

Squamous cell carcinoma of parotid gland is more commonly due to metastasis from cutaneous malignancy of face and scalp. Primary squamous cell carcinoma of parotid gland is very rare (0.3-1.5%) [1]. Present case had no evidence of cutaneous malignancy of head and neck region and no evidence of tumour in any

other part of body could be found, suggesting it to be primary squamous cell carcinoma.

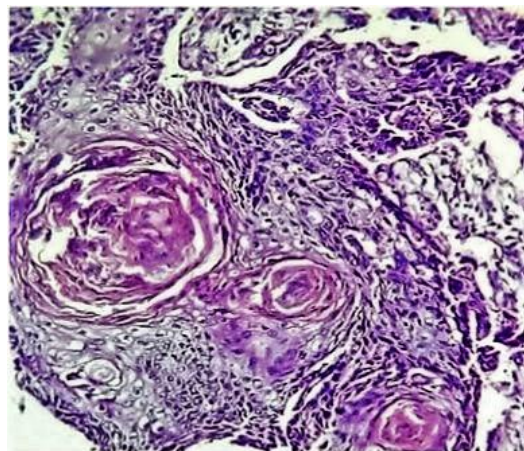
Facial nerve paralysis is a sign of malignancy in parotid gland. Katoch et al have reported 34% incidence of facial palsy in malignancy of parotid gland [4]. Present case presented with facial weakness since 10 years of age, after initial treatment with total parotidectomy facial weakness persisted. There was no anatomical evidence of facial nerve on revision surgery. Patient presented with House Brackmann grade VI facial nerve palsy.



**Fig. 5a. Pectoralis major (myocutaneous flap) reconstruction**



**Fig. 5b. Flap reconstruction (Follow up)**



**Fig. 6. Histopathology**



**Fig. 7. Follow up (6 months)**



**Fig. 8. Follow up (6 months)- Right facial nerve paralysis**

Fine needle aspiration cytology is a valuable tool for diagnosing a parotid gland swelling with high specificity (97%) [3].

Yu Lan et al. have reported local and regional recurrences of primary squamous cell carcinoma of parotid gland to be common than distant metastasis with ear lobule most common for local recurrence, neck for regional recurrence, and lung for distant metastasis [6]. In the present case patient presented with local recurrence, may be because neck dissection was not done with the primary resection that is total parotidectomy. Yu Lan et al have reported a time of average of less than 8 months for recurrence of tumour after the treatment of the primary which is consistent with the present finding of recurrence within 5 months of treatment of primary [6].

In Squamous cell carcinoma of parotid gland 60% occult metastasis to cervical lymph nodes is seen thus suggesting neck dissection to be an integral part of treatment of squamous cell carcinoma of parotid gland as was performed in revision surgery in this case [6].

Post-operative radiotherapy is indicated in parotid gland tumours size > 4 cm, deep lobe involvement, high grade tumour, lymph node involvement, advanced stage, positive surgical margins, perivascular and perineural invasion,

nerve infiltration, recurrent tumour and soft tissue extension [7,8]. In view of enormous size of tumour patient was advised radiotherapy.

#### **4. CONCLUSION**

Primary Squamous cell carcinoma of parotid gland is a relatively uncommon disease, which can present early in life, with facial paralysis. Facial nerve palsy is an indicator of malignancy. FNAC plays a key role in diagnosing a parotid malignancy. Squamous cell carcinoma of parotid should be treated with excision of the primary followed by neck dissection as there is high incidence of occult metastasis in the neck lymph nodes. Post-operative radiotherapy should be advised in cases of large parotid tumour.

#### **CONSENT**

As per international standard or university standard, patient's written consent has been collected and preserved by the author(s).

#### **ETHICAL APPROVAL**

As per international standard or university standard written ethical approval has been collected and preserved by the author(s).

#### **COMPETING INTERESTS**

Authors have declared that no competing interests exist.

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