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Case Report

Extended radical parotidectomy with mastoidectomy and facial nerve resection for advanced parotid malignancy: a case report

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ABSTRACT

Advanced parotid malignancies with perineural spread pose significant surgical challenges and often require aggressive multidisciplinary management. We report a case of a 52-year-old male who presented with a progressively enlarging right parotid swelling for 1.5 years associated with right lower motor neuron facial nerve palsy for one year. Patient was evaluated clinically and radiologically. Fine needle aspiration cytology initially suggested mucoepidermoid carcinoma. The patient underwent radical parotidectomy with extended radiacal neck dissection, intact canal wall mastoidectomy, facial nerve resection through a combined surgical approach involving ENT and surgical oncology teams. Intraoperatively, tumour infiltration into the sternocleidomastoid muscle, internal jugular vein, spinal accessory nerve and posterior belly of digastric was noted, necessitating an extended radical resection. Final histopathology revealed salivary duct carcinoma with lymphovascular and perineural invasion and nodal metastasis. Postoperative radiotherapy was planned as adjuvant therapy. This case highlights the importance of aggressive surgical management with skull base exposure in advanced parotid malignancies with perineural spread to achieve optimal oncological clearance.

Keywords: Parotid malignancy, Salivary duct carcinoma, Extended radical parotidectomy, Facial nerve resection, Mastoidectomy, Perineural invasion

INTRODUCTION

Tumours of the salivary glands account for a small proportion of head and neck neoplasms, with the parotid gland being the most commonly involved site. Approximately 70–80% of salivary gland tumours arise from the parotid gland, of which nearly 10–20% are malignant.[1] Salivary duct carcinoma is an aggressive subtype characterized by rapid growth, early regional metastasis, and a high propensity for perineural invasion.[2]

Perineural spread along the facial nerve represents an important adverse prognostic factor and often indicates advanced disease. Such tumours may extend proximally toward the temporal bone through the stylomastoid foramen and facial canal, necessitating more extensive surgical approaches.[2] surgical excision remains the cornerstone of treatment for parotid malignancies, frequently combined with neck dissection and adjuvant radiotherapy in high-grade or advanced lesions.[3]

Extended radical parotidectomy with facial nerve sacrifice is indicated when the nerve is involved by tumour or when pre-operative facial nerve paralysis is present. In cases with proximal perineural extension, mastoidectomy may be required to achieve adequate oncological clearance of the facial nerve within the temporal bone.[4]

Here, we present a rare case of advanced parotid malignancy with facial nerve involvement and perineural spread managed with extended radical parotidectomy combined with mastoidectomy and facial nerve resection, highlighting the importance of a multidisciplinary surgical approach.

CASE REPORT

A 52-year-old male presented with a swelling of the right parotid region for 1.5 years duration. There was a history of rapid growth of the swelling since the last 1 year and right facial nerve palsy for the past 1 year.

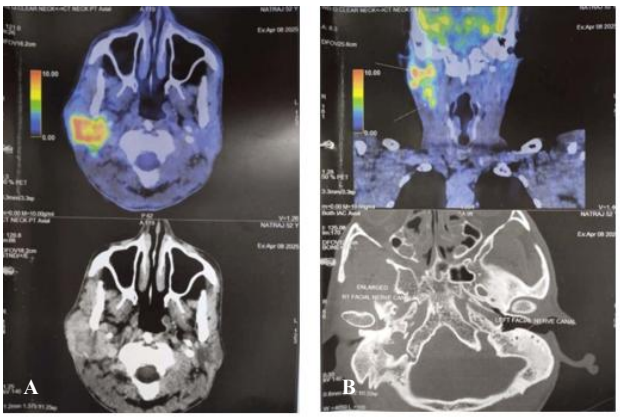

Figure 1 (A and B): PET CT images of the tumour.

On examination the swelling measured around 5×4 cm which was hard, non-tender and not mobile. The patient had grade 5 LMN facial nerve paralysis and enlarged right level II lymph node.

Figure 2: Clinical picture prior exploration.

CT showed ill-defined heterogeneously enhancing soft tissue lesion with area of necrosis measuring 2.3×2 cm noted in right parotid gland extending to deep lobe, heterogeneously enhancing right level II lymph node measuring 2.2×2 cm causing mass effect over the right IJV without evidence of filling defect, loss of fat plane (abutting) between the level II node and right external carotid artery at C3 level above the hyoid bone.

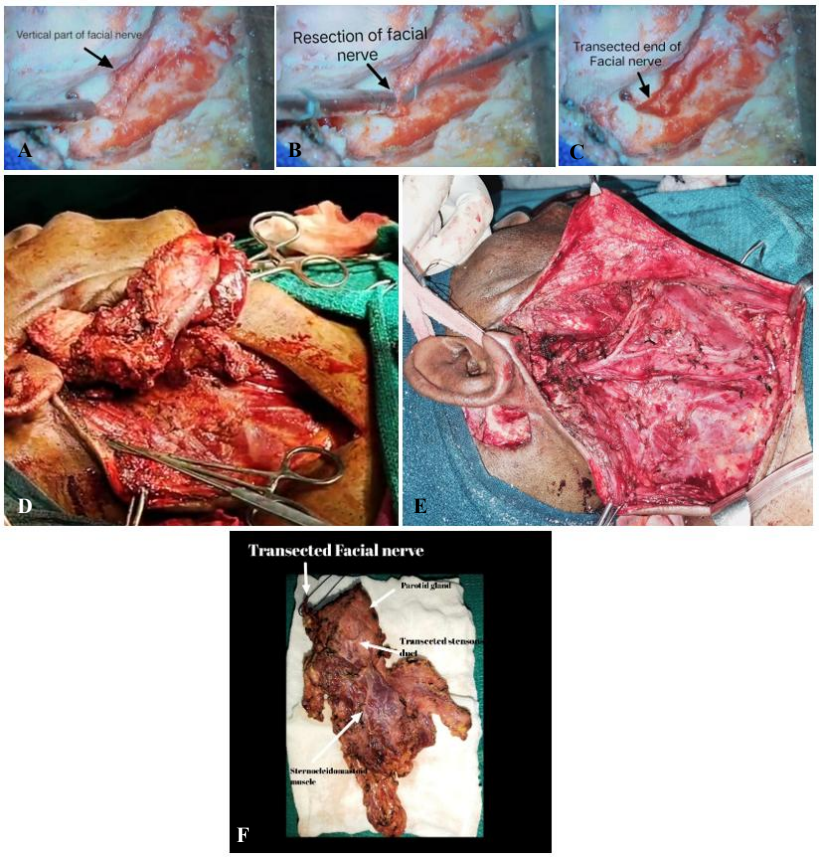

Figure 3 (A-F): Photograph of the specimen removed in toto.

PET CT was suggestive of heterogeneously enhancing, hyper metabolic mass infiltrating deep and superficial lobe of parotid with perineural tumour extension along the mastoid and tympanic part of right facial nerve with widening of right facial canal in right mastoid temporal bone, with enlarged hyper metabolic level II and III lymph nodes. Fine needle aspiration cytology (FNAC) was suggestive of Mucoepidermoid carcinoma of right parotid gland.

Treatment

With a working diagnosis of Mucoepidermoid carcinoma of right parotid gland with grade 5 LMN Facial nerve palsy, an extended radical parotidectomy with intact canal wall mastoidectomy and excision of facial nerve was planned. Upon exploration, the enlarged node was found to be encasing IJV as per CT and also infiltrated the sternocleidomastoid (SCM), spinal accessory nerve and posterior belly of digastric muscle, so a more radical approach – including radical parotidectomy with extended radical neck dissection was done. With the contribution of ENT surgeons, microscope assisted mastoidectomy and posterior tympanotomy was done, the 2nd genu of facial nerve and facial canal was identified by facial recess approach and the same was drilled open to expose the vertical part of facial nerve and the facial nerve was mobilized and resected at the 2nd genu, subsequently the dissected specimen along with intact facial nerve was removed from below the foramen. Instead of resecting the temporal bone, simple mastoidectomy was done and the involved facial nerve was removed along with the gland and other involved structures.

The final histopathological report was that of salivary duct carcinoma, extensively infiltrating connective tissues, showing lymphovascular invasion and perineural invasion with adjacent lymph nodes tumor positivity, hence post-operative radiotherapy has been planned for the patient.

DISCUSSION

Tumors of the parotid gland represent approximately 70% to 80% of salivary gland neoplasms, 10% to 20% of which are found to be malignant and the parotid gland represents the most common primary site of salivary gland malignancies.[4] Surgical resection remains the mainstay of treatment for parotid gland neoplasms, but several negative prognostic indicators have been identified that often dictate the need for adjuvant treatment. Perineural invasion (PNI) has historically been one such negative prognosticator.[5]

This case illustrates the combined approach of extended radical parotidectomy with extended radical neck dissection along with Mastoidectomy and facial nerve resection to provide extensive tumour removal for a possibly unresectable parotid malignancy since surgery is the only option for cure. Radical parotidectomy was decided as the facial nerve functions were already compromised and the adjuvant radiotherapy is believed to improve the outcome of such a radical procedure and prevent further recurrences since there was perineural invasion, lymph node positivity and advanced T staging. Surgery is still a hope for curative treatment with acceptable morbidity by involving specialty teams for multimodal management.

CONCLUSION

Advanced parotid malignancies with facial nerve involvement require aggressive surgical management to achieve adequate oncological clearance. This case demonstrates that radical parotidectomy with extended radical neck dissection combined with mastoidectomy and facial nerve resection can facilitate complete tumour excision even in locally advanced disease with skull base extension. A multidisciplinary approach involving otolaryngology and surgical oncology teams plays a critical role in managing such complex cases. Adjuvant radiotherapy further improves disease control in the presence of high-risk pathological features such as perineural invasion, lymphovascular invasion, and nodal metastasis.one can achieve negative margin even in case of perineural spread and if we can achieve negative margin in this extensive procedure, we can provide local recurrence free survival to the patient. This report highlights the role of combined oncological and otorhinolaryngologist intervention to achieve loco regional control in case of advanced parotid malignancy.

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REFERENCES

1. Paul M. Speight, A William Barrett,Salivary gland tumours: diagnostic challenges and an update on the latest WHO classification, Diagnostic Histopathol. 2020;26(4):147-58.
2. Tamaknand V, Nangarwal B, Choudhary D, Godara R, Garg P. Salivary duct carcinoma: a case report. J Evol Med Dent Sci. 2016;5(50):3226-8.
3. Spiro RH. Salivary neoplasms: overview of a 35-year experience with 2,807 patients. Head Neck Surg. 1986;8:177-84.
4. Young A, Okuyemi OT. Malignant Salivary Gland Tumors. In: StatPearls Treasure Island (FL): StatPearls Publishing; 2026.
5. Kim YH, Chung WK, Jeong JU, Cho IJ, Yoon MS, Song JY, et al. Evaluation of Prognostic Factors for the Parotid Cancer Treated With Surgery and Postoperative Radiotherapy. Clin Exp Otorhinolaryngol. 2020;13(1):69-76.
6. Varghese, Bipin Thomas. Extended Total Semiconservative Parotidectomy with Skull Base Resection. Oral Oncol Reports. 2025;13.

7. The Surgical Management of Advanced Malignancies of the Parotid Gland - Katsantonis - 1989 - Otolaryngology–Head and Neck Surgery - Wiley Online Library. Available at: https://aao-hnsfjournals.onlinelibrary.wiley.com/doi/10.1177/0194599888910100604. Accessed 29th May 2025.
8. Schmitt NC, Kang H, Sharma A. Salivary duct carcinoma: An aggressive salivary gland malignancy with opportunities for targeted therapy. Oral Oncol. 2017;74:40-8.

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