



Radical Parotidectomy and Neck Dissection on Right Parotid Malignancy with Lymph Node Bilateral Metastasis: A Case Report

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Abstract: Malignant salivary gland is a rare gland tumor, with parotid gland as the most common site. Parotidectomy for parotid gland malignancy includes management of primary salivary cancer, metastatic lymph nodes, and direct extension from surrounding structures or cutaneous malignancies. We reported a 66-year-old male referred to the hospital because of a lump at the bottom of the right ear three months ago. The lump got more significant day by day and suddenly it felt progressively enlarged. The patient complained of pain in the lump. The tumor size was 10x4 cm, immobile, fixed to underlying tissue, and had the same color as the surrounding skin. Ultrasonography showed lymphadenopathy at the right side of neck with multiple malignant node metastasis. The patient was diagnosed as right parotid malignancy, therefore, a radical parotidectomy was performed on him. The histopathological examination obtained squamous cell carcinoma identified as keratinized. After the surgery, the patient complained of right facial weakness. The patient then underwent medical rehabilitation for further treatment of his facial weakness. In conclusion, the malignancy of the parotid gland was uncommon, hosting the majority of all salivary gland tumors are benign. Successful management depends on prompt diagnosis, accurate histopathological evaluation, and a comprehensive multidisciplinary approach to develop optimal treatment plans.

Keywords: malignancy of parotid gland; radical parotidectomy; neck dissection

INTRODUCTION

Malignant salivary gland is a rare gland tumor, and the most common tumor site is the parotid gland. Due to its rarity, the prognosis is difficult to assess.¹ Nutrition may be a risk factor as well as irradiation or a long-standing histologically benign tumor in youth.¹ Diagnosis is based on an imaging scan (ultrasonography, CT scan, and/or MRI) and fine needle aspiration cytology or core needle biopsy.² Jering et al³ reported 5 years of cancer-specific survival of 87,3% among patients with primary cancer and 54,5% among patients with metastatic cutaneous squamous cell carcinoma.

Parotidectomy for parotid cancer includes management of primary salivary cancer, metastatic cancer to lymph nodes, and direct extension from surrounding structures or cutaneous malignancies.⁴ This case report was performed on a male patient with a malignancy of parotid gland who got radical parotidectomy.

CASE REPORT

A 66-year-old male was referred to the hospital because of a lump at the bottom of his right ear three months ago. The lump got more significant day by day and suddenly it was felt progressively enlarged. The patient complained of pain in the lump. His medical history included acute kidney disorder with repair of kidney stones, hypertension, and hyperuricemia. He had no complaints of nosebleeds, tinnitus, decreased smell, loss of weight, and difficulty in swallowing.



Figure 1. Clinical view (A, anterior view; B, lateral view)

On the physical examination of the right side of neck, it was found that the tumor size was 10 x 4 cm, immobile, fixed to underlying tissue, and had the same color as the surrounding skin. The supraclavicular region was found to have multiple lump sizes of 2 x 2 cm, fixed to underlying tissue, hard, with no pain, and had the same color as the surrounding skin. Chest examination and chest x-ray showed cardiomegaly and lungs within normal limits. Ultrasonography showed a lobulated peripheral iso-hypoechoic lesion on the right side of neck impression of the parotid gland (size $\pm 3.14 \times 2.12 \times 2.35$ cm) suggestive of malignancy. Multiple malignant lymphadenopathies at the right side of neck were level II, III, IV, V, and at the left side of neck was level IV (largest size $\pm 1.57 \times 1.19$ cm) suspected as node metastases.

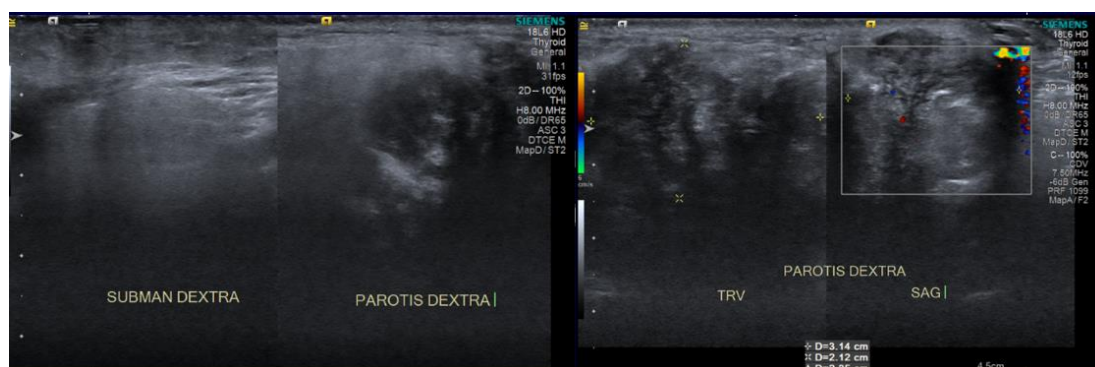


Figure 2. Ultrasonography showed lesion on the right parotid gland suspected as malignancy

The cervical CT-scan revealed solid contrast mass enhancement in the right parotid gland, suggestive of malignancy, accompanied by multiple lymphadenopathies at the level of submandibular-bilateral paracervical/jugular, especially in the right naso-oropharynx they were not thickened and did not look like a solid mass, and the fossa of Rosenmüller looked concave with mild right ethmoidal sinusitis.

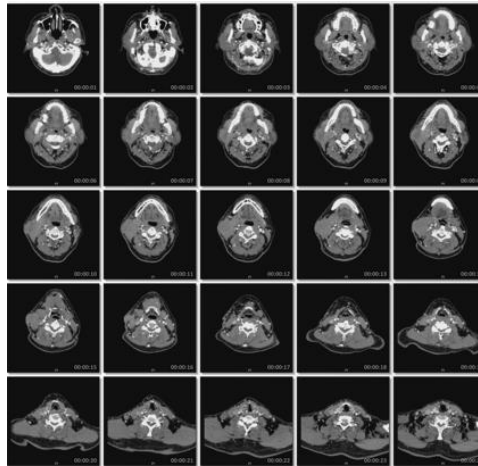


Figure 3. CT-Scan cervical showed a mass in the right parotid gland



Figure 4. Clinical view. A, pre-operative; B, intraoperative; C, specimen of tumor

A radical parotidectomy was performed on the right parotid with tumor infiltrating the skin. An incision was made from the anterior part of the right ear in a postero-caudal direction around the edge of the tumor with a margin of 1 cm. The tumor infiltrated the right parotid gland, lymph gland, sternocleidomastoid muscle, accessories nerve, part of the facial nerve, and the internal jugular vein. Superficial and deep parotid glands were removed, and right radical neck dissection was performed. Tumor-infiltrating tissue and lymph nodes were removed with preservation of external and internal carotid arteries, and peripheral nerve neurectomy was performed. Control of the bleeding with vein repair and ligation of carotid artery branches, reconstruction, and closure of the defect with a skin flap complex in the right deltopectoral area were carried out.



Figure 5. Clinical post-operative view (A, anterior view; B, lateral view)

The histopathological examination obtained squamous cell carcinoma identified as keratinized. Two days after surgery, the patient complained of difficulty in closing the right eyelid and weakness on the right side of the face, but he could get out of bed. He received further therapy from a rehab consultant. There was a decrease in hemoglobin level from 12.6 g/dL to 8.5 g/dL. Therefore, he got a blood transfusion of two bags, and no side effects were found from the transfusion. He was hospitalized for five days, and was further observed at the outpatient care. When the patient returned for a follow-up at the hospital, he still complained of the right facial weakness, although it was better compared to immediately after the surgery. The patient was then referred for consultation and co-managed with medical rehabilitation for facial therapy.

DISCUSSION

Salivary gland neoplasms may be benign or malignant, and the malignant tumors can be primary or metastatic. Moreover, salivary glands are a common source of benign pathology, meanwhile, malignant tumors are rare. Most salivary gland tumors occur in the parotid gland; about 10% in the submandibular gland, and less than 4% in the minor salivary gland.⁵ The patient, in this case, was a 66-year-old male. The literature states that a malignant parotid gland tumor is mainly found in the fifth to sixth decades. Malignant salivary gland tumors usually present after the 6th decade of life, whereas benign lesions present in the 4th to 5th decades.⁶

A physical examination on the right side of the patient's neck found a tumor sized 10 x 4 cm, immobile, fixed to underlying tissue, and had the same color as the surrounding skin. The supraclavicular region was found to have multiple lumps sized 2 x 2 cm, fixed to underlying tissue, hard, with no pain, and the same color as the surrounding skin. Ultrasonography suggests malignancy and node metastases. Wierzbicka et al⁷ reported that malignancy of the parotid gland presenting as large, fixed preauricular masses could be associated with cervical lymph node metastasis. Facial nerve paralysis could be seen in up to 12 to 15% of cases and was often associated with adenoid cystic carcinoma (AdCC), mucoepidermoid carcinoma (MEC), and salivary duct carcinoma. Evaluation options included ultrasound as the first non-invasive option for evaluating major salivary gland tumors, primarily the superficial parotid lesions.

The treatment recommendations are based on the literature review and guidelines. Generally, a primary surgical excision with safety margins and appropriate lymph node chain dissection is necessary for proven positive regional metastasis in high-risk patients. However, there is still debate about the role of neck excision in clinically negative cases and the extent of parotidectomy required.⁹

In this study, histopathological result showed squamous cell carcinoma. Wide local excision is the preferred treatment for all malignant salivary gland tumors. Superficial parotidectomy is the standard procedure for excising benign and malignant tumors in the superficial lobe of the parotid gland while preserving the facial nerve. For lesions located in the deep lobe or advanced cases, a total parotidectomy is required. If the facial nerve is affected, a radical total parotidectomy with removal and reconstruction of the facial nerve is necessary. The disadvantages of superficial parotidectomy include the risk of removing too much parotid tissue, which can result in loss of parotid function, as well as the potential for facial nerve paralysis due to complete dissection of the nerve. For smaller, low-grade tumors in the lateral or latero-inferior region of the superficial lobe, partial superficial parotidectomy—where the cancer is removed with a normal margin of parotid tissue and only the facial nerve near the tumor is dissected—has been suggested as a suitable approach.⁸ The patient in this study had complained partial facial weakness due to facial nerve paralysis as the complication of parotidectomy. Several factors that can contribute to the occurrence of facial nerve palsy following parotidectomy, are surgical technique, tumor characteristics, and patient-related factors. The tumor in this case was a large one (more than 4 cm) and presented an incidence of facial nerve palsy. That is consistent with other studies reporting that increased tumor size correlated with greater surgical complexity and a higher likelihood of nerve injury.⁹

The histopathological of primary salivary malignancies is diverse with different prognoses. For metastatic diseases to the parotid gland, the tumors are often biologically aggressive, with a

tendency for perineural invasion and distant spread.¹⁰ Therefore, in our patient, wide local excision is the preferred treatment, and superficial and deep parotid glands were removed.

CONCLUSION

Salivary gland tumors, though rare, can be malignant or benign, with parotid glands being the most common site. Surgical treatment, including wide local excision or parotidectomy, depends on tumor size and location, with the facial nerve's involvement influencing the approach. In our study, we highlight the complication of radical parotidectomy with transient paralysis observed. Preoperative assessment and counseling, including imaging and biopsy, are crucial for determining the appropriate treatment. Thorough and adequate postoperative care for patient prepare to the possibility of facial nerve dysfunction and recovery of post parotidectomy is undoubtedly necessary. For metastatic tumors, especially from skin cancers, surgery requires careful planning due to their aggressive nature and potential for nerve invasion.

Conflict of Interest

The authors affirm no conflict of interest in this study.

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