

LEFT ACCESSORY PAROTID GLAND PRIMARY SQUAMOUS CELL CARCINOMA: A RARE CASE

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ABSTRACT

Introduction: Accessory parotid gland is a distinct salivary gland structure found alongside the major parotid gland, which is found in 21 – 32.1% population. Accessory parotid gland tumors account for 1 – 7.7%, but they have a higher malignancy rate than other major parotid gland tumors. We would like to write a case of left accessory parotid gland primary squamous cell carcinoma in a 67-year-old man.

Case Report: A 67-year-old man presented with a progressively increasing mass in his left cheek three months before admission without accompanying symptoms. His previous intraoral incision showed squamous cell carcinoma. The lung and bone metastatic process was not found in the chest radiograph. The head magnetic resonance imaging (MRI) showed a malignant soft tissue mass in the left accessory parotid gland. Wide excision and radical parotidectomy were done, followed by lymph node sampling. His final diagnosis was stage III left accessory parotid gland primary squamous cell carcinoma (T3N0M0). His condition improved post-surgery, and he was planned to have post-surgery radiotherapy.

Discussion: Surgery (parotidectomy) is the cornerstone treatment of accessory parotid gland neoplasms. There are several resection techniques for accessory parotid gland tumors, such as open parotidectomy incision, endoscopy, and transoral approach, with their own advantages and disadvantages. The resection technique was chosen based on the tumor location and must be done carefully to minimize the potential complications.

Conclusion: Accessory parotid gland neoplasm is one of the differential diagnoses for a cheek mass. Thorough history taking and examination are crucial for optimum management planning since the malignancy rate of the accessory parotid gland is high.

Keywords: Accessory parotid gland, Excision, Neoplasm, Parotidectomy, Squamous cell carcinoma.

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INTRODUCTION

Parotid gland primary squamous cell carcinoma is one of the rare and aggressive salivary gland carcinomas, but it is commonly underdiagnosed. It may only be found in 0.1 – 3.4% of

parotid gland malignancies.^{1,2} Patients commonly complain about a mass in the mid cheek, and this symptom is hard to treat clinically. Clinicians should suspect lesion origins from the accessory parotid gland besides

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parotid gland primary squamous cell carcinoma.³

It is estimated that 1 – 8% of parotid mass cases are accessory parotid gland masses. The accessory parotid gland is a potent area for various benign and malignant lesions. Also, the presence of this gland can aggravate the parotidectomy outcome and the parotid gland tumor therapy. The literature about the accessory parotid gland remains inconsistent, with an estimated prevalence of 7.5% – 68.75%, but it is important to remember that accessory parotid gland tumors have a higher malignancy rate than parotid gland tumors (26 – 52% versus 18.5%). Clinicians should suspect an accessory parotid gland mass in patients who present with a mass in their cheek to treat them properly.^{3,4} We would like to report a case of left accessory parotid gland primary squamous cell carcinoma, an extremely rare case, to increase the awareness of the mass potency in this area to gain rapid and proper diagnosis and management.

CASE REPORT

A 67-year-old man presented with a mass in his left cheek that progressively increasing three months prior admission. The initial size was marble-like (2 x 2 cm). Accompanying symptoms such as mastication, mouth opening, mouth closing, speaking difficulties, and other symptoms were denied. He had checked his condition 3 months prior admission and intraoral biopsy

incision showed squamous cell carcinoma.

His past medical history was stage 2 hypertension, non-hemodialysis stage 4 chronic kidney disease, and history of infarct stroke 14 years prior admission. His routine medications are *adalat oros*, furosemide, bisoprolol, and clopidogrel. He appeared moderately ill, compos mentis, and his vital signs were normal. We found a single well-defined oval mass in left buccal, sized 7 x 5 cm with hard-firm consistency, smooth surface, mobile, without pain. Intraoral mass and neck lymphnodes enlargement were not palpated (picture 1). Other examinations were normal.



Picture 1. patient's clinical condition

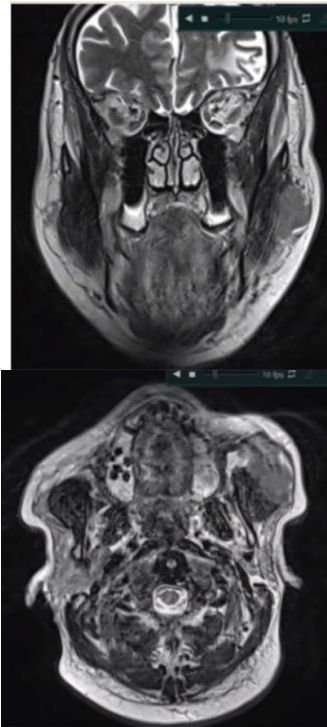
His hematology, liver function, electrolyte, and hemostasis examinations were normal. His human immunodeficiency virus (HIV) and hepatitis B surface antigen were non-reactive. His chest radiograph demonstrated thoracalis spondylosis and prominent cor with aortosclerosis without bone and lung metastasis. He was planned to have contrast Computed Tomography (CT) scan but it was postponed because his renal function deteriorated therefore head MRI was done. The

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head MRI showed malignant soft tissue mass that press the surrounding area, probably it was an accessory parotid and chronic cerebral infarct in left cortical-subcortical frontotemporal and right corona radiata (Picture 2). The anatomic pathology slide was reviewed for second opinion and the conclusion was similar, primary squamous cell carcinoma in left buccal area. Based on history taking, physical examination, and laboratory examinations, his final diagnosis was left accessory parotid gland primary squamous cell carcinoma.

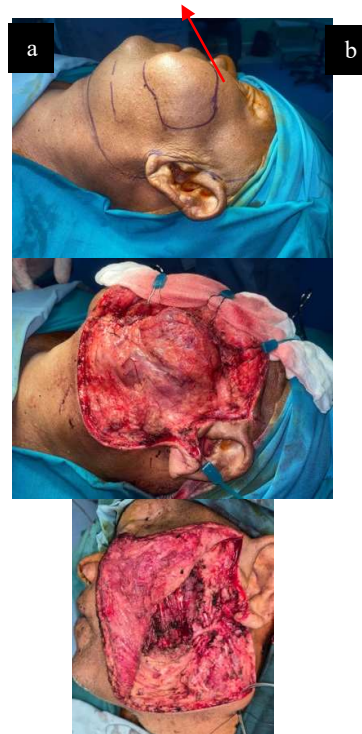
and displacing the superficial and deep parts of the left masseter muscle posteriorly, with well-defined margins. Based on its location, it is suspected to represent a left accessory parotid lesion (red arrow).

He had wide excision and radical parotidectomy, followed by lymph nodes sampling (*Vries coupe*) and anatomic pathology examination (Picture 3). Histiocytosis sinus was found without lymph nodes metastasis. Follow-up was done and his condition improved post-surgery (Picture 4). Post-surgery, radiotherapy was planned. His final diagnosis is stage III left accessory parotid gland primary squamous cell carcinoma (T3N0M0).

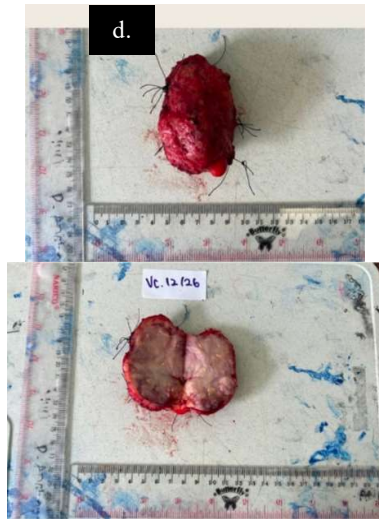


Picture 2. Head MRI Results (Coronal Section [Left] and Axial Section [Right])

There is a malignant soft tissue mass measuring approximately $2.31 \times 4.49 \times 3.96$ cm (anteroposterior [AP] \times mediolateral [ML] \times craniocaudal [CC]) located at the inferolateral aspect of the left zygomatic bone, attached to the superficial part of the left masseter muscle, displacing the left zygomatic major and minor muscles anterolaterally,



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Picture 3. Surgical Documentation (a–c) and Tumor Mass (d–e)(a: Appearance of the mass before surgery, b: Macroscopic appearance of the mass after incision, c: Surgical site after tumor removal, d: Macroscopic appearance of the tumor after excision, e: Frozen section of the tumor)



Picture 4. Postoperative patient condition: (a) right side, (b) front view, and (c) left side.

DISCUSSION

The accessory parotid gland is a distinct salivary gland structure alongside the major parotid gland, in front of the Stensen duct, over the masseter muscle, particularly at the midpoint of an imaginary line starting from the tragus to the midpoint between the ala of the nose and vermillion border of the upper lip.⁴⁻⁶ This gland is only found in a minority population (21 – 32,1% population).^{5,7} The accessory parotid gland is supplied

by the transversal facial artery, innervated by the zygomatic branch of the facial nerve, and has a secondary duct that drains into the Stensen duct.⁶ Rosa et al found that the accessory parotid gland has various sizes, ranging from a pea to a kidney bean, with a flat surface because of compression between the masseter muscle and skin. We may find more than one unilateral accessory parotid gland.^{4,6}

The difference between the major and accessory parotid glands is the presence of mucin acini in the accessory parotid gland, but these glands have similar histological appearances.⁷ Accessory parotid gland tumors are extremely rare (1 – 7.7% of parotid gland tumors), but their malignancy rate is higher than that of other parotid gland tumors, ranging from 26 – 50%, and the tumor types are commonly similar to major parotid gland tumors.^{4,5,8} The reason why its malignancy rate is higher may be related to accessory parotid gland histology, which has a similar percentage of mucin acinar and serous components, such as the submandibular gland, while the major parotid gland is rich in serous components. Furthermore, the anatomical barrier to tumor expansion is lacking, increasing the risk of tumor infiltration into soft tissue.⁶

The presence of an accessory parotid gland may potentiate the location of primary and malignant lesions. The acquired lesions in the accessory parotid gland are commonly neoplastic and similar to lesions in the major parotid gland. Accessory

parotid gland neoplasms should be differentiated from other soft tissue masses such as epidermoid cyst, lipoma, adnexa, and neuron tumor, hematoma, hemangioma, lymphangioma, and metastasis. Malignant lesions in this gland are commonly of the mucoepidermoid type and are most commonly found in minor and major salivary glands. Tumors that originate from the accessory parotid gland are commonly found above the midpoint of the imaginary line from the tragus to the midpoint between the ala of the nose and the vermilion border of the upper lip.^{4,6}

At present, there is no literature about accessory parotid gland primary squamous cell carcinoma and its prevalence because the case is extremely rare. Parotid gland primary squamous cell carcinoma is a rare (0.1 – 3.4% of parotid malignancies) and aggressive carcinoma with an extremely rare malignancy potency, requiring a complex diagnostic procedure, and commonly appears in older age. Literature found that parotid gland primary squamous cell carcinoma can be diagnosed if high-grade mucoepidermoid carcinoma and metastatic parotid squamous cell carcinoma were excluded, and the literature for diagnosis and therapy of this cancer is lacking. Horáková et al found that most parotid gland primary squamous cell carcinomas were diagnosed in stage IV.^{1,2} Most studies found that accessory parotid gland tumors are commonly found in the age group of 45 to 64 years. In this case, our patient is a 67-year-old man.⁸

Patients commonly complained about a mass in their cheeks with slow-growing rates without any pain, similar to our patient, who presented with an enlarging mass in his left cheek over the last few months without any accompanying symptoms.^{3,8} The accessory parotid gland tumor diagnostic findings are similar to those of major parotid gland tumors. The diagnoses were commonly established through radiology and histopathology examination. He had a biopsy previously, and the results were squamous cell carcinoma. He had a plain radiograph to evaluate the metastasis, and the diagnosis was made after head MRI, consistent with the literature that X-ray is less useful; therefore, MRI and sialography CT are recommended because of better visualization abilities and differentiating accessory and major parotid gland tumors. Magnetic resonance imaging is superior to a CT scan because of its better soft tissue visualization ability. Ultrasonography application as an initial salivary gland examination is increasing because it can identify the mass origin, parotid duct, and ductal dilatation due to soft tissue calculi or calcification.^{6,9} Fine needle aspiration is proven valuable to differentiate benign and malignant tumors in the parotid gland.³

The main therapy for accessory parotid gland neoplasm is surgery (parotidectomy), but clinicians should ensure that some things ensure that the resection was done adequately, able to prevent local recurrence with a favorable cosmetic result.

Surgeries should be done carefully because of the presence of zygomatic and buccal branches from the facial nerve in this gland, and the gland location is in the proximal part of the Stensen duct.^{4,7,8} The potential complications are salivary fistula, local tumor recurrence, facial nerve paralysis, and tumor content leakage with recurrence.³

Various approaches can be applied to accessory parotid gland tumor resection, from open parotidectomy incision to endoscopy and transoral approach. Parotidectomy with external neck incision is an effective therapy, but it may lead to scar tissue and facial nerve damage, affecting daily lives and aesthetics.^{5,7} In late-stage high-grade tumor cases, post-surgery radiotherapy is required with a daily fraction of 2 Gy and prophylaxis dose of 50 Gy for unresected neck areas, and can be increased to 60 Gy for the tumor and metastasis area in lymph nodes. Follow-up is required every 3, 6, 8, and 12 months, respectively, in the 1st, 2nd, 3rd, and 4th years of follow-up.⁸ Similar to this case, in which patients had accessory parotid gland squamous cell carcinoma, therefore, post-surgery radiotherapy is required.

Other than the standard parotidectomy incision, the modified Blair incision is another most recommended technique because of improved tumor visualization with better resection margins, minimizing the functional and cosmetic deformities with lower incidences of facial nerve branch injuries. On cheek incision, the tumor was obtained through direct incision in

the mid cheek according to the skin crease. Tumor direct dissection was done carefully from the masseter muscle and the distal branches of the facial nerve. Temporary facial nerve palsies because of the modified Blair incision have a better recovery rate than the cheek incision. Another approach is the transoral approach with tumor excision in the anterior part, which is easily identified through bimanual palpation, avoiding facial scar tissue and direct parotid duct visualization. The transoral approach is not a novel technique but is rarely applied. The advantages of the transoral technique are a better aesthetic result because it does not leave any visible scar and lowers the risk of facial nerve injuries. If the mass is in the anterior part and just above (covering) the masseter muscle, cheek incision or transoral approach are preferred, but if the tumor is behind the masseter muscles, standard parotidectomy incision is recommended.^{5,9}

Similar to other surgeries, complications may occur during parotidectomy. Studies found that the incidence of post-surgery dysfunction and permanent nerve dysfunction were 40% and 20%, respectively, after direct surgery (lesion excision through direct incision and covering it). On the other hand, the modified pre-auricular approach has a lower facial nerve injury rate.³ Studies about accessory parotid gland tumor prognosis remain lacking, but Luksic et al found that the overall 5-year-survival rate for patients with accessory parotid gland tumors was 92.3%, and the survival rate of accessory parotid

gland carcinoma was 80%.^{4,8} However, it should be remembered that tumor stages affect its prognosis.¹⁰

CONCLUSION

Cheek mass has various differential diagnoses such as skin, lymphatic, neurology, and salivary structure disorders including accessory parotid gland neoplasm although the case is extremely rare. Thorough history taking, physical examination, and laboratory examination are required. Because cheek mass is one of the clinically difficult-to-treat symptoms, requiring accurate examination for management planning. The management is surgery with or without radiotherapy. There are some surgery techniques that can be chosen based on tumor locations with their own advantages and disadvantages.

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