AUCTORES
Globalize your Research

Journal of Clinical Otorhinolaryngology
Pedro Marques Gomes *

Open Access

Case Report

Primary Squamous Cell Carcinoma of the Parotid Gland: A Case Report and Literature Review

Pedro Marques Gomes*, Ana Isabel Gonçalves, Delfim Duarte, Paula Azevedo

Otolaryngology – Head and Neck Surgery, Hospital Pedro Hispano, Oporto

***Corresponding Author:** Pedro Marques Gomes, Otolaryngology – Head and Neck Surgery, Hospital Pedro Hispano, Oporto

Received date: June 14, 2022 **Accepted date:** June 28, 2022 **Published date:** July 02, 2022

Citation: Pedro Marques Gomes, Ana Isabel Gonçalves, Delfim Duarte, Paula Azevedo (2022). Primary Squamous Cell Carcinoma of the Parotid Gland: A Case Report and Literature Review *J. Clinical Otorhinolaryngology* 4(3); DOI: 10.31579/2692-9562/063

Abstract

Salivary gland tumors represent about 3% of all head and neck tumors, with the vast majority occurring in the parotid gland. Squamous cell carcinomas rarely are primary in the salivary glands, representing less than 1% of all parotid malignancies.

A 76-year-old man was referred to Otorhinolaryngology due to a right preauricular swelling that had progressively increased in size. Physical examination revealed a painful, firm lesion in the right parotid region, with right peripheral facial palsy. Remaining ENT examination was normal. The biopsy showed a squamous cell carcinoma. CT scan showed a heterogeneous nodule, with peripheral contrast enhancement, in the deep lobe of the right parotid gland. No cleavage plane with the right masseter. No bone or

perineural invasion and no signs of ganglionic or organic involvement. No lesions in another areas.

Primary parotid squamous cell carcinoma is a rare, aggressive, high-grade salivary gland neoplasm, with worse prognosis than conventional ENT squamous cell carcinoma.

Keywords: primary squamous cell carcinoma of the parotid; peripheral facial palsy; arotidectomy

Introduction

Salivary gland tumors represent approximately 3% of all head and neck tumors [1]. The estimated incidence is 0.9 per 100,000 persons in the United States of America, increasing with age, with a peak between 65 and 74 years old of all salivary neoplasms, benign and malignant, the vast majority occur in the parotid gland. In a study with 2410 salivary gland neoplasms [3], 73% occurred in the parotid gland and, of these, 15% were malignant. Most patients with primary squamous cell carcinoma of the parotid present between the sixth and eighth decade of life, sometimes with a history of previous radiotherapy.

Features suggestive of malignancy include a fast increase in size, pain, neck adenopathy, attachment of the lesion to deep structures or the skin, and facial nerve palsy [3, 4]. Since 80 to 90% of the parotid tissue is located lateral to the facial nerve, a similar proportion of neoplasms arise in the superficial lobe. Primary parotid squamous cell carcinomas are typically diagnosed at an advanced stage. Squamous cell carcinomas are rarely primary in the salivary glands, representing less than 1% of all parotid malignancies [5]. In addition to primary parotid squamous cell carcinoma, the differential diagnosis of any neoplasm with squamous differentiation should include high-grade mucoepidermoid carcinoma, metastatic squamous cell carcinoma of the skin (scalp, ear, and face), or a distant primary [5]. The incidence of this type of lesions is higher than the incidence of primary squamous cell carcinoma of the parotid [5].

Magnetic resonance imaging (MRI) is the most reliable complementary diagnostic test in the evaluation of salivary gland neoplasms [6]. Computed tomography (CT) with intravenous contrast is also widely used to evaluate salivary gland masses, mainly due to its high accessibility [7]. CT is particularly useful in the assessment of bone invasion and isalso superior to MRI in the visualization of small salivary duct stones (useful in the differential diagnosis of obstructive causes of glandular swelling). The parotid gland, in its architecture, has a high fat content, which results in a lower radiodensity compared to neoplastic tissue [7]. However, in general, MRI is superior to CT, provides finer details of the soft tissues and

allows more accurate delineation of the extension to adjacent soft Tissues [6].

Fine needle aspiration biopsy (FNAB) is an important tool in the diagnosis of salivary neoplasms. It is safe, has low morbidity and is a reasonably accurate way of differentiating malignant from benign neoplasms [8-11]. The performance of FNAB with ultrasound guidance not only helps in the diagnosis of the primary lesion, but also helps in the neck evaluation [12]. To improve diagnosis by BAAF a new classification system was developed: "Milan system"[13-14]. Microscopically, primary squamous cell carcinoma of the parotid is identical to squamous cell carcinoma of the upper aerodigestive tract, although it tends to be better differentiated (most are moderate to well differentiated, with abundant keratinization [15-17].

Primary squamous cell carcinoma of the parotid are aggressive carcinomas, with 5-year survival rates of approximately 20% to 50% [18].

Treatment usually involves radical parotidectomy, neck lymph node dissection, and adjuvant radiation therapy. Facial branches should only be resected when the facial nerve is paralyzed or invaded/surrounded by tumor in the perioperative period. There is consensus that microscopic residual disease localized to nerve structures can be controlled through adjuvant radiotherapy [18]. The main complication of parotidectomy is temporary/permanent facial paralysis. Other complications include hemorrhage, infection, skin necrosis, Frey syndrome and salivary fistula [18].

Primary radiotherapy is only indicated in unresectable disease or in patients who refuse surgery [18]. The use of chemotherapy is currently limited to palliative treatment of unresectable, recurrent and/or metastatic disease [18].

Case Presentation

A 76-year-old male, non-smoker, was referred to ENT due to a painful swelling in the right pre-auricular region, with progressive growth over the last three months. No prior history of head and neck cancer. Physical examination revealed a right peripheral facial palsy, grade III on the House-Brackmann scale (figure 1 and 2). Palpation of the right pre-auricular region showed a lesion measuring 3 cm in longest axis, hard, painful, adherent to the deep planes. Neck palpation did not demonstrate another lesion. Remaining ENT examination was normal.

Figure 1: *Deviated labial commissure and right eyelid ptosis: peripheral facial palsy.*

Figure 2: *Complete right eye closure with effort: House Brackmann grade III peripheral facial palsy.*

The patient had arterial hypertension, dyslipidemia, coronary heart disease and heart failure. He never smoked. Denied alcohol abuse and drugs. FNAB, guided by ultrasound, demonstrated isolated and grouped malignant cells, withdense cytoplasm and enlarged nucleus, with coarse chromatin and visible nucleoli, compatible with squamous cell carcinoma (figure 3).

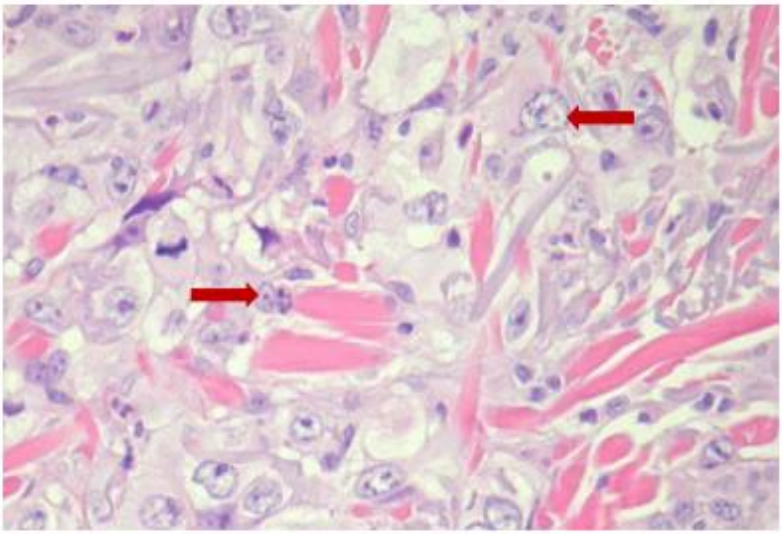

Figure 3: *Malignant cells, with dense cytoplasm and enlarged nucleus, with coarse chromatin and visible nucleoli.*

Contrast-enhanced CT scan showed a heterogeneous nodule, with peripheral contrast enhancement in the upper lobe of the right parotid gland, measuring 24 x 22 mm, with irregular contours, without a cleavage plane with the right masseter, without apparent bone or perineural invasion (figures 4, 5 and 6). No suspicious lesions in another areas (neck, thorax and abdominal). The imaging findings were consistent with a T3N0M0 clinical staging.

After reviewing the case in multidisciplinary group consultation, the patient was sent to the IPO (Instituto Português de Oncologia) in Oporto, where a total parotidectomy was scheduled, with sacrifice of the superior division of the facial nerve. After the surgical procedure underwent adjuvant radiotherapy.

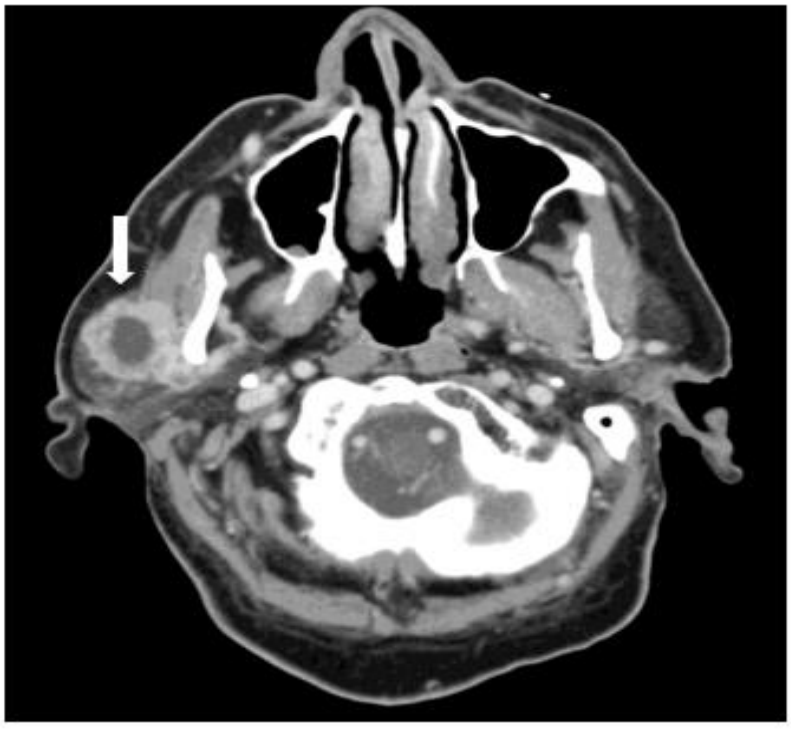

Figure 4: *CT scan, axial view - heterogeneous nodule, peripheral contrast enhancement in the right parotid gland, with irregular contours, without a cleavage plane with the right masseter.*

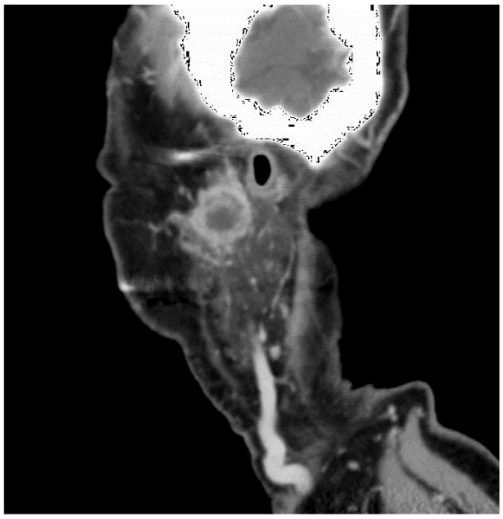

Figure 5: *CT scan, sagital view.*

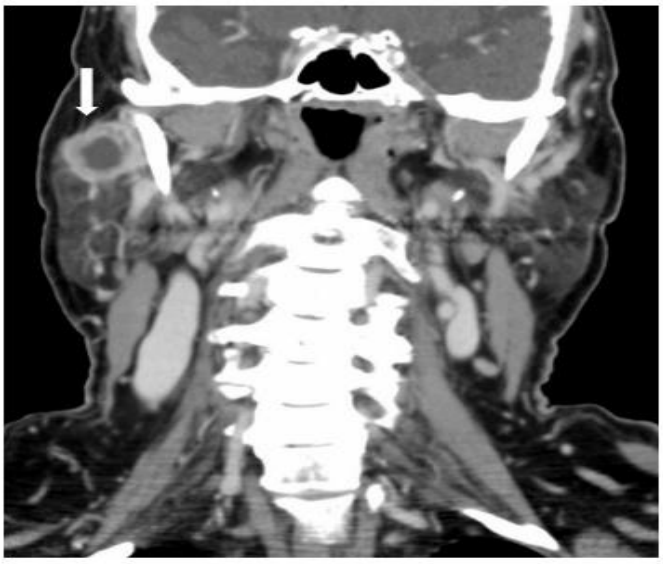

Figure 6: *CT scan, axial view - heterogeneous nodule in the upper lobe of the right parotid gland, no apparent cleavage plane with the masseter, no apparent bone or perineural invasion.*

Discussion

Squamous cell carcinomas are only rarely primary in the salivary glands, representing less than 1% of all malignancies in this site [15]. Metastases to intraparotid lymph nodesfrom primary skin cancers of the head and neck—particularly those of the scalp, ear, and face—are much more common than primary tumors, as is direct invasion from tumors arising in adjacent tissues. The diagnosis of primary squamous cell carcinomas is restricted to the major salivary glands because those that arise in the minor salivary glands cannot be distinguished from primary squamous carcinoma of the surrounding mucosa. Of these, 80% to 90% arise in the parotid gland, and 10% to 20% arise in the submandibular gland15,16.

These tumors typically are high stage at the time of diagnosis. In general, they appear as firm, white, infiltrative, and nonencapsulated masses. Microscopically, they are identicalto squamous cell carcinomas of the upper aerodigestive tract, although they tend to be better differentiated (most aremoderately to well differentiated with abundant keratinization) [15,17]. Usually, fibrous reaction of the surrounding tissues is prominent, as is perineural invasion, with extension of tumor into periglandular soft tissue [15,17].

Primary squamous cell carcinomas are aggressive tumors with 5-year survival rates of approximately 20% to 50% [18]. Histologic tumor grade does not correlate well with behavior. Treatment involves radical surgery, neck dissection, and radiotherapy [18].

Conclusion

Primary squamous cell carcinoma of the parotid is a rare tumor, accounting for less than 1% of all salivary gland tumors. It is an aggressive, high-grade salivary gland neoplasm with worse prognosis than conventional ENT squamous cell carcinoma. Patients over 60 years of age, skin ulceration, facial nerve involvement and lymphatic dissemination have a worse prognosis. Due to its accessibility and lower cost, CT with

intravenous contrast is widely used. It remains essential in the evaluation of the involvement of the skull base. Treatment typically involves radical parotidectomy, neck lymph node dissection, and adjuvant radiation therapy.

Acknowledgements

Not applicable.

Conflict of Interest

No conflict of interest was declared by the author.

Ethical Approval

The study has been approved by the appropriate ethics. The pictures were taken with consent of the patient.

References

1. Spiro RH. (1986). Salivary neoplasms: overview of a 35-year experience with 2,807 patients, Head Neck Surg. 8:177-184.
2. Pinkston JA, Cole P. (1999). Incidence rates of salivary gland tumors: results from a population-based study, Otolaryngology Head Neck Surg. 120:834-840.
3. Eveson JW, Cawson RA. (1985). Salivary gland tumours. A review of 2410 cases with particular reference to histological types, site, age and sex distribution, J Pathol. 146:51-58.
4. Spiro RH. (1998). Management of malignant tumors of the salivary glands. Oncology (Huntingt). 12:671-683.
5. Batsakis JG. (1983). Primary squamous cell carcinomas of major salivary glands, Ann Otol Rhinol Laryngol. 92:94-95.
6. Kurabayashi T, Ida M, Tetsumura A, et al. (2002). MR imaging of benign and malignant lesions in the buccal space, Dentomaxillofac Radiol. 31(6):344-349.
7. Rabinov JD. (2000). Imaging of salivary gland pathology, Radiol Clin North Am. 38(5):1047-1057.
8. Klijanienko J, Vielh P. (2000). Introduction. In: Klijanienko J, Vielh P (eds) Salivarygland tumours. Basel Karger. 1-4.
9. Zbaren P, Guelat D, Loosli H, Stauffer E. (2008). Parotid tumors: fine-needle aspiration and/or frozen section. Otolaryngol Head Neck Surg. 139:811-815.
10. Zbaren P, Nuyens M, Loosli H, Stauffer E. (2004). Diagnostic accuracy of fine-needle aspiration cytology and frozen section in primary parotid carcinoma. Cancer. 100:1876-1883.
11. Orell SR, Klijanienko J. (2012). Head and neck; salivary glands. In: Orell SR, Sterrett GF, eds. Orell & Sterrett's fine needle aspiration cytology. 5th edn. New Delhi: Churchill Livingstone Elsevier. 70-71.
12. Lee YY, Wong KT, King AD, Ahuja AT. (2008). Imaging of salivary gland tumours. Eur J Radiol. 66:419-436.
13. Spiro RH, Huvos AG, Strong EW. (1975). Cancer of the parotid gland: a clinicopathologic study of 288 primary cases. Am J Surg. 130:452-459.
14. Frankenthaler RA, Luna MA, Lee SS, et al. (1991). Prognostic variables in parotid gland cancer. Arch Otolaryngol Head Neck Surg. 117: 1251-1256.
15. Batsakis JG. (1983). Primary squamous cell carcinomas of major salivary glands, Ann Otol Rhinol Laryngol. 92:97-98.
16. Shemen LJ, Huvos AG, Spiro RH. (1987). Squamous cell carcinoma of salivary gland origin, Head Neck Surg. 9:235-240.
17. Batsakis JG, McClatchey KD, Johns M, et al. (1976). Primary squamous cell carcinoma of the parotid gland, Arch Otolaryngol. 102:355-357.
18. Flint, Paul W, and Charles W. (2021). Cummings Otolaryngology Head & Neck Surgery. 1209-1212.

DOI: 10.31579/2692-9562/063