

## Carcinoma de glándula salival mayor. Presentación de caso Major Salivary Gland Carcinoma. Case Presentation

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### RESUMEN

Los tumores malignos de glándulas salivares son neoplasias poco frecuentes, estas constituyen un desafío para los histopatólogos y para los clínicos, porque a pesar de su baja ocurrencia, las posibles complicaciones pueden conllevar a una gran comorbilidad. Representan menos del 2 % de todas las neoplasias humanas y alrededor del 3 al 6 % de los tumores de la cabeza y el cuello. Se describe un caso poco frecuente y raro, con un debut complicado e inusual, en cuanto a la localización y la presencia de una parálisis facial, como precedente del proceso oncogénico, con el objetivo de exponer la patogenia, los factores de riesgo y la metástasis a glándulas salivales, por carcinomas escamosos de cabeza y el cuello. Este caso evidencia que los síntomas neurológicos y funcionales, pueden preceder a una tumoración en neoplasias de glándulas salivales profundas, en pacientes con factores de riesgo.

**Palabras clave:** parótida, neoplasia, comorbilidad

**Descriptor:** glándula parótida; neoplasias de la parótida/diagnóstico; neoplasia; carcinoma; comorbilidad

### ABSTRACT

Malignant salivary gland tumors are rare neoplasms; they constitute a challenge for histopathologists and clinicians because, despite their low occurrence, possible complications can lead to significant comorbidity. They represent less than 2 % of all human neoplasms and around 3 to 6 % of head and neck tumors. An infrequent and rare case is described, with a complicated and unusual onset, regarding the location and the presence of facial paralysis, as a precedent of the oncogenic process, with the aim of exposing the pathogenesis, risk factors, and metastasis to salivary glands from head and neck squamous cell carcinomas. This case shows that neurological and functional symptoms may precede a tumor in deep salivary gland neoplasms in patients with risk factors.

**Keywords:** parotid gland, neoplasia, comorbidity

**Descriptors:** parotid gland; parotid neoplasms/diagnosis; neoplasms; carcinoma; comorbidity

## INTRODUCTION

Damage caused by ultraviolet radiation leads to the production of the alpha-MSH hormone and an increase in the level of opioid receptors, which activates photosensitivity. Several genes and genetic factors associated with skin lesions have been identified, such as Basal Cell Nevus Syndrome (BCNS), which is caused by pathogenic variants of the PTCH1 gene and, in some cases, by variants of the PTCH2 gene. Other implicated genes include BRCA1 associated protein-1 (BAP1), the MC1R gene, DNA repair genes, as well as conditions such as xeroderma pigmentosum and other rare syndromes.<sup>(1)</sup>

Lack of sun protection can have adverse consequences in individuals with photosensitivity, increasing the risk of developing malignant lesions, such as basal cell carcinoma, a common type of skin neoplasm associated with chronic exposure to ultraviolet radiation.

The parotid gland is the most frequent site for neoplasms; 70 to 80% are benign, while 20% correspond to malignant ones. Mortality is low for all ages and in both sexes.<sup>(2)</sup>

All salivary glands have lymph nodes within them and can be affected by lymphoma or lymph node metastases secondary to carcinomas from neighboring areas.<sup>(3)</sup> Risk factors for malignant tumors include: age, for those over 50 years old; radiotherapy directed to the head and neck; and exposure to certain substances in the workplace, such as rubber and plumbing.<sup>(4)</sup>

Mucoepidermoid carcinoma of the mucosal salivary gland is the most frequent malignant tumor, it is characterized by the proliferation of mucous, intermediate, and squamous cells with features of clear cells, columnar cells, and oncocytoïd cells. It usually presents as firm, fixed, and painless tumors; they tend to be poorly defined, with mucoid cystic and solid areas. There is a mixture of mucous, squamous, and intermediate cells.<sup>(4)</sup>

The literature has reported distant metastases from organs, the most frequent being in the lung, in 70 %. Less commonly reported are metastases in the breast, kidney, stomach, and melanoma. Hematogenous metastases are rare and to a lesser extent. Facial paralysis is mentioned as a risk factor; it is unusual, but if it occurs in a case before the presence of a tumor

is known, it can be presumptively affirmed that it is malignant, because it is due to neoplastic nerve invasion, as happens in this case. The most common metastases are malignant ones from the head and neck, mainly basal cell carcinoma, as in the case presented in this study.<sup>(5)</sup> Occult glandular metastasis occurs infrequently and variables dependent on the patient, such as age, gender, general condition, and associated comorbidities, as well as tumor-dependent variables: histological type and site of occurrence, can be studied.<sup>(4)</sup>

The clinical presentation of a salivary gland tumor, whether benign or malignant, includes an increase in gland volume that becomes evident and may be painful, accompanied by insufficient salivary secretion during digestion. The case presents this latter symptom, which prompted the consultation; however, at no time was there evidence of volume increase indicative of a tumor.

Magnetic Resonance Imaging (MRI) allows for an effective diagnostic approach. Computed Axial Tomography (CTscan) is useful for identifying malignant tumors in the salivary glands because it provides quality images with hardly any movement artifacts. Conventional radiological studies do not need to be used, as they do not identify the intraparotid course of the facial nerve; only high-resolution, high-field MRI studies allow for its partial visualization.<sup>(6,7)</sup>

An infrequent and rare case is described, with a complicated and unusual onset regarding the location and the presence of facial paralysis as a precedent of the oncogenic process. The objective of this study is to present the pathogenesis, risk factors, and metastasis to salivary glands from squamous cell carcinomas of the head and neck.

## CASE PRESENTATION

A 72-year-old female patient, white skin color, lives with her daughter, son-in-law, and two grandchildren in a home with good conditions; adequate nutrition. She worked as a teacher at the Enrique José Varona Institute until the year 2020.

### Personal and Family Pathological History

The patient underwent surgery for basal cell carcinoma on the right cheek five years ago; no other personal or family dermatological conditions are reported. She presents reddish wart-like growths on the face, back, and anterosuperior part of the neck. Three years ago,

she experienced facial paralysis and was treated in the Neurology Consultation.

Two years later, despite satisfactory evolution, she perceived difficulty in saliva secretion that intensified during digestion, for which she attended the Gastroenterology Consultation. Through the interview, the physician learned of the patient's history and hypothesized possible oral or buccal gland malignancy, even though no nearby tumor could be palpated.

### Physical Examination

During the physical examination, with emphasis on the head and neck as well as the inside of the mouth, necessary for diagnosing salivary gland cancer, numerous wart-like growths measuring 0.5 and 1 cm are observed in the patient on the neck, cheeks, and anterosuperior part of the chest. The remainder: negative.

### Laboratory Tests Performed:

- Hemoglobin: 16.0 g/L
- Hematocrit: 45%
- Total leukocytes:  $14 \times 10^9/L$

The physician indicated the imaging studies of choice for this disease: magnetic resonance imaging, computed axial tomography, Fine Needle Aspiration Biopsy (FNAB), endoscopy, and ultrasound. Ultrasound was indicated despite the absence of an evident palpable mass.

### Imaging Studies

Findings from computed axial tomography: A poorly defined mass with imprecise, heterogeneous borders was observed, located in the deep lobe of the parotid gland. The only indication suggesting malignancy was that the tumor was hypointense, which differentiates it from benign lesions.

### Findings from magnetic resonance imaging:

A mass with imprecise borders was observed, located in the deep lobe of the parotid gland, replacing the fat of the glandular parenchyma.

### Ultrasound:

The gland showed an increase in size and appeared hypoechoic and heterogeneous.

### FNAB:

The presence of scarce isolated cells of epithelial appearance surrounded by mucus was observed, with no other details to note.

### Endoscopy:

Negative examination.

### Therapeutic Intervention

The patient underwent surgery, and excision of the right parotid gland was performed and sent

to pathological anatomy.

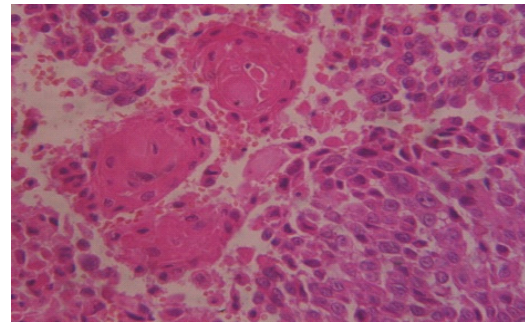
### Pathological Anatomy Study

#### A) Macroscopic examination:

Salivary gland measuring 5x4 cm, lobulated appearance, pale yellow color, and increased consistency toward the deep parotid lobe; upon sectioning: partially irregular, pale yellow surface.

#### B) Microscopic examination:

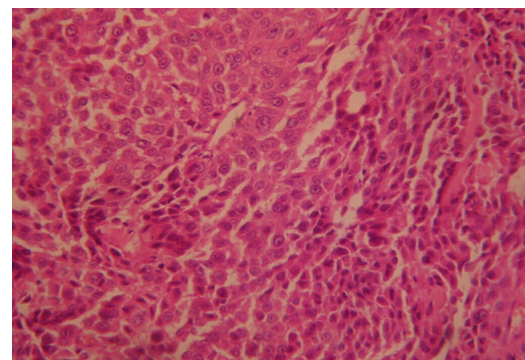
Mucoepidermoid carcinoma of the mucosal salivary gland, see figure 1.



**Fig. 1:** Observe the presence of mucoid cystic and solid areas. There is a mixture of mucous, squamous, and intermediate cells

### Diagnostic Conclusion

Mucoepidermoid carcinoma of the mucosal salivary gland, parotid gland, see figure 2.



**Fig. 2:** Panoramic view: presence of a tumor with solid areas and mucous areas interspersed between them, to which it owes its name

The elements for diagnostic confirmation are: age, with photosensitive predisposition associated with comorbidities; as well as the coincidence in the most affected gland and the type of tumor diagnosed, as reported in statistics and literature. Hereditary dermatological factors are not included, as they are not declared due to being unknown to the patient and her relatives.

### Follow-up and Outcomes

The patient evolved satisfactorily and maintain-

ned regular follow-up, according to the progress of her health, until her death from other causes in 2022.

### **Ethical Considerations**

The research was conducted in accordance with the principles of medical ethics and the Declaration of Helsinki.<sup>(8)</sup> The patient was aware of the need to disclose her disease to the scientific community, and her consent was requested for the presentation of the case, which she approved

### **DISCUSSION**

The parotid gland is considered the largest salivary gland, bilateral; located on both sides of the face, it has two lobes: the deep and the superficial, where tumors commonly occur; it contains multiple intraparenchymal lymph nodes. It is innervated by the auriculotemporal nerve and is anatomically related to the facial nerve because the parotid branches arising from it pass beneath the gland's parenchyma and join the temporal branch of the facial nerve.<sup>(9,10)</sup>

In this elderly, white-skinned patient, it is suggested that there is a propensity to develop lesions caused by solar radiation leading to basal cell carcinoma. Glandular metastasis occurs from this carcinoma to the deep lobe, likely involving the parotid lymph nodes, which caused the facial paralysis due to the proximity and anatomical relationship between the nerve, the gland, and the lymph nodes, without evidence of a tumor on the right cheek. Thus, the aforementioned nerve has been both a tumor risk factor and an oncogenic predictor factor in the development of the process.

Contributing to oncogenesis are comorbidity factors associated with unprotected sun exposure, which motivates the appearance of a carcinogenic process in photosensitive individuals, where evidence of infrequent tumor incidence in the deep parotid lobe and the rare and unusual facial paralysis can be exposed; without accrediting a tumor, which not only may constitute a malignant tumor risk but may also foreshadow that the tumor is hidden and involved in the process.<sup>(11,12)</sup>

A mucoepidermoid carcinoma of the parotid gland with deep localization is reported, manifesting with facial paralysis and xerostomia, without a palpable mass. This case demonstrates that neurological and functional symptoms may precede a tumor in deep salivary gland neoplasms in patients with accumulated risk

factors due to photosensitivity: light phototype, chronic sun exposure, advanced age, history of basal cell carcinoma. Evaluation through high-resolution imaging is essential in this atypical presentation to achieve a timely diagnosis.

### **BIBLIOGRAPHIC REFERENCES**

1. Puig S, Berrocal, A. Management of high-risk and advanced basal cell carcinoma. *Clin Transl Oncol* [Internet]. 2015 [citado 9 Sep 2024];17:497-503. Disponible en: <https://link.springer.com/article/10.1007/s12094-014-1272-9>
2. Machío N, Pozo Kreiling JJ, Blanco MB, del Castillo Pardo JL, Malet Contreras A, Burgueño García Miguel, et al. Tumores malignos de las glándulas salivales: estudio retrospectivo de los pacientes tratados en el Hospital La Paz entre 2008 y 2018. *Rev Esp Cirug Oral Maxilofac* [Internet]. 2021 Sep [citado 2 Sep 2024];43(3):90-5. Disponible en: <https://scielo.isciii.es/pdf/maxi/v43n3/2173-9161-maxi-43-03-00090.pdf>
3. Ladrón-de-Guevara Y, Vázquez Blanco E, Calás-Torres J. Linfoma no Hodgkin con patrón B de células grandes en glándula parótida. *Revista Cubana de Otorrinolaringología y Cirugía de Cabeza y Cuello* [Internet]. 2022 [citado 9 Sep 2024];6(2):e349. Disponible en: <https://revotorrino.sld.cu/index.php/otl/article/view/349/496>
4. Resendiz-Amezcuca J, Contreras-Álvarez P, Iznaga-Marín N. Tumores de Glándulas Salivales. *Revista Cubana de Otorrinolaringología y Cirugía de Cabeza y Cuello* [Internet]. 2022 [citado 9 Sep 2024];6(1):e333. Disponible en: <https://revotorrino.sld.cu/index.php/otl/article/view/333/453>
5. Ramos González A, Martínez San Millán J, Hilarío Barrio. Anatomía y patología de las glándulas salivales. En: Berenguer González J, et al. Actualizaciones SERAM. Radiología de cabeza y cuello. 3ra. Ed. Madrid: Editorial Panamericana; 2021.
6. Amin UP, Shah D, Shah S. Role of imaging in evaluation of salivary gland tumors. *Intrnational J Scient Research*. 2022;11(12):38-40. doi: <https://doi.org/10.36106/ijsr/6801283>
7. Varoquaux A, Fakhry N, Baujat B, Verillaud B, Jegoux F, Barry B, et al. Diagnostic imaging of salivary gland cancers: REFCOR recommendations by the formal consensus method. *Euro-*

pean Annals of Otorhinolaryngology, Head and Neck Diseases. 2024 [cita;141(1):27-31.doi: <https://doi.org/10.1016/j.anorl.2023.11.007>

8.World Medical Association. Declaration of Helsinki. Ethical Principles for Medical Research Involving Human Participants. JAMA [Internet]. 2024 [citado 6 Jun 2025]; 23(18):e21972. Disponible en: [https://jamanetwork.com/journals/jama/articlepdf/2825290/jama\\_2024\\_sc\\_240016\\_1735243266.2619.pdf](https://jamanetwork.com/journals/jama/articlepdf/2825290/jama_2024_sc_240016_1735243266.2619.pdf)

9.Jiménez Rodríguez Y, Coca Granado RM, Delis Fernández RE, Artiles Martínez D, Durán Morales D. Tumores de glándulas salivales. Experiencia de cinco años. Acta Méd Centro [Internet]. 2021 [citado 12 Feb 2025];15(2):229-39. Disponible en: [http://scielo.sld.cu/scielo.php?script=sci\\_arttext&pid=S2709-79272021000200229&lng=es](http://scielo.sld.cu/scielo.php?script=sci_arttext&pid=S2709-79272021000200229&lng=es)

10.Peraza LR, Merlino DJ, Sankar GB, Nwaiwu V, Vander Wert CJ, Yin LX, et al. The parotid gland, submandibular gland, and facial nerve

in 3 dimensions: A digital anatomical model derived from radiology, peer-reviewed literature, and medical illustration. Operative Techniques in Otolaryngology-Head and Neck Surgery. 2023;34(4):220–35.doi: <https://doi.org/10.1016/j.otot.2023.09.017>

11.Mohammed AA, Arif SH. Parotid tumors; presentation, surgical management and complications. Dohuk Medical Journal. 2024;18(1):41-8.doi:<https://doi.org/10.31386/dmj.2024.18.1.5>

12.Suzuki E, Kawata R, Ayani Y, Higashino M, Terada T, Haginomori SI. Investigation of Parotid Cancer Cases Diagnosed as Bell's Palsy at Initial Presentation: The 23 Year Experience of a Single Institution. Ear, Nose & Throat Journal. 2024; 0(0):1-9.doi: <https://doi.org/10.1177/01455613241240935>

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Participation according of the order agreed upon by each of the authors of this work.

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