

# A 50-year-old male with oropharyngeal squamous cell carcinoma metastatic to hand soft tissue and bone - a case report

Homem de 50 anos com carcinoma espinocelular de orofaringe metastático em tecidos moles e ossos da mão - relato de caso

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## ABSTRACT

A 50-year-old patient was referred to our service for the investigation of oropharynx cancer and was diagnosed with squamous cell carcinoma. Although there were no signs of distant metastasis, the disease was given as unresectable. The patient was treated with induction chemotherapy followed by chemoradiotherapy. After a trauma episode, the patient had pain in the right hand, being investigated with magnetic resonance, which demonstrated lesion of soft parts and bone structures. Additionally, in staging examinations, pulmonary metastasis was observed. Of the patients with oropharynx squamous carcinoma, approximately 15 to 20% develop metastases throughout the course of the disease, and metastases in soft parts are rare (less than 10% of those with known distance disease).

**Keywords:** Oropharynx; Soft parts; Squamous cell carcinoma.

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## RESUMO

Paciente de 50 anos foi encaminhado ao nosso serviço para investigação de câncer de orofaringe e foi diagnosticado com carcinoma espinocelular. Embora não houvesse sinais de metástase à distância, a doença foi considerada irresssecável. O paciente foi tratado com quimioterapia de indução seguida de quimiorradioterapia. Após episódio de trauma, o paciente apresentou dor em mão direita, sendo investigada com ressonância magnética, que demonstrou lesão de partes moles e estruturas ósseas. Além disso, nos exames de estadiamento foi observada metástase pulmonar. Dos pacientes com carcinoma escamoso de orofaringe, aproximadamente 15 a 20% desenvolvem metástases ao longo do curso da doença, e metástases em partes moles são raras (menos de 10% daqueles com doença à distância conhecida).

**Descritores:** Orofaringe; Partes moles; Carcinoma de células escamosas.

## INTRODUCTION

Worldwide, oropharynx cancers add up to an estimated 98,412 new cases per year, with an estimated mortality of 48,143 deaths per year.<sup>[1,2]</sup> The estimated number of new cases of oral cavity cancer in Brazil, for each year of the triennium from 2023 to 2025, is 15,100 cases, corresponding to the estimated risk of 6.99 per 100,000 inhabitants.<sup>[3]</sup> In Brazil, in 2020, 6,192 deaths occurred due to oral cavity cancer (C00-C10), corresponding to a risk of death of 2.92 per 100,000 inhabitants. Among the men, 4,767 deaths (4.60 per 100,000) and, in women, 1,425 (1.32 per 100,000).<sup>[4]</sup>

There is a higher prevalence of squamous cell carcinomas (SCC), which may vary in degrees of invasion and differentiation. Cervical lymph nodes are the most prevalent site of metastasis, with variability from the site of the primary tumor. Local recurrence and local invasion is more common than remote metastasis when treatment failure,<sup>[5]</sup> the latter, when present, occur more commonly in lungs, bones, liver, and mediastinum, in patients with advanced disease and large volume of lymph node disease. Alternative sites of distant metastasis are rare, and there are some reports in the literature. This article presents a case of oropharynx SCC with pulmonary and hand metastasis.<sup>[5,8]</sup>

## CASE REPORT

A 50-year-old patient was referred to our service with a history of dysphagia and odynophagia started in June 2020, being submitted to upper digestive endoscopy in an external service with finding of vegetative lesion, without possibility of progression of the apparatus. At physical examination, the lesion was approximately 5cm in the left lateral wall of the oropharynx and adenomegaly (5cm in level II/III to the left and 2cm in level II to the right). Biopsy was performed in our service in August 2020, and a diagnosis of SCC was made. Due to surgical irresectability, referred for final treatment evaluation with chemoradiotherapy.

Before the beginning of the treatment, the patient evolved with respiratory discomfort and cardiorespiratory arrest during endoscopy for passage of the nasoenteral probe, with the need for urgent tracheostomy. Induction chemotherapy was chosen – a scheme with carboplatin + paclitaxel x 3 cycles (from August to October 2020), followed by definitive treatment with concomitant chemotherapy and radiotherapy (cisplatin x 6 weeks), which extended until January 2021.

During treatment the same had fall from his height and trauma in a right upper limb. In March 2021 he had pain on her right hand, and had a tumor in his hand and was soon referred to orthopedics. She presented a fibroelastic consistency tumor, adhered to deep planes, with about 6 cm in diameter in the dorsal region of transition between wrist and right hand, with limited flexion of fingers, as well as limited extension; no sensory deficit (Figures 1 and 2). X-ray demonstrated destructive bone injury, with a large involvement of soft parts in carpal bones.

Re-staging was requested and biopsy was scheduled after MRI. In imaging tests performed in March and April 2021, the disease progressed in the lung, and extensive expansive lesion affecting soft parts and bone structures at carpus and metacarpal level (Figures 3, 4 and 5). In April 2021, the patient required hospitalization due to clinical complications (pneumonia and malignant hypercalcemia), with consequent evolution to death in May, 2021. Before the death, it was possible to perform a hand biopsy, which demonstrated conventional squamous cell carcinoma, moderately differentiated, involving the deep and reticular dermis, with invasive lymphovascular; overlying epidermis without atypia (Figures 6 and 7). Time from the course of the disease to death of eleven months, with survival after disease progression of approximately two months.

## DISCUSSION

The oropharynx consists of the tonsil region (pillars and fossa), base of the tongue, soft palate,



**Figure 1.** Fibroelastic consistency tumor, adhered to deep planes, with about 6 cm in diameter in the dorsal region of transition between wrist and right hand, with limited flexion of fingers.



**Figure 2.** Fibroelastic consistency tumor, adhered to deep planes, with about 6 cm in diameter in the dorsal region of transition between wrist and right hand, with limited flexion of fingers.

and posterior and lateral walls. Carcinoma of these sites is usually squamous and strongly related to smoking and, to a lesser degree, to alcohol intake and some related HPV cases. The most common sites of oropharynx cancer metastasis are cervical lymph nodes, with variability between different levels depending on the position of the primary tumor. An incidence of 70% of lymph node metastasis in oropharynx cancer is estimated, and may be bilateral in up to 50% of cases.<sup>[6]</sup> Distant metastasis (or metastatic disease outside cervical lymph



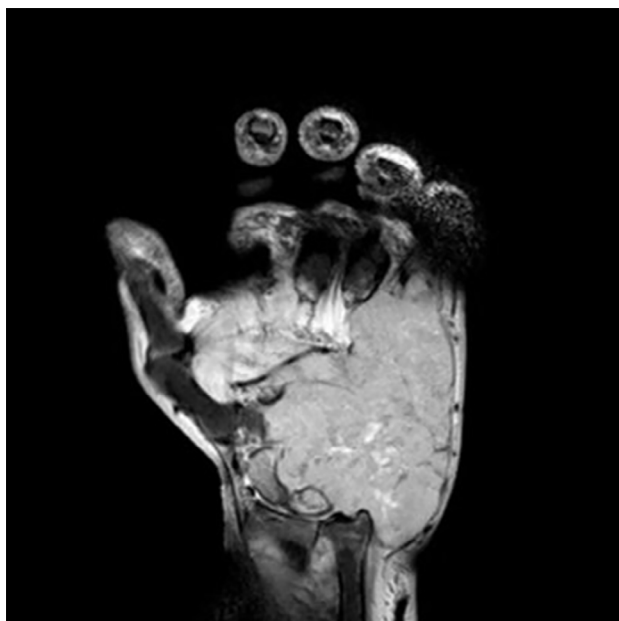
**Figure 3.** Expansive lesion affecting soft parts and bone structures at carpus and metacarpal level.



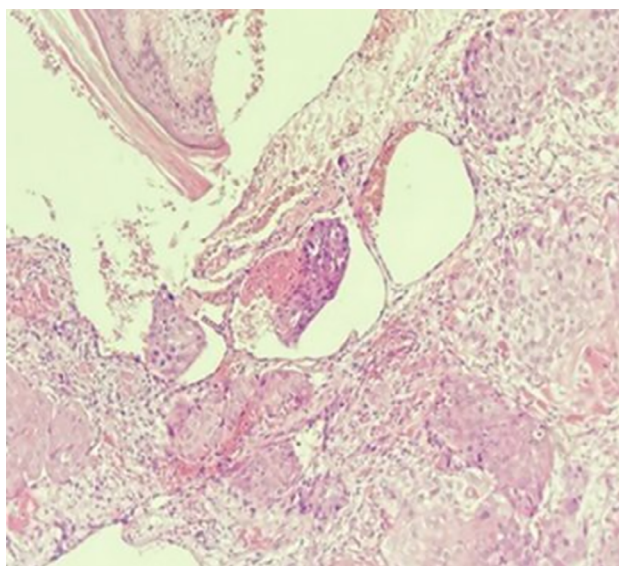
**Figure 4.** Expansive lesion affecting soft parts and bone structures at carpus and metacarpal level.

nodes) can occur in 15 to 20% of the patients with oropharynx carcinoma throughout the course of the disease, with inherent complications.<sup>[1,7]</sup> Therefore, before treatment is started, it is necessary to search for distant metastases, with the lungs, liver and bones being the most common sites.<sup>[8]</sup> Other less common sites of metastases include: skin, brain, adrenal, heart, kidneys, peritoneum, soft parts, spleen, and prostate. There are reports of cases of metastasis to sparse soft tissues in the literature, and it is an important differential diagnosis for patients with head and neck SCC who present with an undetermined mass of origin in the extremities. A complete physical examination of patients is recommended for follow-up visits.<sup>[9,10]</sup>



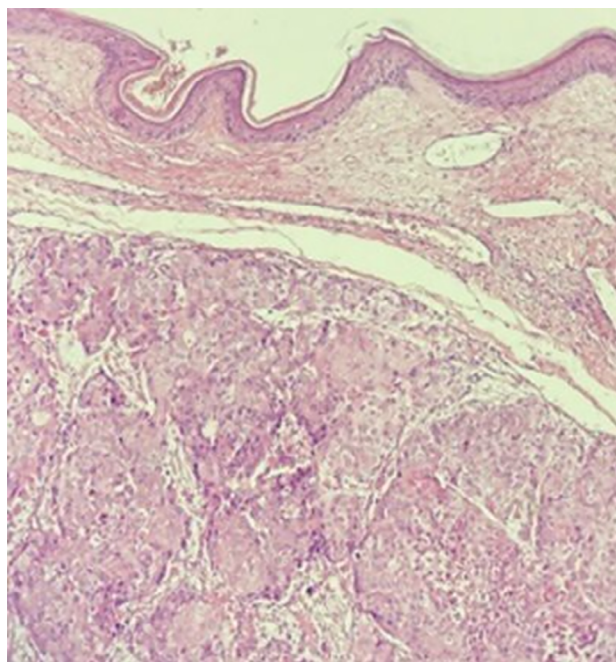


**Figure 5.** Expansive lesion affecting soft parts and bone structures at carpus and metacarpal level.



**Figure 6.** Conventional squamous cell carcinoma, moderately differentiated, involving the deep and reticular dermis, with invasive lymphovascular; overlying epidermis without atypia.

A review conducted by Merino et al. (1977),<sup>[11]</sup> with 546 patients with SCC of the oropharynx, demonstrated the occurrence of distant metastasis in different locations. The lung was affected in 52% of the patients, bone in 20.3%, liver in 6%, mediastinum in 2.9%, lung and bone combination in 3.3%, and other locations in 15.4% of the patients. Another review, performed by Kowalski et al. (2005),<sup>[5]</sup> with 89 patients with oropharynx metastatic SCC, revealed the presence of metastasis in several locations, with the lung affected in 58% of the patients, bone in 37%, liver in 3.4%, brain in 3.4% and soft tissues in 2.2%. Finally, Marcos et al. (2006)<sup>[12]</sup> analyzed 39 patients with various head and neck SCC, and observed metastasis in the lung in 58% of the



**Figure 7.** Conventional squamous cell carcinoma, moderately differentiated, involving the deep and reticular dermis, with invasive lymphovascular; overlying epidermis without atypia.

patients, in bone in 22%, in liver in 9%, in soft tissues in 9%, and in other locations in 2% of the patients.<sup>[5,11-13]</sup>

In a study carried out by Liu et al. (2019),<sup>[14]</sup> the metastasis pattern was evaluated in head and neck neoplasia, excluding nasopharynx, through analysis of the American cancer database and the results revealed a relatively low incidence of distant metastasis in these cases, around 3%. The most common affected site was the lung and the researchers concluded that staging with pulmonary tomography is sufficient and can be used as a substitute for PET-CT and at a lower cost. In addition, Sinha et al. (2015)<sup>[15]</sup> evaluated the prevalence and association of outcomes in patients with positive and metastatic oropharynx neoplasm for soft tissue, and the findings showed a incidence of metastasis at a distance of 6.7% and also concluded that there is one association of other metastatic sites in patients with metastasis in soft tissues.

Acrometastasis is rare, studies show an incidence between 0.07% and 0.3%, 50% in the hands and 50% in the feet, the main primary sites found were: lung, breast, and genitourinary. In addition, there is an association of worse prognosis in this patient profile.<sup>[16]</sup>

## CONCLUSION

Cases of metastasis in soft parts related to head and neck SCC are rare in the literature, with divergent conducts due to the scarcity of cases. They have an impact on quality of life, and may have delayed diagnosis due to unusual presentation. It is critical that one have a pathologist who is dedicated to head and neck. They should be part of the differential

diagnosis for patients with pain or edema and the physical examination of the patient in oncologic follow-up should be complete in order to diagnose early.

## AUTHORS' CONTRIBUTIONS

RAMO	Collection and assembly of data, Conception and design, Data analysis and interpretation, Final approval of manuscript, Manuscript writing, Provision of study materials or patient
MSK	Collection and assembly of data, Data analysis and interpretation, Manuscript writing, Provision of study materials or patient
EM	Conception and design, Provision of study materials or patient
PP	Collection and assembly of data, Conception and design, Data analysis and interpretation, Manuscript writing
JGVC	Collection and assembly of data, Conception and design, Data analysis and interpretation, Manuscript writing
RRFM	Collection and assembly of data, Conception and design, Data analysis and interpretation, Manuscript writing

## REFERENCES

- Goodwin WJ. Distant metastases from oropharyngeal cancer. *J Otorhinolaryngol Relat Spec.* 2001 Jul/Aug;63(4):222-3. DOI: <https://doi.org/10.1159/000055745>
- World Health Organization (WHO). International Agency for Research on Cancer (IARC). Globocan 2020, Oropharynx [Internet]. Geneva: WHO/IARC; 2020; [access in 2023 Jun 17]. Available from: <https://gco.iarc.fr/today/data/factsheets/cancers/3-Oropharynx-fact-sheet.pdf>
- Ministério da Saúde (BR). Instituto Nacional de Câncer José Alencar Gomes da Silva (INCA). Estimativa 2023: incidência de câncer no Brasil [Internet]. Rio de Janeiro: Ministério da Saúde/INCA; 2023; [access: 2023, June,12th]. Available from: <https://www.inca.gov.br/sites/ufu.sti.inca.local/files/media/document/estimativa-2023.pdf>
- Ministério da Saúde (BR). Instituto Nacional de Câncer José Alencar Gomes da Silva (INCA). Estimativa 2022: incidência de câncer no Brasil. Rio de Janeiro: Ministério da Saúde/INCA; 2022.
- Kowalski LP, Carvalho AL, Martins Priante AV, Magrin J. Predictive factors for distant metastasis from oral and oropharyngeal squamous cell carcinoma. *Oral Oncol.* 2005 May;41(5):534-41. DOI: <https://doi.org/10.1016/j.oraloncology.2005.01.012>
- Parsons JT, Mendenhall WM, Stringer SP, Amdur RJ, Hinerman RW, Villaret DB, et al. Squamous cell carcinoma of the oropharynx: Surgery, radiation therapy, or both. *Cancer* 2002 Jun;94(11):2967-80.
- Jesse RH, Sugarbaker EV. Squamous cell carcinoma of the oropharynx: why we fail. *Am J Surg* 1976 Oct;132(4):435-8.
- Troell RJ, Terris DJ. Detection of metastases from head and neck cancers. *Laryngoscope.* 1995 Mar;105(3 Pt 1):247-50. DOI: <https://doi.org/10.1288/00005537-199503000-00005>
- Marioni G, Blandamura S, Calgaro N, Ferraro SM, Stramare R, Staffieri A, et al. Distant muscular (gluteus maximus muscle) metastasis from laryngeal squamous cell carcinoma. *Acta Otolaryngol.* 2005 Jun;125(6):678-82. DOI: <https://doi.org/10.1080/00016480410024613>
- Smeets R, Grosjean MB, Heiland M, Riediger D, Maciejewski O. Distant metastases of a squamous cell carcinoma of the tongue in peripheral skeletal muscles and adjacent soft tissues. *Head Face Med.* 2008 Mar;4:7. DOI: <https://doi.org/10.1186/1746-160X-4-7>
- Merino OR, Lindberg RD, Fletcher GH. An analysis of distant metastasis from squamous cell carcinoma of upper respiratory and digestive tracts. *Cancer.* 1977 Jul;40(1):145-51.
- Marcos CA, Pendás JL, Gutiérrez VF, Hermesen M, Albalad MPC, Espina HF, et al. Distant metastases in head and neck cancer. *Acta Otorhinolaringol Esp.* 2006 Oct;57(8):369-72.
- Samuelian JM, Fisher BJ, Daugherty LC, Babaria UA. Oropharyngeal squamous cell carcinoma metastatic to lower-extremity soft tissues: a case report and literature review. *Ear Nose Throat J.* 2013 Jun;92(6):E38-E41.
- Liu JC, Bhayani M, Kuchta K, Galloway T, Fundkowski C. Patterns of distant metastasis in head and neck cancer at presentation: implications for initial evaluation. *Oral Oncol.* 2019 Jan;88:131-6.
- Sinha P, Lewis Junior JS, Kallogjeri D, Nussenbaum B, Haughey BH. Soft tissue metastasis in p16-positive oropharynx carcinoma: prevalence and association with distant metastasis. *Oral Oncol.* 2015 Aug;51(8):778-86.
- Greco T, Cianni L, Mauro D, Dughiero G, Bocchi MB, Cazzato G, et al. Foot metastasis: current knowledge. *Orthop Rev (Pavia).* 2020 Jun;12(Suppl 1):8671.