

## Clear Cell Odontogenic Carcinoma of the Mandible, Case Report

Roberto da silva de Almeida\* and Manoela Alkmin dos Santos Ribeiro

### Abstract

Caucasian patient, ECOG-PS 0, 38 years old, presented at the hospital with symptoms of pain in the lower left region of the mandible, objectively without swelling, on radiographic examination, she presented an extensive lesion with radiolucency in the region of element 37, with image filling, displacement of element 38 and apical involvement of element 36. In the tomographic exam, he presented a lesion with great destruction of the lingual wall and accentuated bone sequestration. It was opted for the differential diagnosis of the same by biopsy of the region with partial removal of healthy and diseased tissue associated with aspiration puncture, the histopathological examination was diagnosed as odontogenic clear cell carcinoma, a rare malignant tumor of epithelial origin, common in aged over 50 years and without behavioral pattern at its emergence.

**Keyword:** Carcinoma; Clear cell; Odontogenic.

### Introduction

Clear cell odontogenic carcinoma (CEOC) is a rare type of malignant tumor, affecting less than 1% of all malignant head and neck tumors, however, in the last two decades the incidence has increased by 2%. [1-4]. This tumor is of epithelial origin, affects more females, often in the fifth to seventh decade of life and with a more common appearance in the posterior region of the mandible. First described in 1985, by Hansen initially classified by the world Health Organization (WHO) as a benign tumor, however in 2005, due to its aggressiveness, destruction and potential for lymph node dissemination, it

was classified as malignant by the same entity. This work aims to expose a clinical case of a clear cell odontogenic carcinoma (CEOC) in a 38-year-old female patient, without clinical signs and symptoms, who presented atypical findings in routine radiographic examinations.

### Materials and methods

Patient , ECOG-PS 0, was referred after a consultation with a dentist, specialist in orthodontics, who, after performing a routine orthopantomographic examination, previously with the intention of performing orthodontic intercept, without any signs

MSc, Universidade Fernando Pessoa, Porto, Portugal

\*Corresponding Author: Roberto da silva de Almeida, Maxillofacial surgeon University of Florida, Porto, Portugal.

Receiving Date: 10-05-2022

Accepted Date: 10-18-2022

Published Date: 10-28-2022

Copyright© 2022 by Almeida RS, et al. All rights reserved. This is an open access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

and symptoms of pain maxillomandibular lesions, the objective examination did not show any increase in the mandibular region or lymphadenopathy on palpation, however the orthodontist identified a radiolucent image in the mandibular region of elements 35, 36, 37 and 38 (Figure 1), the patient was

referred to the specialist who requested tomographic exams. In the tomographic exams, an extensive lesion of the mandible was identified in the region of 35, 36, 37 and 38, therefore, a biopsy of the region was performed in the operating room for diagnosis (Figure 2).



**Figure 1:** Radiographic Appearance.



**Figure 2:** Clinical case after hemi mandibulectomy.

When sending the fragments for examination, three white brownish fragments in sizes 1 x 0.5 x 0.5cm, one irregular of 0.4 cm and one of 0.5cm were removed (Figure 3-5) and sent for analysis, with their diagnosis at histopathological

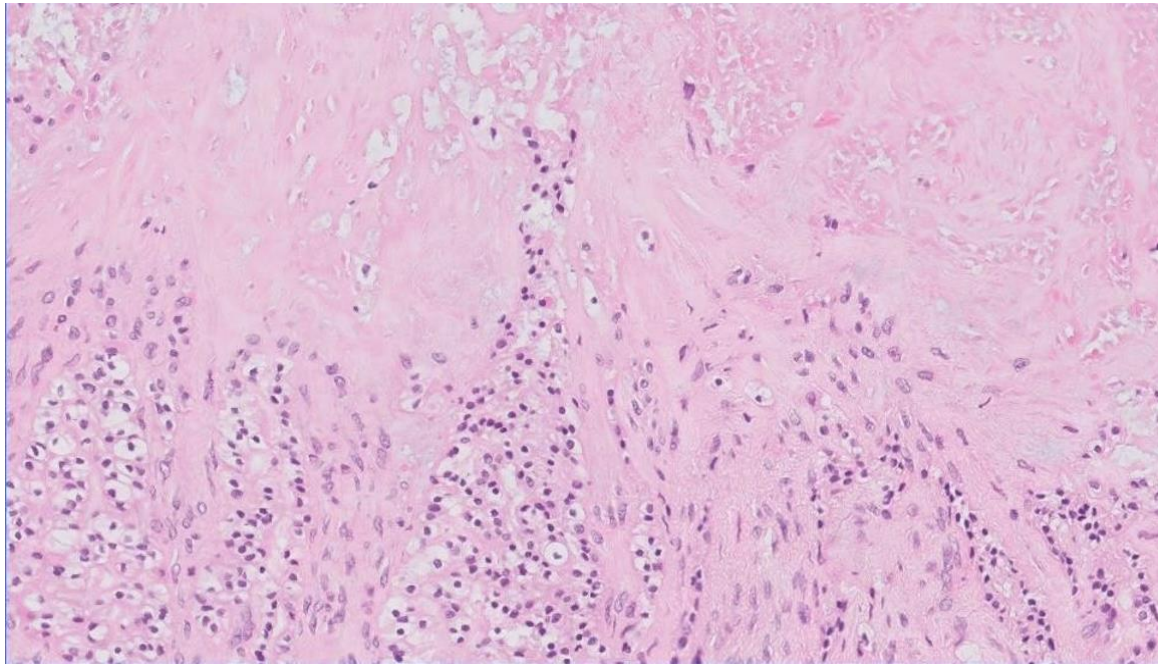
examination as positive for odontogenic clear cell carcinoma (Figure 6).

### Discussion

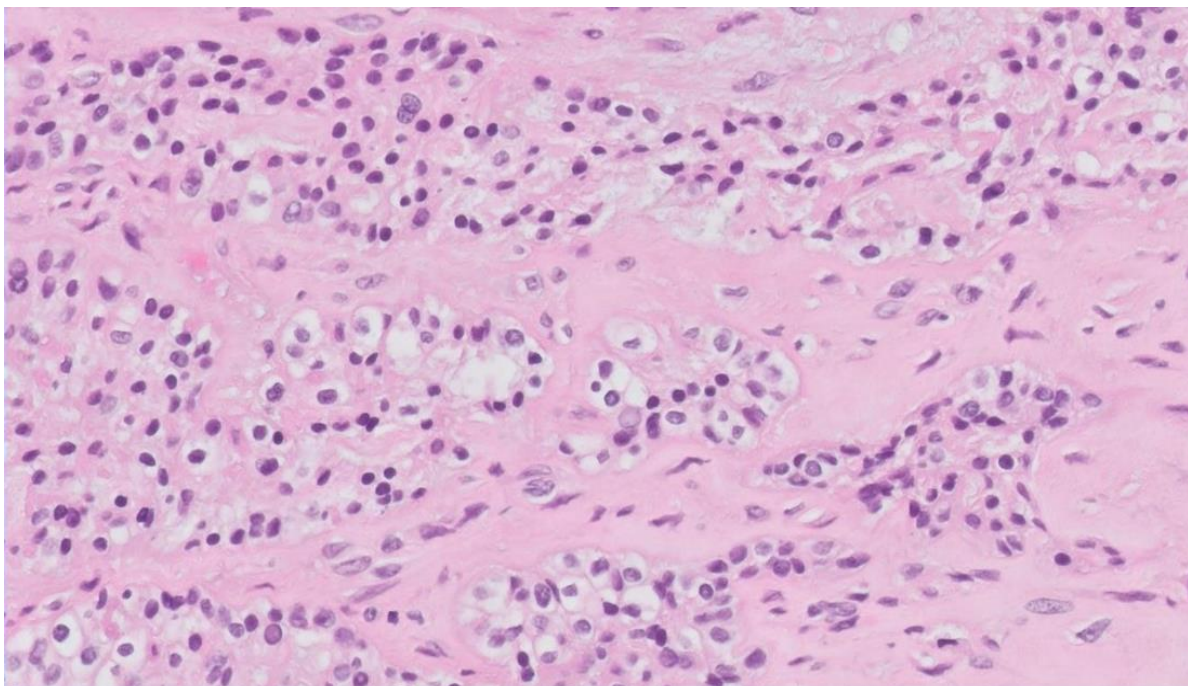
Cell carcinoma has been considered a type of malignant tumor [5]. evil. [6,7]. With a

higher prevalence in women over 50 years of age and associated with risk factors such as obesity, smoking, hypertension, and occupational exposure, clear cell odontogenic carcinoma does not present a similar behavior and or pattern, the non-specificity of signs and symptoms as well as its radiographic appearance without a

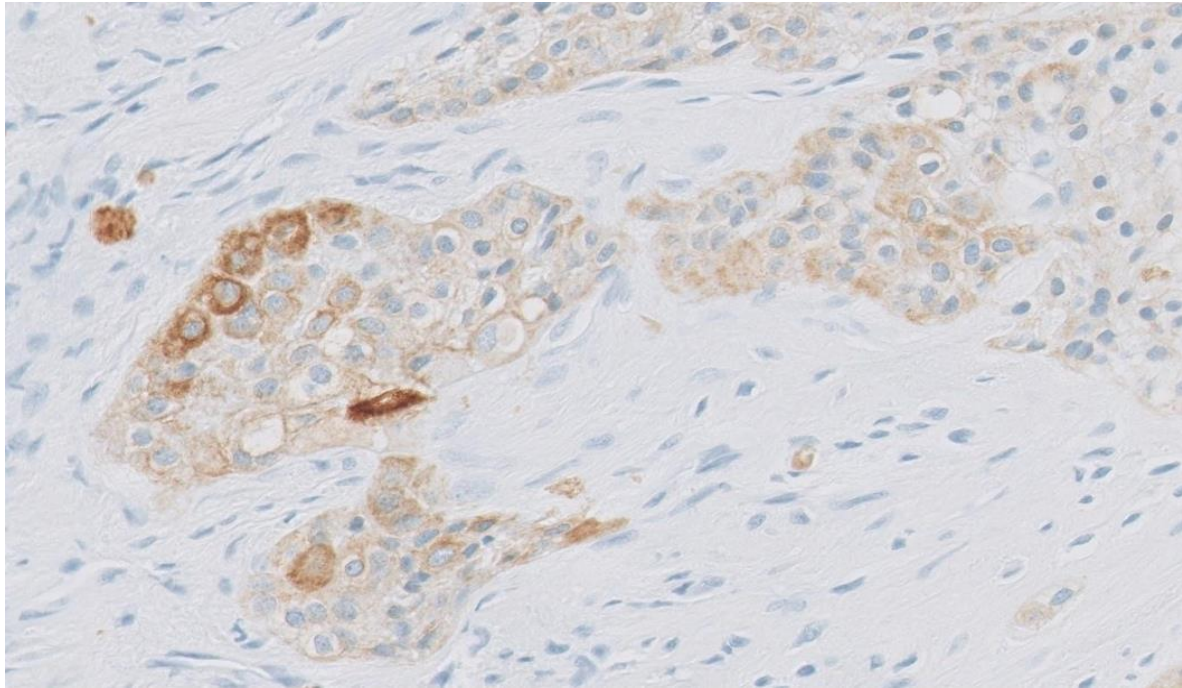
pattern makes the diagnosis difficult, however its most common signs and symptoms are pain or discomfort, nonspecific radiating pain in the mandible, mobility or displacement of the dental element, bleeding, pain, local ulcerations that do not regress, paresthesias and destruction of the cortical bone [5,8].



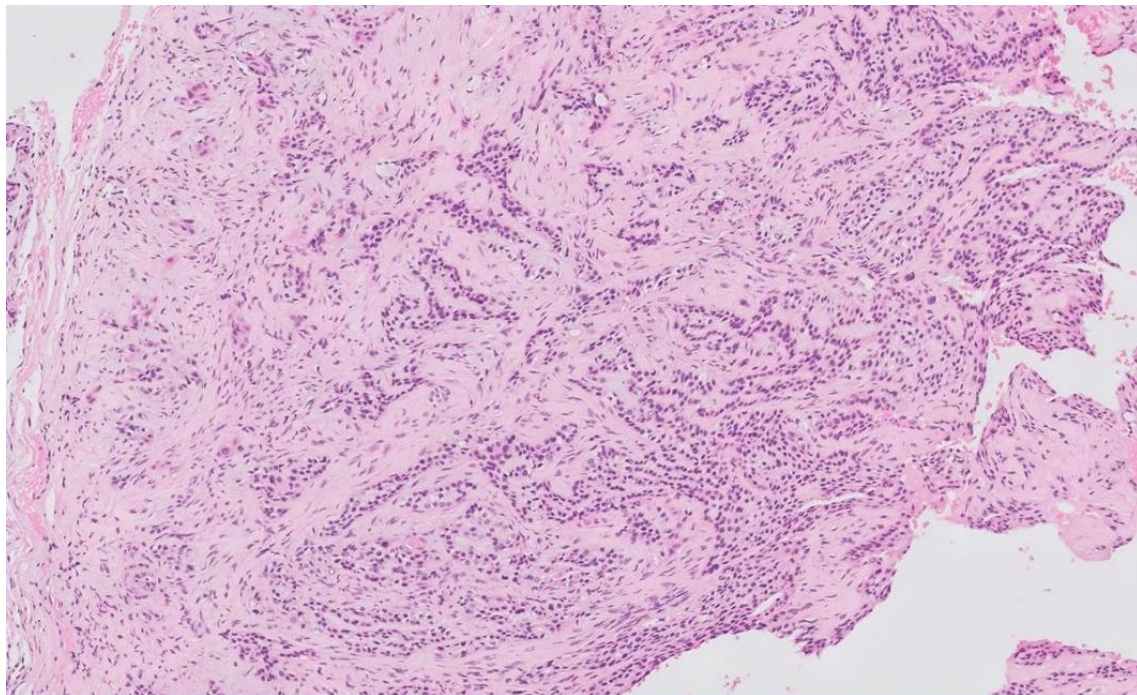
**Figure 3:** Histopathological examination (Tumor Necrosis Area).



**Figure 4:** Histopathological examination (Clear Cells).



**Figure 5:** Histopathological examination (Cytokeratin).



**Figure 6:** Histopathological examination (Infiltrate Growth).

Being a rare cancer, its treatment and diagnosis in the initial phase become a challenge, and therefore, it can have the differential diagnosis with other clear cell tumors, such as: kidney, thyroid metastasis, prostate and colon carcinoma; other carcinomas such as: odontogenic carcinoma

calcifying or Pindborg tumor, atypical odontogenic tumors, adenocarcinoma, ameloblastoma, mucosal melanoma, myoepithelioma, pleomorphic adenoma, and acinic cell carcinoma [9,10]. Histologically, it appears as islands and ribbons containing two populations of cells:

clear cells with well-defined borders and a centrally located nucleus and hyperchromatic polygonal cells with eosinophilic cytoplasm and centrally located nuclei, both embedded in a fibrous stroma. The monophasic variant is composed almost entirely of clear cells. The ameloblastic variant is composed predominantly of columnar cells with ameloblast-like differentiation on the periphery of tumor islands. The treatment of COEC consists of surgical intervention, with radical resection and with margin and safety, not being indicated curettage or partial removal of the cancer, if there is presence of perineural and perivascular invasion, chemotherapy and/or radiotherapy are indicated. clear cells should be treated as a malignant, aggressive tumor that should be followed up, after the histopathological diagnosis, additional tests were sought to look for metastases and/or primary origin of the cancer, such as lung tomography, kidney MRI and PET-Scan, with all negative, thus leaving the atypical

diagnosis of primary tumor in the mandibular region [6].

## Conclusion

Being a rare disease of behavior without clinical and/or radiographic pattern, the treatment of clear cell carcinoma becomes a challenge, depending on its location and expansion, respective surgical treatment can be helped with adjuvant treatments such as radiotherapy, having the need to be individualized. each case. The size, location and metastasis directly influence patient survival, so early diagnosis is crucial for possible remission, treatment and patient survival. Clear cell odontogenic carcinoma should be treated as a malignant, aggressive tumor that must be followed up, after the histopathological diagnosis, additional tests were sought to look for metastases and/or primary origin of the cancer, such as lung tomography, kidney and kidney MRI. PET – Scan, with all negative, thus making the atypical diagnosis of primary tumor in the mandibular region [6].

## References

1. ReILANDA, BM Clear Cell Odontogenic Carcinoma in Mandibular Parasymphysis: Case Report. 2019.
2. Gómez NL, Boccalatte L, Yanzón A, Nassif MG, Larrañaga JJ, Figari MF. Clear Cell Odontogenic Carcinoma: A Rare Pathology with an Innovative Resolution. *Stomatologija*. 2020;22(1):28-32. [PubMed](#)
3. Guastaldi FPS, Faquin WC, Gootkind F, Hashemi S, August M, Iafrate AJ, Rivera MN, et al. Clear Cell Odontogenic Carcinoma: A Rare Jaw Tumor. A Summary of 107 Reported Cases. *Int J Oral Maxillofac Surg*. 2019;48(11):1405-1410. [PubMed](#) | [CrossRef](#)
4. Hansen LS, Eversole LR, Green TL, Powell NB. Clear Cell Odontogenic Tumor-A New Histologic Variant with Aggressive Potential. *Head Neck Surg*. 1985;8(2):115-23. [PubMed](#) | [CrossRef](#)
5. Moro A, Gasparini G, Saponaro G, Petrone G, Foresta E. Clear Cell Odontogenic Carcinoma: A Case Report and Literature Review. *Oral Maxillofac Surg Casess*. 2021. [CrossRef](#)
6. Santana T, de Andrade FL, de Sousa Melo MC, da Rocha GBL, Trierweiler M. Clear Cell Odontogenic Carcinoma Harboring the EWSR1-ATF1 Fusion Gene: Report of a Rare Case. *Head Neck Pathol*. 2020;14(3):847-851. [PubMed](#) | [CrossRef](#)
7. Hadj Saïd M, Ordioni U, Benat G, Gomez-Brouchet A, Chossegras C, Catherine JH. Clear Cell Odontogenic Carcinoma. A Review. *J Stomatol Oral Maxillofac Surg*. 2017;118(6):363-370. [PubMed](#) | [CrossRef](#)
8. Cortés-Vázquez YD, Cortés-Vázquez AR, Priego-Niño A, Fernández-Vivar E, Silva-Bravo F, Gutiérrez-Quiróz C. Clear-Cell Carcinoma with Sarcomatoid Pattern, Associated with Gingival Metastasis. Case Report and Review of the Literature. *Cir Cir*. 2020;88(Suppl1):54-58. [PubMed](#) | [CrossRef](#)
9. Ilanda BM, Sousa FB. Odontogenic Clear Cell Carcinoma in Mandibular Parasymphysis, Case Report. 2019.
10. Verdeja R, Stauffer E, Lombardi T. Unusual Presentation of Clear Cell Odontogenic Carcinoma: Case Report and Literature Review. *Diagnostics (Basel)*. 2022;12(4):1019. [PubMed](#) | [CrossRef](#)