

## KNOW YOUR FIELD

# Papillary squamous cell carcinoma of antrum-clear cell variant

Sangeeta R Patankar, V Poornima, Vineet Avdhani<sup>1</sup>, Sanya Bhatia

Department of Oral Pathology, Yerala Medical Trust's Dental College, Navi Mumbai, <sup>1</sup>Department of Oral and Maxillofacial Surgery, Terna Dental College, Navi Mumbai, Maharashtra, India

## CASE REPORT

A 65-year-old female patient reported with the chief complaint of mid facial swelling since 4 months. On extraoral examination, diffuse swelling was seen on left side of face pushing the floor of the orbit with deviation of the nasal septum. On palpation, the lesion was tender and soft in consistency. Intraorally, the swelling was seen obliterating the buccal vestibule in the upper left molar region with an intact overlying mucosa. Computed tomography (CT) scan revealed a destructive hypodense solid mass, occupying the whole of maxillary sinus destroying the lateral wall of nose, floor of orbit and alveolar process.

## Histopathology

1. Scanner view showed tumor epithelial cells in a papillary configuration around a fibrocellular connective tissue core [Figure 1]. Epithelial cells showing two distinct patterns were seen
2. The tumor cells immediately surrounding the connective tissue core showed eosinophilic cytoplasm with vesicular nuclei [Figure 2]. Cellular atypia in the form of nuclear hyperchromatism, pleomorphism with increased and abnormal mitotic figures was frequently seen [Figure 3]
3. Cells farther away from the core were predominantly clear in appearance [Figure 2] with minimal atypical features [Figure 3]
4. Immunohistochemical analysis showed strong cytokeratin (CK) positivity [Figure 4] with negative vimentin [Figure 5], confirming the epithelial origin of tumor cells
5. Negative mucicarmine staining ruled out the glandular origin of the lesion.

## Differential diagnosis

### Clear cell odontogenic tumors

Clear cell odontogenic tumors are of three types: clear cell

odontogenic carcinoma (CCOC), clear cell ameloblastoma and clear cell calcifying epithelial odontogenic tumor (CCEOT).

CCOC shows three architectural patterns: biphasic, monophasic and ameloblastomatous,<sup>[1]</sup> commonest being the biphasic pattern with nests of large clear cells with small islands of hyperchromatic polygonal cells with eosinophilic cytoplasm.<sup>[2]</sup>

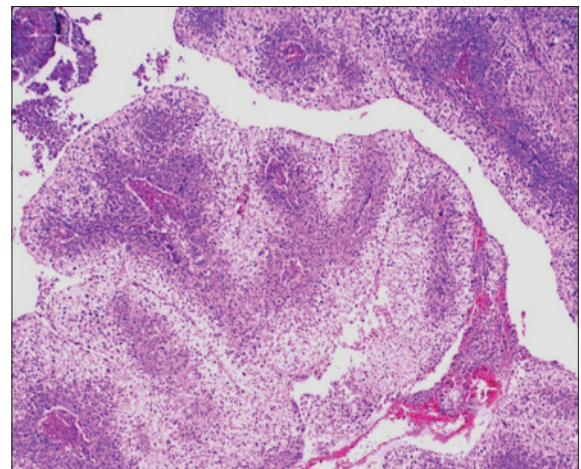
Clear cell ameloblastoma shows typical tumor islands similar to follicular ameloblastoma, with peripheral ameloblast-like cells and the clear cells replacing the central stellate reticulum-like cells.<sup>[3]</sup>

CCEOT is characterized by polyhedral epithelial cells alternating with large epithelial cells with a clear foamy cytoplasm and amorphous eosinophilic amyloid in the connective tissue.<sup>[4]</sup>

### Clear cell salivary gland tumors

Malignant clear cell salivary gland tumors are clear cell acinic cell carcinoma (CCACC), clear cell mucoepidermoid carcinoma (CCMEC) and clear cell epithelial myoepithelial carcinoma (CCEMC).

CCACC has typical acinar cells admixed with clear cells that are found in small clusters lining the microcystic spaces. The



**Figure 1:** Photomicrograph showing epithelial cells arranged in papillary pattern around fibrovascular core (H&E stain, ×40)

Access this article online

Quick Response Code:

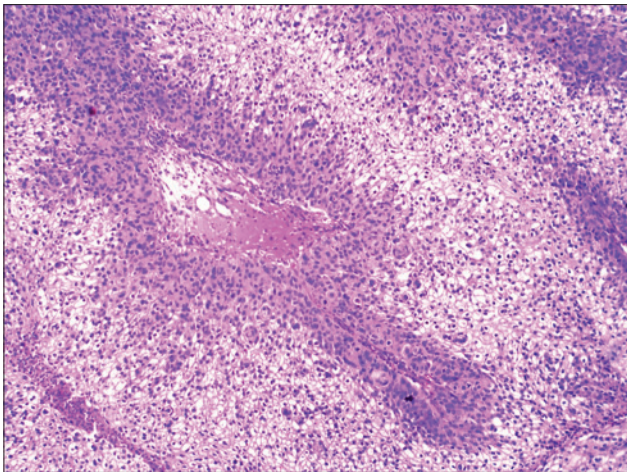


Website:

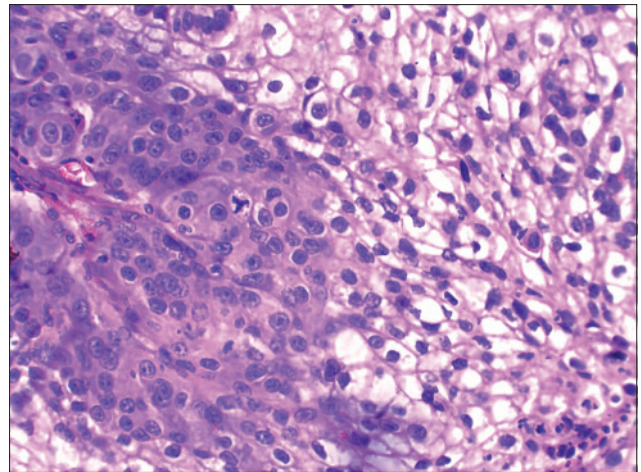
www.jomfp.in

DOI:

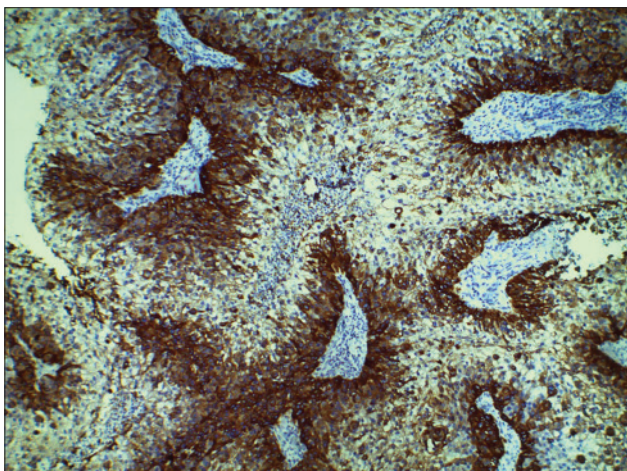
10.4103/0973-029X.131946



**Figure 2:** Photomicrograph showing eosinophilic epithelial cells close to the connective tissue core and clear cells dispersed evenly around it (H&E stain, ×100)



**Figure 3:** Photomicrograph showing eosinophilic epithelial cells exhibiting atypia and clear cells with less atypia (H&E stain, ×400)



**Figure 4:** Photomicrograph showing tumor cells with CK positivity (IHC stain, ×100)

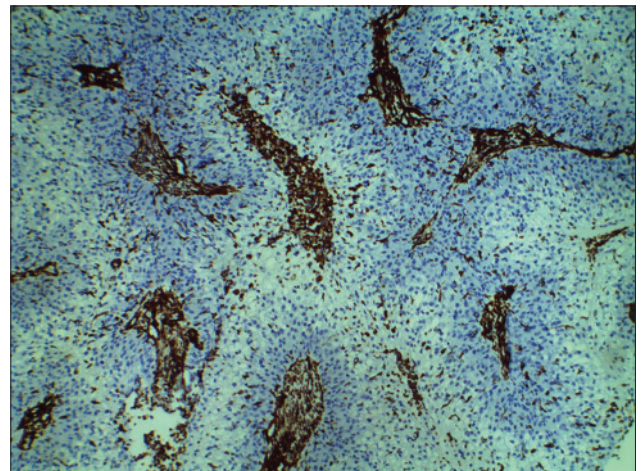
tumor is positive for amylase, cytokeratin (CK), S-100 protein and vimentin.<sup>[5]</sup>

CCMEC is biphasic with a squamous cell and a mucous cell component and few cells with features of both types termed as intermediate cells. Clear cells may contain Periodic acid-Schiff (PAS)-positive diastase sensitive droplets of glycogen. Special staining for mucicarmine or alcian blue can identify the mucous cell population.<sup>[6]</sup>

CCEMC has a distinct biphasic pathognomonic appearance. The islands of tumor cells are composed of small ducts lined by cuboidal epithelium that are surrounded by clear cells that interface with a thickened hyaline-like basement membrane.<sup>[7]</sup>

### Metastatic carcinoma

Carcinomas from kidney, liver, large bowel, prostate and thyroid are known to have the potential for clear cell differentiation and tend to metastasize to the maxillofacial area.



**Figure 5:** Photomicrograph showing vimentin-negative tumor cells (IHC stain, ×100)

Renal cell carcinoma (RCC) is the most common tumor that metastasizes to the jaws, especially the mandible and it is the main diagnostic possibility when considering a distant primary neoplasm with clear cell differentiation.

RCC is characterized by tumor cells that are round or polygonal in shape with abundant clear/granular cytoplasm, which contains glycogen or lipids along with prominent sinusoidal vascular component and hemorrhagic areas.<sup>[8]</sup>

### Final diagnosis

Papillary squamous cell carcinoma of maxillary antrum-clear cell variant.

### Treatment and prognosis

This tumor is infiltrative and is managed by radical surgical resection followed by radiotherapy. It has a better prognosis than the conventional squamous cell carcinoma of the similar clinical stage, provided the treatment protocol is followed.

## REFERENCES

1. Singh A, Rakheja D, Bhatnagar A. Clear cell odontogenic carcinoma: A diagnostic and therapeutic dilemma. *World J Surg Oncol* 2006;4:91.
2. Nair MK, Burkes EJ, Chai-U-Dom O. Radiographic manifestation of clear cell odontogenic tumor. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 2000;89:250-4.
3. Maria A, Ricardo G, Edgard S, Vera A, Minas G. Clear cell ameloblastoma: A case report. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 1996;81:79-83.
4. Kumamoto H, Sato I, Tateno H, Yokoyama I, Takahashi T, Ooya K. Clear cell variant of CEOT in maxilla: Case report with immunohistochemical and ultrastructural investigations. *J Oral Pathol Med* 1999;28:187-91.
5. Ellis GL, Corio RL. Acinic cell adenocarcinoma. A clinicopathologic analysis of 294 cases. *Cancer* 1983;52:542-9.
6. Bhaskar SN, Bernier JL. Mucoepidermoid tumors of major and minor salivary glands. Clinical features, histology, variations, natural history and results of treatment of 144 cases. *Cancer* 1962;15:801-17.
7. Eversole LR. On the differential diagnosis of clear cell tumors of the head and neck region. *Eur J Cancer B Oral Oncol* 1993;29:173-9.
8. Premlatha BR, Rao RS, Patil S, Neethi H. Clear cell tumors of head and neck: An overview. *World J Dent* 2012;3:344-9.

**How to cite this article:** Patankar SR, Poornima V, Avdhani V, Bhatia S. Papillary squamous cell carcinoma of antrum-clear cell variant. *J Oral Maxillofac Pathol* 2014;18:146-8.

**Source of Support:** Nil. **Conflict of Interest:** None declared.