# Squamous cell carcinoma arising from keratocystic odontogenic tumor

Supriya Kheur, G S Mamatha, Neeta Bagul, Kapil Kshirsagar[1]

Departments of Oral Pathology and Microbiology and [1]Oral Surgery, D.Y. Patil University's Dr. D.Y. Patil Dental College and Hospital, Pimpri, Pune, Maharashtra, India

**Received:** 14.12.2016, **Accepted:** 19.12.2016

## INTRODUCTION

Squamous cell carcinoma (SCC) arising from epithelial lining of Keratocystic Odonogenic Tumour(KCOT) is very rare with 0.001-0.002 incidence.[1] Keratin metaplasia leading to epithelial hyperplasia and dysplasia can be one of the mechanisms of malignant changes so, presence of keratinisation in the cyst lining increases the risk of malignancy.[2,3] According to the new histological classification of tumors of the WHO, SCC arising from KCOT need to be treated as specific entity than arising from other odontogenic cysts.[4] This paper presents a case of SCC arising from Keratocystic Odonogenic Tumour(KCOT).

## CASE DETAILS

A 55-year-old male patient reported with a chief complaint of pain and swelling in the left mandibular posterior region. He gave the history of #36 tooth extraction 4 years back. The patient was a tobacco chewer since the past 10 years. On extraoral examination, approximately 2 cm × 1 cm hard swelling was present in 36–38 region and discontinuous lower border of mandible. The lymph nodes were not palpable. On intraoral examination, obliteration of buccal vestibule with expansion of buccal cortical was seen. Orthopantomograph showed radiolucent lesion with ill-defined borders and pathologic fracture of lower border of mandible.

Access this article online

Quick Response Code:

Website: www.jomfp.in

DOI: 10.4103/jomfp.JOMFP_101_13

## MICROSCOPIC FINDINGS

We received many bits of tissue which on scanner view showed a cystic lumen. The cystic lining was composed of proliferative, dysplastic stratified squamous epithelium which in some sections was thrown in the form of long, drop-shaped rete ridges [Figures 1 and 2]. The features of dysplasia evident were basal cell proliferation, hyperchromatic nuclei, keratin pearl formation. Focal areas showed keratin plugging and broad bulbous rete ridges [Figure 3]. Few areas showed many subepithelial islands of malignant cells in the connective tissue stroma

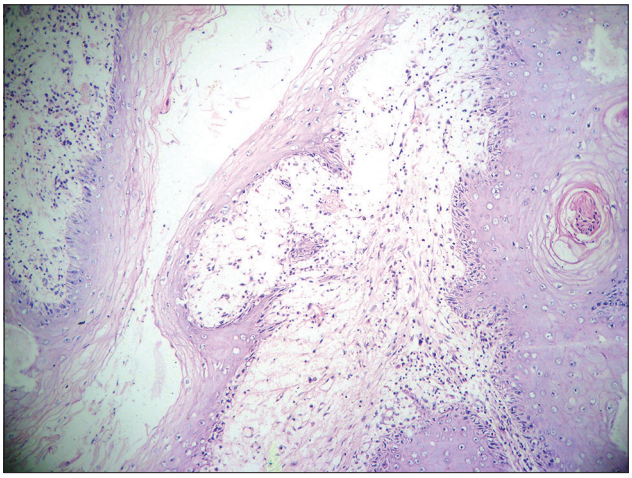

**Figure 1:** Thin odontogenic cyst lining seen. Focal areas exhibiting epithelial proliferation with keratin pearling and dysplastic features (H&E, ×100)



**How to cite this article:** Kheur S, Mamatha GS, Bagul N, Kshirsagar K. Squamous cell carcinoma arising from keratocystic odontogenic tumor. J Oral Maxillofac Pathol 2017;21:168-70.

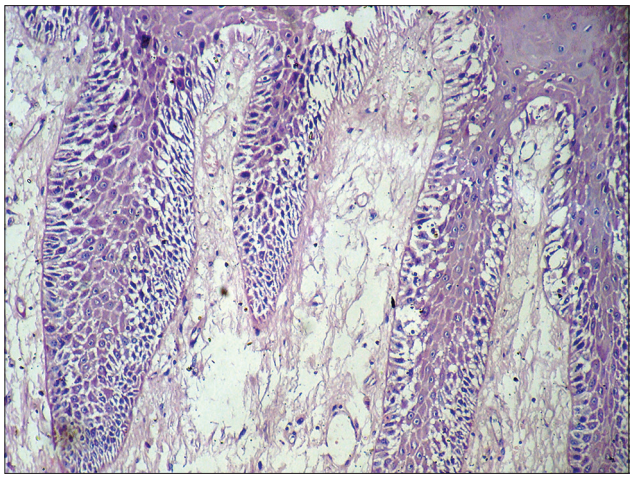

**Figure 2:** Epithelial lining showing thin and drop-shaped rete ridges with dysplastic features (H&E, ×400)

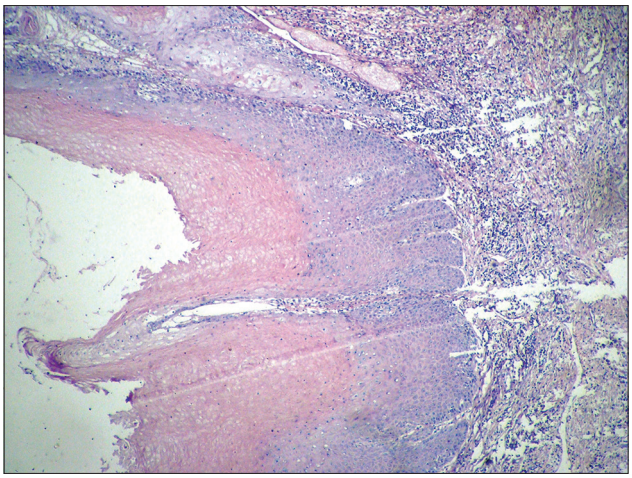

**Figure 3:** Verrucous-like proliferation (H&E, ×100)

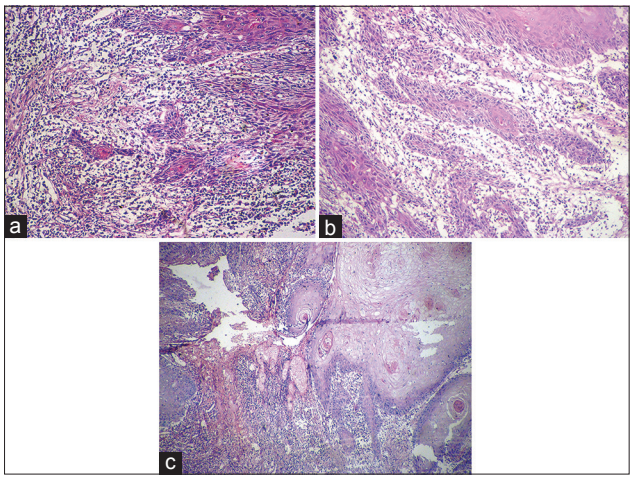


**Figure 4:** (a-c) Various fields showing invasion of malignant epithelial cells in the underlying stroma indicating early invasion (H&E, ×400)

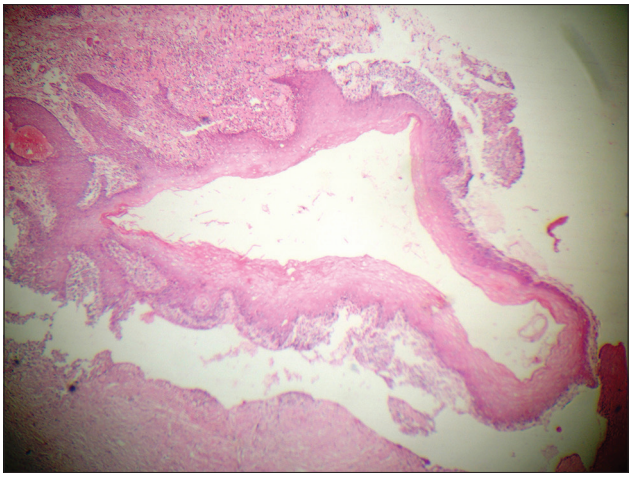

**Figure 5:** Tissue section of recurrent lesion showing keratocystic odontogenic tumor (H&E, ×40)

indicating invasion [Figure 4a-c]. The inflammatory response was moderate with predominant lymphocytes. A diagnosis of squamous cell carcinoma arising from odontogenic cyst was done.

The patient was treated with hemimandibulectomy and interarch fixation was done with wiring. The patient reported back after 3–4 months with a discharge from that area.

After complete exposure of the area with removal of the wiring, the surgeon curetted the area and sent for histopathology. Histopathological analysis revealed proliferative cystic lining composed of para-keratinised stratified squamous epithelium with features keratocystic odontogenic tumor (KCOT) [Figure 5]. The lining was consistently showing dysplastic features, but few areas showed excessive proliferation with keratin pearl formation. Based on the overall features, the diagnosis of squamous cell carcinoma arising from KCOT was arrived.

## DISCUSSION

The epithelial lining of the odontogenic cysts has potential to undergo metaplasia or dysplastic changes or malignancies such as squamous cell carcinoma or mucoepidermoid carcinoma. Keratinisation and long-standing inflammation are suggested to be the predisposing factors for these malignant changes. Carcinoma arising from the cyst showed clinical features similar to a benign expansile of the jaw and rarely associated with pain and paraesthesia. Mandible is commonly affected than maxilla with male gender predilection. Radiographically, odontogenic squamous cell carcinoma showed unilocular or multilocular lesion with ill-defined or well-defined border. Histological features

are consistent with squamous cell carcinoma usually of well-differentiated type.

## Final diagnosis

Squamous Cell Carcinoma arising from KCOT.

## Financial support and sponsorship

Nil.

## Conflicts of interest

There are no conflicts of interest.

## REFERENCES

1. Tamgadge S, Tamgadge A, Modak N, Bhalerao S. Primary intraosseous squamous cell carcinoma arising from an odontogenic keratocyst: A case report and literature review. *e*cancer 2013;7:316.
2. Browne RM, Gough NG. Malignant change in the epithelial lining of odontogenic cysts. Cancer 1972;29:1199-207.
3. van der Wal KG, de Visscher JG, Eggink HF. Squamous cell arcinoma arising in a residual cyst. A case report. Int J Oral Maxillofac Surg 1993;22:350-2.
4. Barnes L, Eveson JW, Richart P, Sidransky D, Editors. World Health Organization Classification of Tumors: Pathology and Genetics of Head and Neck Tumors. Lyon: IARC Press; 2005. p. 290.