

## Letter to the Editor

### Primary intraosseous squamous cell carcinoma in a dentigerous cyst

DOI: 10.4103/2278-330X.214579

Dear Editor,

A 76-year-old male complained of a swelling in relation to the right mandibular molar for 4 months. Intraorally, a fluctuant swelling was present on the alveolar ridge measuring 4 cm × 3 cm. Orthopantomogram revealed an impacted 48 with soft tissue shadow. Computed tomography scan revealed a pericoronar cystic lesion with expansion of the buccal and lingual cortices [Figures 1 and 2]. The case was provisionally diagnosed as dentigerous cyst. On excisional biopsy, the gross specimen exhibited a cystic structure surrounding the tooth at the cemento-enamel junction [Figure 3]. Histopathology exhibited hyperplastic cystic lining epithelium with connective tissue wall. The epithelium is of stratified squamous type, exhibiting irregular rete processes, nuclear hyperchromatism, pleomorphism and increased mitosis. Tumor cells are seen arising from the lining epithelium and extending into the lumen [Figures 4 and 5]. Connective tissue wall is infiltrated with tumor cells in some areas. Mucicarmine and periodic acid–Schiff stain was negative. Lining epithelium resembling reduced enamel epithelium was present in a section. A diagnosis of squamous cell carcinoma (SCC) arising from dentigerous cyst was made.

The patient was later referred to an Oncology center. Associating the histopathological and imaging features<sup>[1,2]</sup> a diagnosis of primary intraosseous SCC (PIOSCC) was made.

PIOSCC is defined as a “SCC arising within the jaw, having no initial connection with the oral mucosa and presumably developing from residual odontogenic epithelium or an odontogenic cyst or tumor.”<sup>[2]</sup> Incidence of malignant



Figure 1: Orthopantomogram demonstrating impacted 48 and soft tissue shadow



Figure 2: Computed tomography scan demonstrating bicortical expansion with buccal perforation



Figure 3: Gross specimen of the lesion

transformation from odontogenic cysts ranges from 0.13% to 2%.<sup>[3]</sup> PIOSCC arising from odontogenic cysts other than

keratocystic odontogenic tumor commonly occurs in mandible<sup>[4]</sup> with male predilection, at an average age of 56 years.<sup>[4]</sup> Radiation and chemotherapy are included in the treatment modalities. The 5-year survival rate of PIO SCC varies between 30% and 40%.<sup>[5]</sup>

#### Acknowledgment

We would like to thank Department of Oral and Maxillofacial

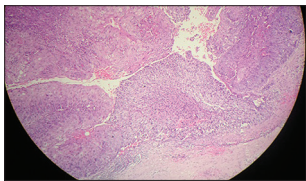


Figure 4: Photomicrograph showing folded hyperplastic cystic lining epithelium of stratified squamous type exhibiting dysplastic features. (H and E stain, x10)

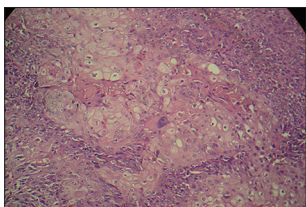


Figure 5: Photomicrograph showing tumor cells with hyperchromatism, pleomorphism, altered nuclear cytoplasmic ratio and keratin formation. (H and E stain, x40)

Pathology, Meenakshi Ammal Dental College and Hospital, Chennai - 600 095, Tamil Nadu, India, for processing the specimen and preparing the slides.

#### Financial support and sponsorship

Nil.

#### Conflicts of interest

There are no conflicts of interest.

**Karthika Panneerselvam,  
Anantanarayanan Parameswaran<sup>1</sup>, B. Kavitha<sup>2</sup>,  
Elavenil Panneerselvam<sup>3</sup>**

Department of Oral Pathology and Microbiology,  
Karpaga Vinayaka Institute of Dental Sciences, Kanchipuram,  
Maduranthakam, Departments of <sup>1</sup>Oral and Maxillofacial Surgery and  
<sup>2</sup>Oral Pathology and Microbiology, Meenakshi Ammal Dental College,  
<sup>3</sup>Department of Oral and Maxillofacial Surgery,  
SRM Dental College, Chennai,  
Tamil Nadu, India

**Correspondence to:** Dr. Karthika Panneerselvam,  
E-mail: karthikaomfp@gmail.com

#### References

1. Saxena C, Aggarwal P, Wadhwan V, Bansal V. Primary intraosseous squamous cell carcinoma in odontogenic keratocyst: A rare entity. *J Oral Maxillofac Pathol* 2015;19:406.
2. Iino M, Ishikawa S, Ozaki H, Kobayashi T, Tachibana H, Sakurai H, *et al*. Solid type primary intraosseous squamous cell carcinoma in the maxilla: Report of a new case. *BMC Ear Nose Throat Disord* 2013;13:13.
3. Araújo JP, Kowalski LP, Rodrigues ML, de Almeida OP, Lopes Pinto CA,

Alves FA. Malignant transformation of an odontogenic cyst in a period of 10 years. *Case Rep Dent* 2014;2014:762969.

4. Barnes L, Everson J, Reichart P, Sidransky D. World Health Organization Classification of Tumours: Pathology and Genetics of Head and Neck Tumours. Lyon: IARC Press; 2005. p. 291.
5. Zapala-Pospiech A, Wyszynska-Pawelec G, Adamek D, Tomaszewska R, Zaleska M, Zapala J. Malignant transformation in the course of a dentigerous cyst: A problem for a clinician and a pathologist. Considerations based on a case report. *Pol J Pathol* 2013;64:64-8.

---

This is an open access article distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 3.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as the author is credited and the new creations are licensed under the identical terms.

**How to cite this article:** Panneerselvam K, Parameswaran A, Kavitha B, Panneerselvam E. Primary intraosseous squamous cell carcinoma in a dentigerous cyst. *South Asian J Cancer* 2017;6:105.