



CASE REPORT

Primary Intraosseous Squamous Cell Carcinoma Coexisting with a Radicular Cyst: Case Report

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Abstract

The term primary intraosseous odontogenic carcinoma (PIOC) has been primarily used to describe a squamous cell carcinoma within the jaws arising either from a previous odontogenic cyst or de novo. Primary intraosseous squamous cell carcinoma (PIO SCC) is a rarely seen malignant lesion in the jaw where there is no relation with soft tissues like the oral mucosa. The incidence of carcinomas arising from odontogenic cysts is particularly uncommon.

Case Report: In this case report, an intraosseous squamous cell carcinoma arising from a radicular cyst in a 60-year-old male patient is presented.

Conclusion: This case report clearly shows the significance of the clinician's awareness of a malignant potential of odontogenic cystic lesions and the correct time management of the treatment protocol of those lesions.

Keywords: Squamous Cell Carcinoma, Radicular Cyst

Introduction

Carcinoma arising in the jawbone in the epithelial lining of odontogenic cysts is an extremely rare condition. A primary intraosseous squamous cell carcinoma (PIO SCC) is defined as "a squamous cell carcinoma (SCC) arising within the jawbones, which having no initial connection with the oral mucous membrane.[1]

Malignant change in the epithelial lining of odontogenic cysts is very rare, but these changes have been described in the literature. [2,3]

Case Report

A 60-year-old male patient came to the clinic with a complaint of pain in the right maxillary lateral incisor area. The patient had a history of smoking, 2 packets/day for 40–45 years. The patient is free of any systemic illness. On extraoral examination, persistent cutaneous fistula on his right alar nose was observed in the last 6 months. The regional lymphadenopathy was absent. On CBCT and panoramic radiographs, an oval, unilocular radiolucent lesion with sclerotic borders, similar to the radicular cyst associated with the upper right lateral incisor root, was detected (Figure1). After root canal treatment, it was decided to perform apical resection of the relevant tooth. Under

local anaesthesia, sulcular incision was made and the area was exposed clearly. Erosion of the buccal plate was observed intraoperatively. The apical resection was made and the cystic lesion around the tooth was enucleated from the maxillary bone. Excisional biopsy was done and sent for histopathological examination. Histopathological analysis showed a cystic lesion partially lined by nonkeratinized stratified squamous epithelium which was altered by the intense inflammatory cell and the tumour infiltration into the fibrous cystic tissue wall (Figure2). Degenerative changes and dysplastic features were observed in the epithelial lining of the cystic wall. The islands of anaplastic squamous cells with marked nuclear pleomorphism, hyperchromatism, and individual cell keratinisations were characterized in a connective tissue wall of cystic lesion (Figure3). Histopathological examination indicated that the lesion was PIO SCC originating from the Radicular cyst lining. The Radiation Oncology Department was consulted, and the treatment started. Due to their location within the bone, SCC arising from a radicular cyst is staged as T2 cancer. To achieve negative margins, frozen section examination was applied during surgery, and lesion margins with high dysplastic features, confirming the tumour size up to 3x2x2 cm, were determined. Including the 1 cm healthy bone margin, the maxillary bone was removed. The patients

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received adjuvant radiation therapy in addition to surgery. The postoperative course was uneventful except for scar formation and no recurrence was observed for 6 months following surgery.

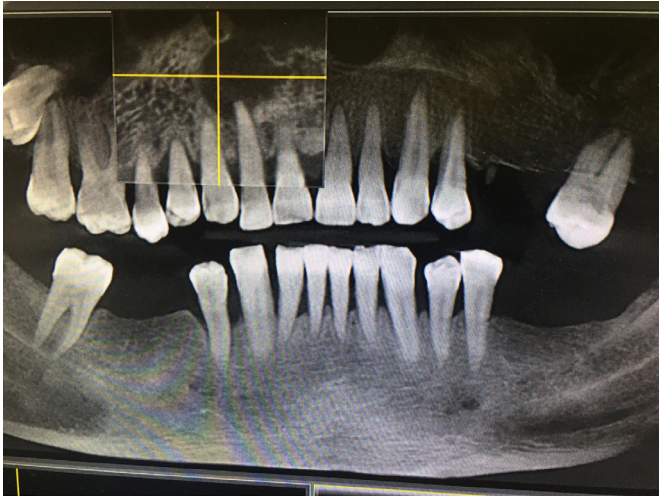


Figure 1: CT showing the periapical lesion at the root of the upper right lateral incisor

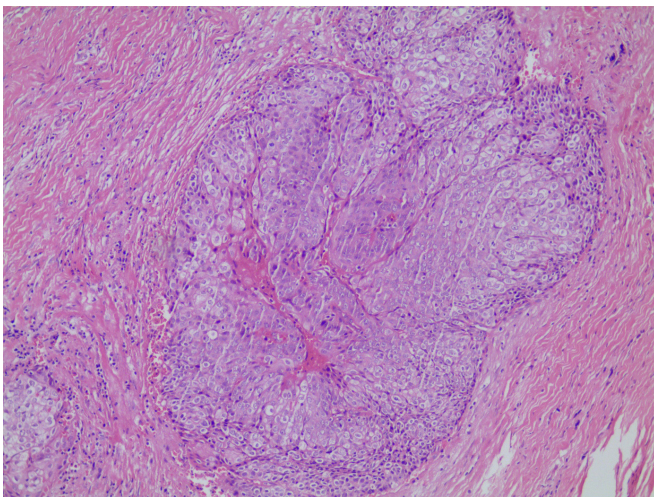


Figure 2: Tumour infiltration into the fibrous cystic tissue wall (HEx100)

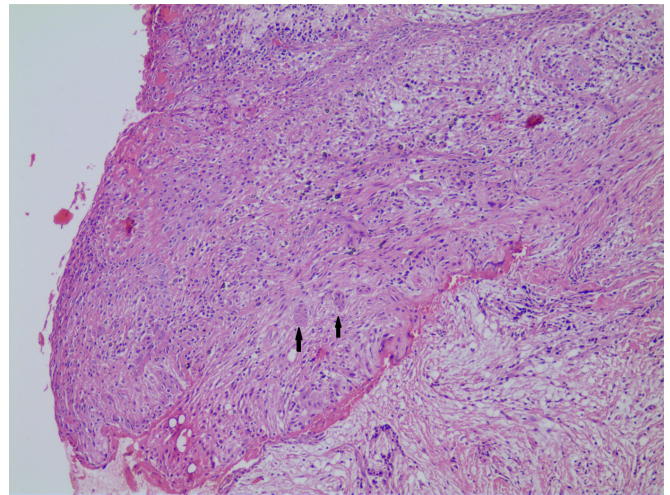


Figure 3: Dysplastic features with microinvasion seen as the island of anaplastic squamous cells with marked nuclear pleomorphism (Hex100)

Discussion:

The mean age of patients in PIOSCC and odontogenic cysts is 60.2 years. While it is more common in males, the estimated prevalence rate is 2/1 for males/females.[4] As in a similar previous report, PIOSCC originating from the radicular cyst was detected in this case.

PIOSCC ex odontogenic cysts represent well or moderately differentiated squamous cell carcinoma arising from the cystic epithelial lining [4,5]. In this study, the histopathological assessment showed a well-differentiated squamous carcinoma that developed from a radicular cyst.

In the patients with carcinoma in situ or located intramurally within the cyst, surgical removal is the choice treatment, and the patient should be followed up. Additional therapy such as bone resection, radiotherapy, and chemotherapy even neck dissection should be planned in the patients with positive margins of the tumour and involved surrounding bone (6).

This report showed the significance of the careful examination of the clinical, radiographical, and histopathological features in order not to overlook pathological tissue like SCC in our case.

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