

SYNCHRONOUS OCCURRENCE OF ODONTOGENIC KERATOCYST AND GIANT CELL GRANULOMA- A CASE REPORT

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Abstract

An odontogenic keratocyst (OKC) and a giant cell granuloma (GCG) in the jaws are two well known entities, which have been reviewed extensively. However, the synchronous occurrence of these two lesions is exceptionally rare. We report a case of OKC exhibiting foci of CGC-like lesion.

Keywords: Odontogenic keratocyst, giant cell granuloma

Introduction

OKC is a clinicopathologically distinct form of odontogenic cyst, known for its pathognomonic microscopic features, aggressiveness and high recurrence rate.^{1,2} Many studies have focused on intrinsic growth potential of epithelial lining of OKC^{3,5} and it has been reclassified as keratocystic odontogenic tumor by the WHO.⁶

Giant cell granuloma is thought to be a non-neoplastic, reparative or a reactive process. It consists of spindled fibroblasts that are admixed with collagen, areas of haemorrhage and numerous multinucleated osteoclast-type giant cells.^{7,8}

Although these two entities are relatively common, synchronous occurrence is highly unusual. A thorough search of literature had revealed only one such case report.⁹ We report another case of OKC exhibiting foci of CGC-like lesion in a 29 year old man.

Case report

A 29 year old man visited a private dentist, complaining of swelling on the right posterior mandible since 4 months which is gradually increasing in size. He had no previous history of trauma related to the lesion. The patient's past medical and family histories were non-contributory. The panoramic radiography showed a multilocular radiolucency with a thin

sclerotic margin, in the left mandibular posterior region. The lesion was extending from the distal aspect of second molar till the ascending ramus. A provisional diagnosis of an OKC or ameloblastoma was made. The lesion was surgically removed and submitted to the Dept. of Oral Pathology, Yenepoya Dental College, Yenepoya University for histopathological examination.

The excised specimen was well circumscribed, encapsulated, brownish white in colour, and measured 3.5 X 2.5 X 1.2 cm. On sectioning, the specimen appeared as a well circumscribed cystic lesion with a cystic cavity surrounded by a well defined capsule. The cystic capsule was found to be unusually thick in one portion of the specimen. Representative areas of specimen were sampled and subjected to routine tissue processing. Four µm thick paraffin sections were cut and stained with hematoxylin and eosin.

The histopathological examination showed a typical OKC lined by uniform thickness of parakeratinized stratified squamous epithelium, with hyperchromatic and palisaded basal cells (Fig. 1). The luminal surface of the epithelial lining revealed a corrugated appearance. The epithelium-connective tissue interface was flat, without evidence of rete ridges. The connective tissue wall exhibited chronic inflammatory cells in some foci.



Fig 1: Photomicrograph showing characteristic OKC lining epithelium (H&E, 10X)

In one portion of the section, the connective tissue component was highly cellular and vascular with many dilated RBC filled blood vessels. Multiple giant cells exhibiting eosinophilic cytoplasm and containing 10-20 nuclei were found to be distributed in this stroma, mimicking GCG(Fig.2). There was no evidence of any foreign body. The trabeculae of woven bone were also present within the more fibrous connective tissue wall.



Fig 2: Photomicrograph showing cystic cavity lined by epithelium and foci of giant cell granuloma.(H&E, 4X)

Discussion

In the present report, the cystic lesion showed the characteristic histopathological features of an OKC. The presence of GCG like areas in many parts of the connective tissue wall is the most interesting feature in this lesion.

Giant cell reaction has been reported in odontogenic tumors like ameloblastoma and odontogenic fibroma. The authors have interpreted these combinations as an odontogenic tumor with reactive giant cell response, although the initiating stimulus was not identified.^{8,10,11} An association between Giant cell granuloma and other conditions like central ossifying fibroma and benign fibro-osseous lesions of the jaw has also been reported.^{12,13}

Similarly, OKC also can occur simultaneously with a traumatic bone cyst and as well ameloblastoma.^{14,15,16} But OKC exhibiting foci of GCG like lesion is very rare and only one case has been reported by Yoon J.H et.al in a 10 year old boy.⁹

The present lesion was unusual in its gross appearance. In contrast to typical OKC lining, the lesion had an unusually thick lining particularly in the posterior part. The same area exhibited the CGCG like features microscopically. The author of previous similar case report had interpreted the giant cell granuloma like areas as reactive process of osteoclasts. As the CGCG like area was observed mainly in one part our case might be mere co-existence of two lesions which would have coalesced. However the possibility of overt proliferative reaction of bone resorbing osteoclasts should also be considered.

In conclusion, this form of hybrid lesion is rare, with only two cases reported including the present case. Because of the scantiness of the combined cases, the significance and biologic behaviour of such cases is uncertain; therefore, close follow-up is recommended. Report of additional cases of this kind may add clarity to our understanding of this rare entity.

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