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Case Report

Medicine Science 2016;5(4):1011-2

Medicine Science International Medical Journal

An odontogenic cyst causing facial asymmetry: a case report

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Received 15 March 2016; Accepted 20 April 2016
Available online 25 Apr 2016 with doi: 10.5455/medscience.2016.05.8464

Abstract

Radicular cysts are inflammatory in character and the most frequently seen of odontogenic cysts. As they are generally seen to grow painlessly, the first finding may be facial asymmetry. Although seen in every age group, they are most often seen in males aged 20-60 years. The patient reported here presented with complaints of swelling in the right cheek. On the paranasal sinus computed tomography, a cyst appeared to be completely filling the maxillary sinus and this was totally excised with a Caldwell-Luc approach. In the differential diagnosis of cystic masses of the maxillary sinus, there may be confusion with odontogenic cysts. Imaging methods can clearly define the localisation of cystic lesions within the sinus cavity, growth direction, bone tissue loss associated with lysis and osteocondensation. To prevent recurrence, it is necessary to completely remove regenerated mucosa and the residual cyst epithelium.

Keywords: Odontogenic cyst, maxillary cyst, facial asymmetry

Introduction

Radicular cysts are inflammatory character cysts, which are the most frequently seen of odontogenic cystic lesions (62%-65%) [1,2]. They are located at the root tips of non-vital teeth in the necrotic periapical region. Growth factor expressed from inflammatory cells forms the basis of chronic apical periodontitis following dental root canal infection and pulp necrosis and results in the proliferation of epithelial remnants (epithelial rests of Malassez) induced by inflammatory cytokines. Epithelial remnants in the periapical region do not always cause the formation of a cyst. Radicular cysts may sometimes emerge associated with trauma [1,3].

As they are generally seen to grow painlessly, the first finding may be facial asymmetry. Although seen in every age group, they are more often seen in males aged 20-60 years and most often in the upper lateral and incisor teeth [1,2,4].

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Case Report

A 29-year old male patient presented at our clinic with the complaint of a painless swelling in the right cheek which had been increasing for the last 6 months. The patient had previously been examined by a dentist and had been referred to the ear nose throat clinic in respect of maxillary sinus pathology. In the physical examination, a swelling was observed in the right cheek with blistering in the gingivobuccal mucosa. In the endoscopic nasal examination, a swelling was seen in the right lateral nasal wall narrowing the cavity medially and which was soft on palpation. A bone defect associated with the cyst in the lateral nasal wall was considered.

On the paranasal sinus tomography, on the coronal slice there was an appearance of a radiolucent mass with evident borders and surrounded by sclerotic bone, related to the dental root apex and completely filing the right maxillary sinus cavity (Figure 1).

Figure 1. Radicular cyst in the right maxillary sinus seen on coronal CT

Under general anaesthesia, the cyst was totally removed together with the wall with the Caldwell-Luc approach (Figure 2). To investigate the connection with the maxillary sinus, the maxillary sinus ostium was endoscopically widened and the sinus was examined with a 30° endoscope. The sinus wall was seen to have been pushed medially by the dental cyst and there was no connection between the cyst and the sinus.

The pathology diagnosis was of radicular cyst and no recurrence was seen during follow-up. As the tooth apex was exposed, the patient was referred to the dental practitioner.

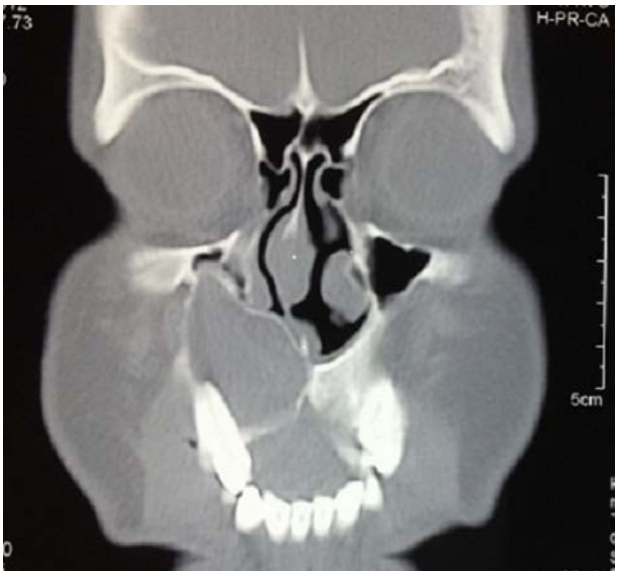

Figure 2 A. Bone resorption associated with the cyst growing in the right maxillary sinüs, **B and C.** Excision of the radicular cyst and the bone cavity which formed.

Discussion

Radicular cysts are histologically characterised as multi-layer, with non-keratinised squamous epithelium. Cholesterol crystals and inflammatory cells are found within the cyst. The cysts are generally seen to have painless growth by pushing against the surrounding tissue and are asymptomatic as they are small in size. With minimal pressure on surrounding tissues, there may be resorption and migration in bone tissues adjoining the nasal cavity such as the sinus, oral vestibule and hard palate or may spread to soft tissue below the oral mucosa. As radicular cysts generally show growth without pain, facial asymmetry which forms as a result of deformation of the alveolar structure, may sometimes emerge as the first finding. In large cysts, as the bone wall has become very thin and fragile and the sound of crepitation in the form of 'cracking eggshells' can be obtained on palpation of the alveolar bone vestibular wall [1,2,4,5].

On radiography, a round or oval radiolucent area is seen, surrounded by sclerotic bone with evident borders in the root apex. Of the imaging methods used, computerized tomography (CT) or Cone Beam CT have started to be often used as these can clearly define localisation within the sinus cavity, growth direction, bone tissue loss associated with lysis and osteocondensation in cystic lesions. According to these definitions, the surgical approach can be more clearly determined. In the postoperative evalution of the maxillary sinus, CT has been found to be superior to radiographic methods [4,6].

In the differential diagnosis, other benign odontogenic tumours of the maxillary sinus (glandular odontogenic cyst ameloblastoma, odontogenic myxoma, calcified epithelial odontogenic tumours), and non-odontogenic lesions (giant cell granuloma, ossifying fibroma, central hemangioma, osteoblastoma, idiopathic histiocytosis) must be considered. Even if these lesions are differentiated from odontogenic cysts clinically and with radiological imaging and localisations, definitive diagnosis can be made as a result of histopathological tests. Therefore, the visualisation of inflammatory structures and cholesterol crystals as a result of fine needle aspiration biopsy is of diagnostic value for odontogenic cysts [4,7].

Conclusion

In large cysts which fill the inside of the maxillary sinus, the best approach is the Caldwell-Luc operation. There is a lower risk of oroantral fistula forming with this approach. Cyst excision is performed under general anaesthesia and to prevent recurrence, it is necessary to completely remove regenerated mucosa and residual cyst epithelium. Avital teeth, which are thought to be the source of the cyst, can also be removed.

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