Dentigerous Cyst of Anterior Maxilla : A Case report and our Experience

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Abstract

Cystic lesions may be odontogenic or non odontogenic in origin and can afflict any part of the jaws. Cysts present in the anterior maxillary region are most noticeable because of their prominence and can range in presentations from mildly decipherable to enlarged swelling leading to asymmetry. Dentigerous cyst is a cyst of odontogenic origin which arises from a follicle of developing tooth bud and though is less common in anterior maxilla but is often found to be associated with supernumerary teeth which are unerupted or impacted in anterior maxilla. We present a case of 15 year old boy afflicted with the condition and its management.

Key words – cystic lesion, anterior maxilla, dentigerous cyst

Introduction

A dentigerous cyst also known as follicular cyst because of its origin from follicle which happens to be a mesodermal structure refers to an entity that encloses the crown of an unerupted tooth by expansion of its follicle, and is attached to its neck[1, 2]. It occurs most commonly in the mandibular third molar, though about 5% have been reported to be associated with supernumerary teeth as well[3]. In the present case the supernumerary tooth was located clinically with respect to left maxillary central incisor and was associated with a supernumerary tooth most likely a mesiodens. Cystic lesions of the anterior maxilla could be unilocular or multilocular, usually with well-defined sclerotic borders[4]. The defect caused by a cystic lesion especially in the anterior maxillary region appear to be quite morbid though undergoes spontaneous regression and manifests good healing when the underlying cause is removed. The size, location depth of the defect may warrant customization in the plan when it comes to manage such defects which in turn may either involve grafting or perhaps left on its own device for spontaneous 'recovery'[5].

Case Report

A 15 years old male presented to the department of oral and maxillofacial surgery with a painless soft tissue swelling since one month. Extraorally a single, diffuse extra oral swelling was seen on left side of the face extending from the philtrum to the nasolabial fold above the upper lip measuring about 3×1 cm in dimensions. The swelling was mildly tender and soft in consistency. On intraoral examination revealed association with attached gingiva and vestibular mucosa in relation to left maxillary central and lateral incisor. There was vestibular obliteration was seen with respect to 21, 22 and 23 (Figure 1) which though had no carious lesion but were tender on percussion. Aspiration using wide bore needle revealed straw colored fluid from the swelling marking an initial impression for radicular cyst. On radiographic evaluation, a radiolucent lesion surrounding a radiopaque entity in anterior part of maxilla was observed which extended from the left lateral incisor to the first molar region. CT scan was performed and it showed lesion in alveolar process of maxilla associated with supernumerary tooth (Figure 2).

Figure 1 – Swelling on left maxillary vestibule

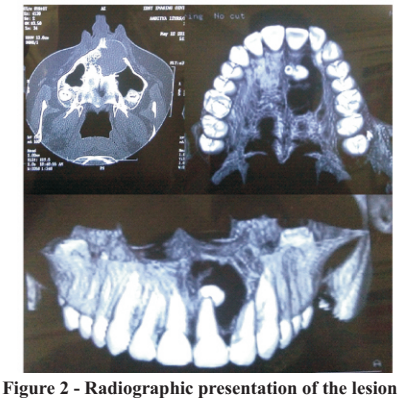

Figure 2 - Radiographic presentation of the lesion

Under local anesthesia crevicular incision was given followed by two vertical incisions. A full thickness mucoperiosteal flap was reflected and the lesion was seen associated with thin bone and supernumerary tooth. A blunt dissection was done separating the lining from the bony shell following enucleation of the cyst along with the encapsulated tooth (Figure 3,4). The defect was packed with surgicel and subsequent hemostasis was achieved followed by primary closure. The excised specimen was sent for histopathological analysis which revealed a cystic lumen lined with stratified squamous epithelium over a connective tissue stroma. Correlation of all clinical, radiological and histological findings confirmed the diagnosis of dentigerous cyst.

Figure 3 - Post excision defect in maxilla

Figure 4 - Excised specimen

Disscussion

Dentigerous cyst are the second most common type of odontogenic cyst which may resorb and expand the surrounding bone

causing malocclusion and facial asymmetry, are usually associated with crowns of permanent teeth most likely third molars or canine, and often maxillary and mandibular incisors, seldom deciduous teeth which can either be impacted or unerupted, for which the treatment revolves around combination of surgical and orthodontic treatments with emphasis on retention of the involved tooth and ensure its eruption in the normal occlusion[6-14].

Surgical removal of the cyst has been considered as the preferred choice of treatment[16]. Marsupialization has been recommended for dentigerous cysts in children to allow the eruption of unerupted tooth; and should be preferred for large cysts where enucleation and tooth removal might result in damage to nerve and blood vessels supplying adjacent teeth[16]. Marx et al in 1988 have proposed the use of platelet-rich plasma as a viable technique to obtain a high concentration of growth factors, observed that autogenous bone grafts matured faster when combined with PRP to treat maxillary defects resulting from the removal of large cystic lesions[15]. Motamedi and Talesh have stated in their study of 40 cysts that dentigerous cysts were usually easy to treat when small, but that the more extensive cysts were more difficult to manage and based their treatment approaches on patient age, cyst site and size, involvement of vital structures by the cyst, and the potential for normal eruption into occlusion of the impacted tooth involved[17].

The gold standard for the treatment of most jaw cysts is enucleation of the lesions. The cavity remaining after enucleation may heal spontaneously by the physiological appositional mechanism of bone growth[18,19]. However, in larger bony defects, the use of bone grafting materials is still controversial[18,19]. Some studies quotes that bone reconstruction has been considered an essential requirement for complete functional rehabilitation after cyst removal. Many studies have supported the use of different bone grafts to reduce the risk of jaw weakness[20-23] .Some researchers have supported that the remaining cystic cavities should be filled with biointegrative materials to prepare the site for implant placement[24]. In our case enucleation was carried out followed by packing with surgicel to achieve hemostasis which was followed by primary closure of the cavity. No grafting measures were sought in the reported case owing to the fact that the patient was young.

Some authors they have reported that spontaneous bone healing occurred without the use of bone grafts[25]. Various factors such as the size of the bony defect, anatomical features, patient's age and other parameters, such as monocortical or bicortical defect type may be related to the success of spontaneous regeneration[24]. In young patients osseoregenerative capacity is better than adults hence can be relied upon to heal spontaneously without leaving any bony defect[18,19].

The developmental as well as inflammatory type of odontogenic cysts associated with the anterior aspect of the maxilla can present range of manifestations and hence for managing such lesions it is prudent that the practitioner should weigh all the options involved in the management for an optimal outcome and cessation of the entity as well.

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