Management of radicular cyst and fibrous epulis in an 11-years old girl

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ABSTRACT

Background: Radicular cyst is the most common lesion of the jaw. The fibrous epulis is applied to any lump arising from gingival, resembles a fibroepithelial polyp, but also usually has an inflammatory component. Purpose: The aim of this study is to management radicular cyst and fibrous epulis in order to restore the function of mastication and esthetic. Case: This case report describes the management of radicular cyst and epulis fibromatosa in an 11-year old girl. Case management: The treatment comprised extraction of the permanent teeth involved and excision of the fibrous epulis in region 36. Recurrence does not occur after 6 month of the treatment since the tooth associated with the cyst has been removed, and the epulis was removed thoroughly. Conclusion: Radicular cyst and fibrous epulis does not recur after adequate treatment.

Key words: Radicular cyst, extraction, excisional, fibrous epulis

INTRODUCTION

The radicular cysts are the most common type of cyst of the jaws. They are more common in males than females, roughly in the proportion of 3 to 2. The maxilla is affected more than three times as frequent as the mandible. They are rarely seen earlier than the age of 10 and are most frequent between the ages of 20 and 60 years. Radicular cysts are rare in the primary dentition, representing only 0.5–3.3% of the total number in both primary and permanent dentitions.

Various reasons cited for this relative rarity include the presence of deciduous teeth for a short time, easy drainage in deciduous teeth due to the presence of numerous accessory canals and a radicular radiolucency in relation to deciduous teeth are usually neglected. Additionally, the lesions tend to resolve on their own following the extraction/exfoliation of the associated tooth and are generally not submitted for histopathological examination. The most commonly involved deciduous teeth are mandibular molars (67%), maxillary molars (17%) followed by anterior teeth.

Radicular cysts are usually asymptomatic and are left unnoticed, until detected by routine radiography. Most radicular cysts develop slowly and do not become very large. Caries is the most
frequent aetiological factor of radicular cysts in the primary dentition. In the permanent dentitions the high frequency of radicular cysts results from trauma, caries and old silicate restorations.

Radicular cyst is generally defined as arising from epithelial residues (rests of Malassez) in the periodontal ligament as a consequence of inflammation, usually following the death of dental pulp. Typically, infection spreads to the apex (root) of the tooth, leading to secondary apical periodontitis, granuloma, or abscess and, finally, cyst formation.

Clinical presentation: a) asymptomatic unless there is an acute exacerbation; b) usually a limited process at root apex or lateral to root surface; c) radiograph shows a round and well-defined radiolucency, usually with a sclerotic margin; d) generally 1 cm or less across, but can be significant in size; e) root resorption uncommon.

The diagnosis was based upon documentation of nonvital tooth and radiograph shows alteration of apical bone. The differential diagnosis are: 1) periapical granuloma; 2) central giant cell granuloma; 3) odontogenic and nonodontogenic tumors; 4) metastatic tumor. And microscopic findings are: a) stratified squamous epithelial lining; b) lumen filled with cell debris, fluid, cholesterol; c) connective tissue wall with mixed inflammatory infiltrate.

Treatment consists of enucleation of the cyst lining coupled with root canal treatment and, in some instances, retrograde surgical endodontic treatment which consists of surgical exposure of the root apex followed by amputation of the root apex and obturation of the opening of the pulp canal, extraction of the tooth and biopsy. Prognosis is excellent and occasional recurrences. Radicular cyst do not recur after adequate treatment.

The term epulis is applied to any lump arising from gingiva. Epulises are generally more common in females than in males, with a prevalent age distribution between the third and fifth decades of life (mean age 37.1 years). Frequently, the lesions are located around anterior teeth, with significant esthetic implications.

Traumatic and inflammatory factors constitute favourable conditions for epulises development. Their size varies from 2.5 to 3 cm, and in most cases they are pediculate, and the colour depends on the tissue structure. The color ranges from lighter shades similar to the surrounding tissues as a consequence of an increased quantity of collagen and to red as a consequence of the abundance vascularized granulation tissue. Lesions are painless, as nerves do not proliferate within the reactive hyperplastic tissue.

One of the most common epulises in children is due to exuberant fibro-epithelial reaction to plaque. The etiologic factors of epulis are trauma, chronic irritation (eg, subgingival plaque and calculus), and bacterial infection. Irritation of the gingival margin by the sharp edge of a carious cavity or by calculus may lead to the formation of a fibrous epulis. Its structure is dominated by mature connective tissue and a network of collagen fibres with a small addition of blood vessels.

Clinical features, the variable inflammatory changes account for the different clinical presentations from red, shiny and soft lumps to those which are pale, stippled and firm. Commonly, lesions are round, painless, pedunculated swellings arising from the marginal or papillary gingiva, sometimes adjacent to sites of irritation (e.g. a carious cavity); they rarely involve the attached gingiva, and rarely exceed 2 cm in diameter. The diagnosis is clinical but most lesions need to be removed and examined histologically.

Accepted treatment of fibrous epulis includes the excisional biopsy. Fibrous epulides should be removed down to the periosteum, which should be curedtted thoroughly. An excisional biopsy is the ideal approach for small lesion, where the clinical appearance suggests that it is benign. Excision should include a 1-2 mm margin of normal tissue surrounding the specimen and allow for primary closure (Figure 1). Removal of a large epulis from the labial aspect of the maxillary gingival may create an unsightly gingival defect, about which patients should be warned in advance.

There should be no recurrence if excision is done thoroughly and the source of irritation is removed. Histological examination is needed to confirm that an epulis is fibrous and not a giant-cell lesion, pyogenic.
granuloma or a malignant tumour. Histologically, it comprises chronically inflamed, hyperplastic fibrous tissue, which may be richly cellular or densely collagenous. The aim of this study is to management of radicular cyst and fibrous epulis in order to restore the function of mastication and esthetic.

CASE

An 11 year-old girl came to the Department of Pediatric Dentistry, Indonesia University, with the major complain of having a painless swelling on her lower left posterior region of the mouth causing her difficulties in chewing. Her mother reported that this painless swelling had been there for the past 1 month and the size is small, but somehow now has become larger.

Intra oral examination, a well-defined spherical swelling of approximately 1 cm in diameter was noticed in the left lower gingival region 36, red in color, soft consistency and pedunculated (Figure 2). There is also the partial eruption of teeth 37 and 47, necrotic pulp in teeth 36 and 46. Radiographic examination showed a well-defined radiolucent unilocular area related to tooth 36 involving 1/3 middle of the root until apex mesial, approximately 1 cm in diameter (Figure 3). Based on the history, examination and clinical findings a provisional diagnosis of a radicular cyst and fibrous epulis was made.

CASE MANAGEMENT

The treatment comprised the extraction of the permanent teeth involved and excisional fibrous epulis region 36 (Figure 4-7). The cyst and fibrous epulis were sent to the laboratory for histopathologic examination, which confirmed the diagnosis of radicular cyst and fibrous epulis. Post extraction and excisional healing was uneventful (Figure 8).

DISCUSSION

A patient came with the major complain of painless swelling on her lower left posterior region of the mouth which causes difficulties in chewing and eating food. This swelling is epulis based on literature that mentioned epulis is applied to any lump arising from gingiva.
From anamnesis, this painless swelling had been there for one month and the size is small, but has become large. Based on literature, epulis lesions are painless, as nerves do not proliferate within the reactive hyperplastic tissue. Even though this lesion is painless, its presence causes difficulties in chewing.

Intra oral examination, a well-defined spherical swelling of approximately 1 cm in diameter was noticed in the left lower gingival region 36, red in color, soft consistency and pedunculated. Necrotic pulp was noticed in tooth 36. Epulis lesions are usually round, painless, pedunculated swellings arising from the marginal or papillary gingiva, and sometimes adjacent to sites of irritation (e.g. a carious cavity). They rarely involve the attached gingiva and exceed 2 cm in diameter. Irritation of the gingival margin by the sharp edge of a carious cavity or by calculus may lead to the formation of a fibrous epulis. Traumatic and inflammatory factors constitute favorable conditions for epulises development. The diagnosis is clinical but most lesions need to be removed and examined histologically.

Radiographic examination showed radicular cyst at region 36, showing a well-defined radioluent unilocular area related to tooth 36 involving 1/3 middle of the root to the mesial apex, approximately 1 cm in diameter. Patient did not notice the presence of the cyst because asymptomatic. Radicular cysts are usually asymptomatic and are left unnoticed, until detected by routine radiography.

The radicular cyst is the most common of the jaw. The associated tooth usually has a deep restoration or large carious cavity. Radicular cyst at region 36 on this patient is due to a necrotic pulp. Clinical presentation of radicular cyst: a) asymptomatic unless there is an acute exacerbation; b) usually a limited process at root apex or lateral to root surface; c) radiograph shows a round and well-defined lesion, usually with a sclerotic margin; d) generally 1 cm or less across, but can be significant in size, e) root resorption is uncommon. The diagnosis were based on documentation of a nonvital tooth and radiograph which showed alteration of apical bone.

The treatment comprised the extraction of the permanent teeth involved and excisional fibrous epulis region 36. Treatment for radicular cyst consists of enucleation of the cyst lining coupled with root canal treatment and, in some instances, retrograde surgical endodontic treatment (surgical exposure of the root apex followed by amputation of the root apex and obturation of the opening of the root canal), extraction of the tooth and biopsy. In this patient, due to the very large cavity and difficulty in restoring the tooth, extraction was decided though accepted treatment of fibrous epulis includes the excisional biopsy, which should be removed down to the periosteum and should be curetted thoroughly.
As a conclusion, radicular cyst arised because untreated necrotic pulp of tooth 36. The treatment for radicular cyst is extraction of the permanent tooth involved. Whereas fibrous epulis in this case occurred due to chronic irritation of the gingival margin by the sharp edge of a carious cavity, and the treatment for fibrous epulis is excision. Prognosis is excellent and it was expected that recurrence will not occur.

REFERENCES