Central Giant Cell Granuloma: Endodontic Considerations
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Abstract

Central Giant Cell Granuloma (CGCG) is a non-neoplastic bony lesion of the jaws with unknown etiology. When the lesion encompasses the apices of teeth, surgical treatment may result in devitalization of these teeth. This report describes a case in which the mandibular anterior teeth were devitalized after the surgical treatment. Endodontically treated with success.

Case Report

A 54 year old female was referred to the graduate endodontic clinic at IUSD for evaluation of an intraoral swelling. The patient had undergone surgical enucleation and curettage of a Central Giant Cell Granuloma (CGCG) in the oral surgery department one month prior to the endodontic evaluation.

Patient developed nonpainful swelling which made her seek treatment. Clinical exam revealed slight intraoral swelling in the buccal vestibule, particularly near the apices of #23/24 and #27 (Figure 1, 2). Teeth #22-27 do not have any restorations present. Class 2 mobility present on #24, 25, 26 and Class 1 mobility present on #23, 27. Pulp sensibility (vitality) testing reveals #23-27 are non-vital.

Radiographic findings:

Panoramic radiographs taken at the oral surgery department post surgical treatment revealed a large 10 mm x 8 mm radiolucency in the mandibular anterior spanning from #23-27. (Figure 4-5). Apical root resorption is present on #27 seen on the PA radiograph (Figure 6-7). A post surgery CBCT scan reveals significant bone loss in the lower anterior mandible (Figure 3). No bone is present on the buccal to the inferior border of the mandible. Minimal bone present on the lingual at the inferior border of the mandible.

Diagnosis:

Pulp necrosis with acute/chronic apical abscess #23, 24, 25, 26, 27.

Treatment Sequence:

Root canal treatment (RCT) was initiated on #23 at the first appointment. Tooth #23 was medicated with CaOH for 2 weeks. At the first appointment, the swelling near #23/24 and #27 was drained and fluid was aspirated using the 23-gauge needle. Peridex gauze hemostasis was obtained. At the second appointment, the patient was asymptomatic and RCT was completed on #23. RCT was initiated on #27 and medicated with CaOH. A panoramic radiograph taken at the 5 month oral surgery follow up indicates that healing has started (Figure 5). This is also evident in the most recent radiographs taken (Figure 8-9).

Discussion

Surgical treatment of CGCG can result in the devitalization of teeth involved. Pulp sensitivity testing and endodontic intervention prior to surgery should be considered.

Central Giant Cell Granuloma

Central Giant Cell Granuloma (CGCG) is a non-neoplastic bony lesion of the jaws with unknown etiology. It has a 2:1 female gender predilection and is most common in the anterior mandible, unique among the most common bony lesions. While considered benign, it is classified as either aggressive or nonaggressive. The aggressive types are more likely to be over 5 cm with multilocular radiolucencies, exhibit rapid growth, cortical thinning, resorption of roots, and recurrence. Because the nonaggressive type remain smaller and unilocular, they can be confused as periapical granulomas, emphasizing the importance of establishing a differential diagnosis and employing pulp sensibility testing when treating periapical radiolucencies.

Endodontic treatment combined with CGCG

It is suggested by Eisenbud et al that when planning for the surgical treatment of CGCG, it is preferred to endodontically treat teeth that appear to be adjacent to or enveloped within the lesion. This allows the surgeon to be more thorough in the curettage and even allows for a removal of the apical portion of the root if deemed necessary. Losing the apex of a tooth would make post-operative endodontic therapy very difficult. In addition, it is very common for involved teeth to become necrotic following curettage. This results in infection that then delays and opposes the bone fill following successful surgery. It is for this reason that if trying to avoid root canal therapy, close follow-up is indicated to evaluate and identify pulpal necrosis as soon as possible to enable treatment and avoid and delayed healing resulting from a periapical infection.

Importance of Pulp Sensibility (Vitality) Testing

Once it has been recognized that there is a periapical radiolucency present in the jaw, it is important to determine if it is of endodontic or non-endodontic origin. Pulp sensitivity tests, such as cold testing, can help diagnose if the teeth involved in the radiolucency are vital or non-vital. If the teeth are vital, the clinician should consider non-endodontic lesions such as Central Giant Cell Granuloma (CGCG). Performing pulp sensitivity testing can help prevent unnecessary endodontic treatment if the lesion is of non-endodontic origin.

References