CASE REPORT

Cemento-ossifying fibroma - a case report

Syed Zakaullah, Guru Charan D, Neelakamal H Hallur, Shivaraj S Patil

ABSTRACT
Cemento-ossifying fibroma (COF) is a fibro-osseous neoplasm derived from the mesenchymal blast cells of the periodontal ligament, with a potential to form fibrous tissue, cementum and bone, or a combination of such elements. This paper reports the management of cemento-ossifying fibroma in a 23 year old male patient with surgical resection followed by reconstruction with free fibula graft.

Keywords: Cemento ossifying Fibroma; Fibroma; Free Fibula graft

Introduction
Cemento-ossifying fibroma (COF) is a benign mesenchymal odontogenic lesion characterized by a well circumscribed, unilocular radiolucency with mixed radio-opacities, which might be either cementum or bone that can be confirmed histologically. These lesions have the potential to form fibrous tissue, cementum and bone or a combination of all of these substances.1 Cemento-ossifying fibroma radiographically presents a unilocular radiolucency with or without central radio-opacities or a multilocular radiolucency. It is most commonly seen between the third and fourth decades of life, and is more frequent in women than in men (4:1).2,3 These lesions are categorized under fibro-osseous lesions that include other lesions like the fibrous dysplasia, osseous dysplasia, ossifying fibroma and so on. Fibro-osseous lesions of the maxillofacial region are usually benign and tend to grow slowly and the size can range from 1 cm to as large as the lesion being reported here. This paper reports the management of cemento-ossifying fibroma in a 23 year old male patient with surgical resection followed by reconstruction with free fibula graft.

Case Report
A 23-year old male patient was reported to the department of oral and maxillofacial surgery, Al-Badar Rural Dental Collage and Hospital, Karnataka, India, with a chief complaint of swelling on the left side jaw for last six months. History reveals that the swelling gradually increased to the present size and was not associated with any kind of pain or paraesthesia. Medical and dental history was non relevant.

On clinical examination, a diffused, oval shaped swelling, measuring approximately 7.5 cm x 6 cm in size extending anteriorly from the left oral commissure to the anterior border of the masseter muscle posteriorly and extending inferiorly from the lower border of the mandible was noted (Figure 1). On intra oral examination bicortical expansion of the mandible was noted. The swelling was non-tender, bony hard in consistency with intact healthy mucosa over it. No evidence of paraesthesia was seen. Patient was subjected to a computed tomography scan (Figure 2) with 3-D reconstruction. All laboratory and routine blood investigations came out normal. Based on the clinical features the lesion presented, it was provisionally diagnosed as Ameloblastoma and differential diagnosis included Cemento-ossifying fibroma along with central Giant cell granuloma and odontogenic myxoma. Based on the histopathology of biopsy specimen, it was diagnosed as Cemento-ossifying fibroma. Surgical resection was carried out without disarticulation and reconstruction was done with free fibula graft that was fixed using reconstruction plates under general anesthesia (Figure 3,4). A team of orthopaedicians attached to our institution harvested the graft. Graft harvested was 15 cm long and was scored and shaped like the mandible. Post operative healing was uneventful with a follow-up of six months (Figure 5).

Discussion
Cemento ossifying fibroma is a benign fibro osseous tumor. These tumors are thought to arise from the periodontal ligament, and are composed of varying amounts of cementum, bone and fibrous tissue.4 The production of these cementum like structures may be associated with membranous bone, and may related to cementogenesis.5 The WHO classifies cemento-ossifying fibroma as a fibro-osseous neoplasm, included among the non-odontogenic tumors, derived from the mesenchymal blast cells of the periodontal ligament, and with a potential to form fibrous tissue, bone and other such elements.5,7

Controversies exist regarding the origin of such lesions since, tumors like these have been reported previously in bone lacking the presence of periodontal ligament physiologically, such as in ethmoid bone, frontal bone and even in long bones where it is termed as the cementiform fibrous dysplasia.8 As these tumors can display a variety of fibro-osseous lesions, ranging from those with only deposition of cementum to those with deposition of only bone and arising from periodontal ligament, these are also known as central cemento-osseous fibroma.9 These lesions are slow growing and more often seen in women in the third and the fourth decades of life.9 While half of the cases are asymptomatic, the growth of the tumor overtime may lead to facial asymmetry with significant mandibular swelling and possible displacement of the roots of the teeth associated with the lesion.6

Quite a few cases have been reported in the past where the history of trauma in the area of the lesion was noted as an etiological factor, which suggests that the lesion is not a true neoplasm but just a connective tissue reaction to trauma, yet by and large, the exact cause of the lesion has not been as-
Acknowledged as in our patient where there was no significant history of any trauma. The recommended treatment of the cemento-ossifying fibroma is excision. Due to the good delineation of the tumor, surgical removal and curettage is also a treatment of choice.2

Although fibro-osseous lesions are rare, they do occur. Hence a sound knowledge of these lesions is essential for a clinician to diagnose and differentiate the condition. Tremendous advances have been made in the field of radio-diagnosis, which has enabled surgeons to plan the reconstruction and rehabilitation of the patient after the surgical procedures in patients with such diseases. When the surgical treatment is carried out at an early age, the cemento-ossifying fibromas rarely recur.2

Conclusion
In conclusion, successful management of cemento ossifying fibroma depends on the establishment of an accurate diagnosis, which is aided by the investigations, and the careful interpretation of the radiographs.

Authors Affiliations
1. Syed Zakaullah, MDS, Professor, Department of Oral and Maxillofacial Surgery, Al-Badar Rural Dental Collage and Hospital, Karnataka, India, 2. Guru Charan D, BDS, Postgraduate Student, Department of Oral and Maxillofacial Surgery, Al-Badar Rural Dental Collage and Hospital, Karnataka, India, 3. Neelakamal H Hallur, MDS, Professor and Head, Department of Oral and Maxillofacial Surgery, Al-Badar Rural Dental Collage and Hospital, Karnataka, India, 4. Shivaraj S Patil, BDS, Postgraduate Student, Department of Oral and Maxillofacial Surgery, Al-Badar Rural Dental Collage and Hospital, Karnataka, India.

References

How cite this article

Address for Correspondence
Dr. Guru Charan D, BDS, Postgraduate Student, Department of Oral and Maxillofacial Surgery, Al-Badar Rural Dental Collage and Hospital, Karnataka, India. Email:charan.donekal@gmail.com

Source of Support: Nil
Conflict of Interest: None Declared