



Planning and surgical treatment of central giant cells granuloma using 3D printed resin prototype

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Abstract:

The Central Giant Cell Granuloma (CGCG) is an intraosseous lesion that has an unknown etiology. It can be considered as a benign neoplasm and as a reactive lesion because it has a local and aggressive behavior which can also be a body reaction induced, for example, by a hemorrhage. That injury occurs more often in the mandible and particularly involves the anterior region, frequently crossing the midline. Its radiographic appearance isn't pathognomonic, showing as lesions well-defined lesions with unilocular or multilocular radiolucency. CGCGs are classified as non-aggressive or aggressive type and, this distinction is so important because it defines the treatment protocol and helps to predict how the post-operative will be. Nowadays, technology can assist and facilitate health specialists minimizing the costs and reducing the time that is expended. The purpose of this research is to describe a case report that reveals the usage of 3D printing resin prototype to help the planning of surgical excision of CGCG in the right maxilla. The 20-year-old female patient came to our service of Oral and Maxillofacial Surgery with a volume growth in the maxilla that could be seen in the extraoral exam. Clinically this lesion was painless and with two years of evolution that started after tooth extraction. The radiography revealed a mixed lesion in the region that displaced the third molar. Using 3D images obtained from computerized tomography, a prototype made with resin was made to help the surgical planning. The woman was submitted to general anesthesia and the surgeon operated a hemimaxillectomy with safety margins. The postoperative phase had no complications. The usage of technology benefiting the surgery can be analyzed in the case report. The careful examination of the clinical, histopathological, and radiographic findings to are essential determine the treatment that will be chosen to administer CGCGs.

Biography:

Lucas Viana Angelim, Academic in dentistry at the Federal University of Pernambuco, Brazil. Intern at Ambulatory of Maxillofacial Surgery and Traumatology Service in the Clinical Hospital at the Federal University of Pernambuco, concentrated on diagnosis, prevention, and treatment of oral diseases. Member of extension projects focused on the prevention and



treatment of cancer in oral and facial regions and in the usage of traditional Chinese medicine to treat temporomandibular disorders.

Recent Publications:

1. Etoz M, Asantogrol F, Akyol R (2019) Central giant cell granulomas of the jaws: retrospective radiographic analysis of 13 patients. *Oral Radiology* 1-9.
2. Tejo-Otero A et al. (2020) 3D printed soft surgical planning prototype for biliary tract rhabdomyosarcoma. *Journal of the Mechanical Behavior of Biomedical Materials* 109.
3. Melo-Muniz VRV et al. (2020) Central giant cell granuloma: A clinicopathological and immunohistochemical study of macrophages, blood vessels, lymphatic vessels and regulatory proteins. *Annals of Diagnostic Pathology* 46.
4. Munoz-Guijosa JM et al. (2020) Rapid Prototyping of Personalized Articular Orthoses by Lamination of Composite Fibers upon 3D-Printed Molds. *Materials* 13:939.
5. Alsufyani NA et al. (2020) A systematic review of the clinical and radiographic features of hybrid central giant cell granuloma lesions of the jaws. *Acta Odontologica Scandinavica Society*.

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