

Odontogenic Keratocyst: Case Description

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Abstract

The Odontogenic Keratocyst is an invasive benign intraosseous lesion, whose diagnosis is only given after it presents clinical alterations manifested when acquiring exacerbated proportions and/or through imaging exams, delimiting the prognosis. The treatment may be directed towards conservative and/or radical techniques, the definition of which is associated with the significant recurrence rate, which advocates the cautious preservation of the patient.

Keywords: Odontogenic Keratocyst, Cysts, mandibular canal

Introduction

Odontogenic keratocyst was first reported by Philipsen in 1956 (BORGHESI) referring to all jaw cysts with keratin formation. Cysts are cavities filled with a liquid or semi-solid content, which is not pus, and its wall is made of epithelium derived from the tooth-forming organ⁹.

The World Health Organization restructured the Classification of Head and Neck Tumors in the 4th edition published in 2017, grouping by odontogenic tumors of epithelial origin, mesenchymal origin, mixed origin and adding the odontogenic cysts. Keratocystic Odontogenic Tumor, so classified in 2005 was framed in the category of odontogenic cysts and its terminology changed to Odontogenic Keratocyst. Evidence considered in the 2005 classification and later seen deficient consist of the detected presence of the mutated P53 gene, present in several malignant neoplasms; the association with the basal cell carcinoma nevoid syndrome, for its high rate of recurrence and aggressive evolution and mutations of the PTCH suppressor gene, however there is proof that this can also be found in dentigerous cysts, lesions that are not neoplastic. (SPEIGHT, KSHIRSAGAR).

The Odontogenic Keratocyst comprises 10% of odontogenic cysts (BORGHESI, MARQUES), representing the third most common cyst in the mandible (ALVES). Its incidence corresponds to the third decade of life with greater predominance in males (MARQUES, ABREU, KSHIRSAGAR).

It is a benign intraosseous lesion originated from remnants of the dental lamina, histopathological mind presents itself as a cystic capsule with a wall of stratified sidewalk epithelium, presence of parakeratin along with layers of basal cells in palisade with vertical nuclei. Internally it contains straw-colored or thick grayish liquid cystic material, containing in its composition keratin, crystals and hyaline bodies (BORGHESI, ABREU).

Characterized by its invasive and aggressive behavior with high recurrence rates. It has growth in the anteroposterior direction, slight expansion of the cortices in cases of small volumes, facial asymmetry, loss of bone continuity, pain, swelling and paresthesia usually arise when they reach exacerbated proportions, its discovery often results from imaging findings (ABREU, MARQUES, ALVES).

The imaging exam of choice, although panoramic radiography is the most routine, is computed tomography because it provides better resources (ALVES).

Radiographically, it appears as a unilocular or multilocular bone rarefaction exhibiting well-defined sclerotic borders, and may cause tooth displacement and be associated or not with an impacted tooth, which corresponds to 25% - 40% of the cases (MARQUES, KSHIRSAGAR).

The clinical and radiographic analysis does not define the diagnosis due to the similarity between the other cystic and neoplastic lesions whose odontogenic origin, among them we highlight the Dentigerous Cyst, Ameloblastoma, Adenomatoid Odontogenic Tumor, Calcifying Odontogenic Cyst, Central Giant Cell Lesion among others, being of utmost importance the histopathological analysis for diagnosis confirmation (MARQUES). The aspirative puncture has its value since keratinizing cysts have reduced soluble protein rates (less than 4.0g/100mL) (KSHIRSAGAR)

CD105 is an endothelial biomarker that detects the average vascular density in new blood vessels (angiogenic potential), which makes the Odontogenic Keratocyst resemble the aggressive form of Ameloblastoma, when compared to the Dentigerous Cyst average vascular density is lower (ALI, BORGUESI).

The treatment can be conducted conservatively through enucleation associated or not with curettage, application of Carnoy's solution, and cryotherapy, generally indicated for young patients whose lesion is of large proportion. Radical treatment consists of marsupialization and resection. The high recurrence rate has been described by the residues left after a given procedure, and the surgical ones have shown a higher rate when not performed accurately, this together with the high metabolic activity of the epithelium, oxidative enzymes and pentose phosphate shift mechanism. When compared to enucleation, after two days it is reported growth of epithelial tissue and presence of cells similar to fibroblasts with activity of NADH-diaphorase and acid phosphatase (MARQUES, KSHIRSAGAR).

In this report we observed that the clinical and radiographic manifestations were compatible with those described in the literature. There are several options for the treatment of odontogenic keratocysts, but all of them aim to contain the risk of recurrence, preserve anatomical structures and reduce complications, and periodic follow-up is crucial.

Case Report

Patient 23 years old, male, melanoderma, sought care in the dental office for evaluation with the Oral and Maxillofacial team, referring to a pain complaint in left retromolar region for 30 days. On clinical examination, facial asymmetry was not observed, there was no intraoral volume increase, and there was an ulcerated surface with mucosa-like coloring and softened consistency in the left retromolar region, with no signs of infection.

The imaging method of choice was a cone-beam computed tomography of the mandible, showing a hypodense, unilocular image with a sclerotic and well-defined margin, extending anteroposteriorly from the apical region of the mesial root of tooth 37, with involvement of the same, but without resorption, to the retromolar trigone region; In the inferior-superior direction, it extends from the inferior region of the root apex of tooth 38, which is involved by the lesion, to the alveolar bone crest; in the bucco-lingual direction, it extends from one cortex to the other, causing thinning of the corticalluchal cortex without bulging of both cortices, in addition to displacement of the mandibular canal to the lingual cortex; it can be seen that the lesion limit does not intrude into the cemento-enamel junction of tooth 38.

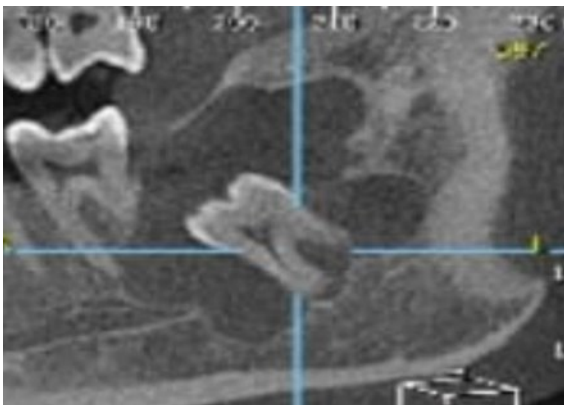


Fig. 1: Initial tomographic aspect, unilocular radiolucent image with well-defined limits in the left posterior region of the mandible, associated with the left mandibular third molar.

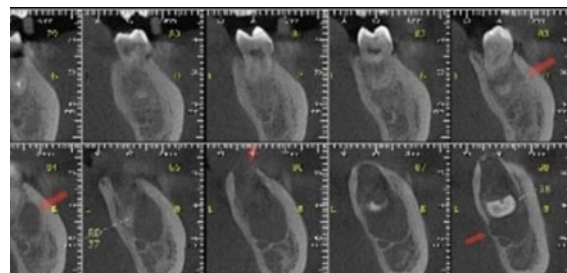


Fig. 2: Parasagittal/oblique sections, showing bulging of the buccal and lingual cortices and the path of the mandibular canal.

An aspiration puncture was not performed and an excisional biopsy under general anesthesia was chosen. The surgical approach initially consisted of infiltrative anesthesia with 2% lidocaine with adrenaline 1:100,000, retromandibular incision, followed by mucoperiosteal detachment and mandibular osteotomy to expose the lesion. Total exeresis of the lesion was performed in association with peripheral ostectomy and removal of the involved tooth. The friable specimen was sent for analysis. At the same surgical procedure, a straight titanium reinforcement plate was installed to avoid a pathological fracture due to the fragility of the bone structure resulting from the extension of the cystic lesion. It was finished with curettage and irrigation with 0.9% saline solution and subsequent continuous suture with monocryl 4-0. Prophylactic intravenous administration of cefazolin 2g, dexamethasone 4mg, and dipyrone 2cc was administered during the transoperative period.

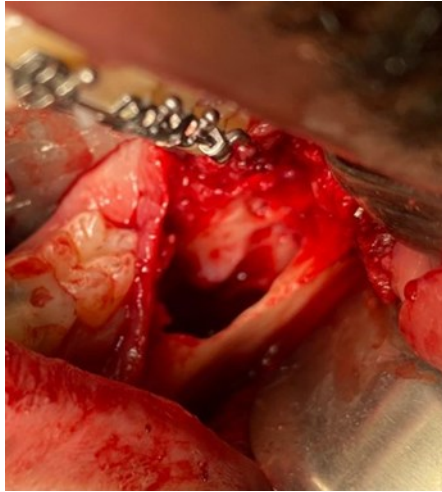


Fig. 3: Surgical site after excision of the cystic lesion.



Fig. 4: Part of the surgical specimen associated with the third molar.

Discussion and Conclusion

The patient presented immediate postoperative paresthesia in the left hemimandible region, but evolved satisfactorily with restricted nutritional follow-up. Oral B-complex, Amoxicillin 500mg, Bi-profenid 150mg and Tylex 30mg were prescribed. Three months after the procedure the patient reported improvement of the paresthesia.

The pathological analysis verified the diagnosis of odontogenic keratocyst.

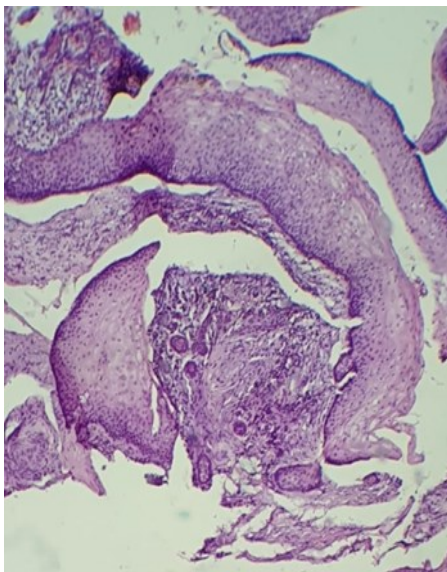


Fig. 5: Histological aspect.

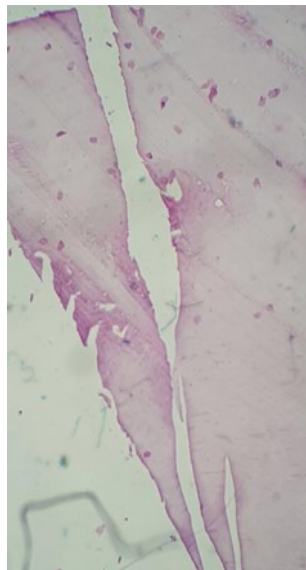


Fig. 6: Histological aspect.



Fig. 7: Pathology report.

In the five-month follow-up, a control radiographic exam was performed, where local bone neoformation, pathology eradication and solidity of the synthesis material were observed. Clinically the patient is without complaints, with preserved mandibular contour and functional stability. The patient will remain under annual clinical and radiographic follow-up.

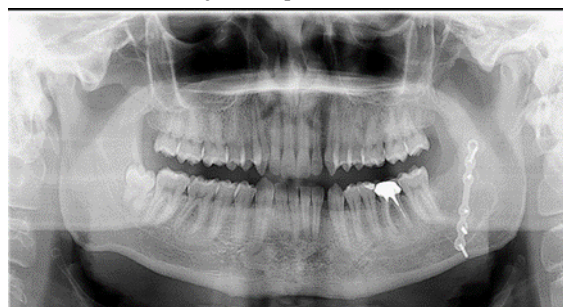


Fig. 8: Follow-up panoramic radiograph after 5 months of the procedure.

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