

## **EXTRACTION OF A RIGHT UPPER SECOND MOLAR WITH PERIAPICAL LESION: CASE REPORT**

Pedro Guimarães Sampaio Trajano Dos Santos, Lucas Cavalcanti de Lima Félix, José Henrique Alves Sarmiento, Juliana Camillo Veras, Rosana Maria Coelho Travassos, Juliana Perez Leyva Ataíde, Ailton Coelho de Ataíde Filho, Luciano Barreto Silva



<https://doi.org/10.36557/2674-8169.2024v6n10p2918-2923>

Artigo recebido em 30 de Julho e publicado em 23 de Outubro de 2024

### LITERATURE REVIEW

#### **ABSTRACT**

**Objective:** The objective of this case report article is to report the extraction of a second upper right molar in which there was a large periapical lesion. **Methodology:** During the construction of this case report, it was necessary to use the work produced by Yin (2001) as a basis, because his study teaches how the structure of a case report article should be, as well as the methodology for searching for articles, course completion, master's and doctoral papers, which are included in this report, enriching it with proven information and scientific basis, improving this study. In order to find works related to the topic addressed and contribute with more information, searches were carried out using the following keywords: Exodontia; Periapical Lesion; Endodontics. In addition to the keywords used to acquire information relevant to the topic, searches were made in the following databases: PUBMED Central, BVS/BIREME, Scielo, Web of Science, PROSPERO in conjunction with Google Academy. **Results:** During the tooth removal process, there was great difficulty because it was extremely worn, fragmenting every time they tried to remove it with forceps, even the crown fragmenting. **Conclusion:** Odontosection was extremely useful in removing this tooth. tooth mainly because it fragments naturally due to its conditions and that after extraction, the presence of a large periapical lesion was seen, which explains the pain the patient felt in the tooth before extraction.

**Keywords:** Exodontia; Periapical lesion; Endodontics.



## 1. Introduction

A periapical lesion is something that was formed from a pathological process, which can be acute or chronic, that occurs in the location of the periapical tissues, triggered by an infection process in the root canal system after pulp necrosis (Sabeti *et al.*, 2006; Silva *et al.*, 2020). Inflammatory periapical lesions are lesions exclusive to the periapex, which end up developing through microorganisms and their byproducts that invade the canal system, which can be seen with great precision through periapical radiographs and which are mostly: periapical granulomas, root cysts and chronic periapical abscesses (Mitra & Adhikari, 2017; Hammouti *et al.*, 2019; Souza *et al.*, 2019; Ferraz *et al.*, 2023). Treatments performed on teeth with periapical lesions aim to eliminate pathological microorganisms distributed in the root canals, preventing other future problems, repairing the original architecture, periapical repair and the biological function of the contaminated tissue (Orstavik, 2004; Rocha *et al.*, 2016).

Considering that periapical lesions are serious problems that impact human health and quality of life, it is extremely necessary that these lesions be treated, with the surgical form being the least conservative, but which in the past was the most commonly used form of treatment, especially when it came to extensive periapical lesions. However, with the advancement of endodontics, there are now other more conservative forms of treatment, leaving the surgical part only in cases where the more conservative forms are ineffective. Thus, periapical lesions are oral health problems that pose a certain challenge regarding their treatment (Mitra & Adhikari, 2017; Santini *et al.*, 2021; Soares *et al.*, 2022).

Thus, it is seen that periapical lesions are a problem that must be treated and that harm the patient's health. The objective of this case report article is to report the extraction of a second molar that had a periapical lesion, in a tooth that had already undergone other forms of treatment but that did not obtain positive effects, reaching a state in which extraction was seen as necessary and as the best solution.

## 2. Methodology

During the construction of this case report, it was necessary to use the work produced by Yin (2001) as a basis, because his study teaches how the structure of a case report article should be, as well as the methodology for searching for articles, course completion, master's and doctoral papers, which are included in this report, enriching it with proven information and scientific basis, improving this study. In addition, the work of Yin (2001) also served to demonstrate how a case should be reported, what it should contain and how the approach should be carried out in it. In order to find works related to the topic addressed and contribute with more information, searches were carried out using the following keywords: Exodontia; Periapical Lesion; Endodontia. In addition to the keywords used to acquire information



relevant to the topic, searches were made in the following databases: PUBMED Central, BVS/BIREME, Scielo, Web of Science, PROSPERO in conjunction with Google Academy. Gray literature was also used to contribute with greater scientific data related to the subject addressed in the report.

### 3. Case Report

A 49-year-old female patient with dark skin came to the office complaining of spontaneous pain in tooth 17 for about two days. The patient reported a history of several restorations performed on this same tooth, which was confirmed during the clinical examination, where definitive restorative material was observed on multiple surfaces. Also during the clinical examination, significant fractures were identified in some restorations, as well as infiltration of the same. The radiographic examination, performed in a periapical view, showed an extensive area of restorative material and little tooth structure, in addition to pulp involvement.

Extraction was proposed and performed during the same consultation. After the team and patient were equipped with protective gear and the clinical table was set up, intraoral antiseptics were started using a 0.12% chlorhexidine digluconate solution. The dental element was anesthetized using the vestibular infiltration technique, where the posterior superior alveolar nerve was blocked and then the greater palatine nerve was blocked, requiring 2 vials of anesthetic, 2% lidocaine associated with the vasoconstrictor epinephrine 1:100,000. Next, syndesmotomy was performed with the Molt detachment device in order to separate the dentogingival tissues surrounding the tooth. Then, using a straight-tipped elevator, the tooth dislocation process began, resulting in, as expected, fracture of the dental crown. The technique with a high-speed handpiece and surgical drill was then used to perform osteotomy around the tooth and odontosection of the vestibular and palatine roots. Using forceps number 65, each of the roots was completely removed with vestibular-palatine movements and a lesion, clinically suggestive of a periapical cyst, associated with the tooth.



Figure 1 - Alveolus after extraction

After removing the element completely, it became clear that it would be necessary to apply a double suture to close the hole that had become quite large, using a careful suture so that the opening would close well after healing.



Figure 2 - Suture performed

After extraction, the alveolus was carefully cared for and the surgery was completed by suturing with a sequence of simple stitches. The patient was medicated with Amoxicillin 500 mg for a period of seven days, and was also given proper guidance on postoperative instructions.

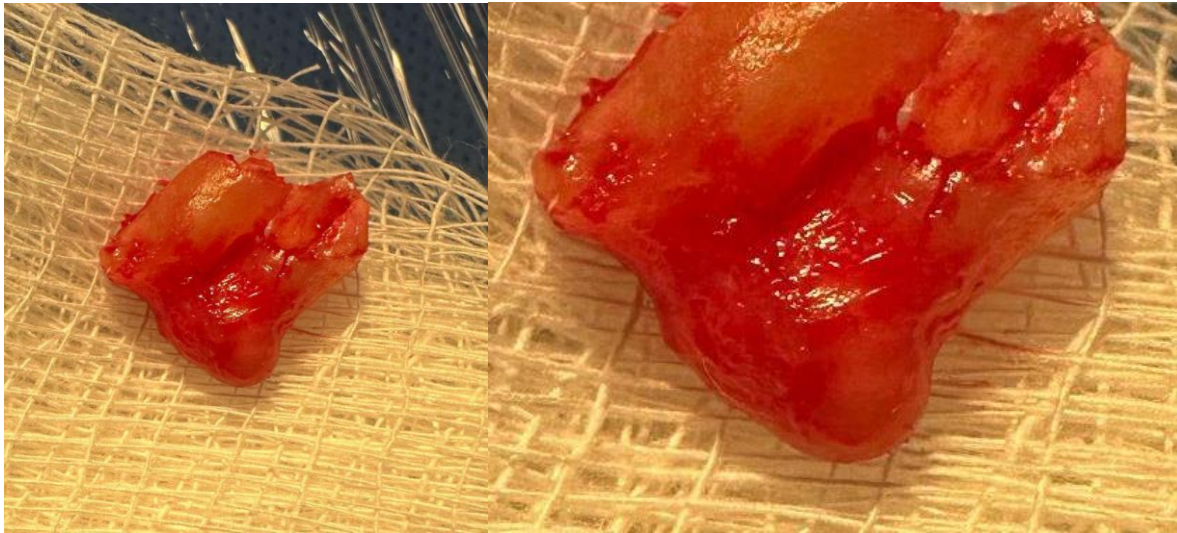


Figure 3 and 4 - Roots of the tooth, where the periapical lesion can be seen at the apex

After surgery, the roots, crown and fragments of the tooth that broke during removal attempts were visualized, when we came across the periapical lesion at the apex that did not break after removal, and could be clearly visualized.



Figure 5 - Remains of the removed tooth that broke off during the removal attempt

The patient was monitored by means of a scheduled appointment seven days after the surgery in question for suture removal. The postoperative appearance was good, with no inflammation, suppuration or pain, satisfactory healing and the patient did not present any complaints.

#### 4. Discussion





During the surgery to remove this second molar, it was extremely difficult to remove it, due to the condition of the tooth, which was extremely worn, decayed, softened and fractured, which caused the tooth to break every time the forceps were used in an attempt to extract the tooth, fracturing pieces of the crown, then fracturing the crown, pieces of the roots, and so the tooth ended up losing a support point for the dentist to use to fit the forceps, applying force to pull the tooth and remove it. From this point on, the odontosection was performed, as there was no support for the forceps, this procedure was done so that the roots could be pulled out of the alveolus, which had an effect, facilitating the removal of the roots, although one of them still had some difficulty in coming out because it was extremely cemented to the alveolus.

Because it was a surgery that took a long time, which left a large space even though it was sutured, the patient was told to avoid hot foods and prioritize only cold things to reduce bleeding. Amoxicillin was prescribed as an antibiotic to avoid contamination in the surgical region together with the mechanical procedures of brushing and flossing, all of this aiming to keep oral health in good homeostasis so that complications or contamination do not occur, which would harm the patient's systemic health and recovery from surgery.

In addition to these recommendations, the use of chlorhexidine was also discussed, which should be applied to the region where the tooth was removed, avoiding the accumulation of bacteria and other microorganisms near the suture and the site where the surgery was performed, so that there is no contamination, using chlorhexidine as a way to prevent this bacterial accumulation, especially since a tooth that was already deteriorated by bacterial flora was removed, which highlights the real need to apply this medication in order to eradicate possible bacteria that may have remained in the region after the removal of the contaminated tooth.

## 5. Conclusion

Thus, it was seen that during this extraction, the dentist had some difficulty in extracting it due to the conditions in which the tooth was found, extremely worn, which caused the crown to fracture in the first attempt to remove it with forceps, and to remove the roots, it was necessary to use a set of instruments and attempts, with odontosection having a crucial role in this extraction, as it facilitated the removal of the two roots, mainly due to the fact that after the crown was fractured, it caused the loss of support for removing the tooth. Thus, it is seen that during the extraction of a second molar, odontosection comes in as a fundamental and effective measure, facilitating the removal of the tooth mainly when the crown is fractured.

## References



- YIN, R. K. *Estudo de caso: planejamento e métodos*. 2. ed. Porto Alegre: Bookman, 2001. (M. Ballejo Canto, Trad.).
- HAMMOUTI, J.; CHHOUL, H.; RAMDI, H. Non-surgical management of large periapical cyst-like lesion: case report and literature review. *Journal of Oral Health and Dental Sciences*, v. 3, n. 1, p. 1–7, 2019.
- MITRA, A.; ADHIKARI, C. Management of large periapical lesions by non-surgical endodontic approach: two case reports. *International Journal of Innovative Research in Dental Sciences*, v. 2, n. 5, p. 97–104, 2017.
- SABETI, M. A.; NEKOFAR, M.; MOTAHHARY, P.; GHANDI, M.; SIMON, J. H. Healing of apical periodontitis after endodontic treatment with and without obturation in dogs. *Journal of Endodontics*, v. 32, n. 7, p. 628-633, jul. 2006.
- ROCHA, M. P.; SILVA, R. V.; SILVA, L. R. M.; ROCHA, T. C. M.; BRITO, A. M.; PEREIRA, R. P. Retratamento endodôntico não cirúrgico: relato de caso. *Revista de Odontologia da Universidade Cidade de São Paulo*, v. 28, n. 3, p. 270-276, set.-dez. 2016.
- ORSTAVIK, D.; QVIST, V.; STOLTZE, K. A multivariate analysis of the outcome of endodontic treatment. *European Journal of Oral Sciences*, v. 112, n. 3, p. 224-230, jun. 2004.
- SILVA, K. G. D. P. D.; ALMEIDA, M. G. N. Periapical lesions: a review of the literature. *International Journal of Dental Research*, v. 12, n. 1, p. 45-52, 2020.
- SANTINI, S. D. I. C. R.; OLIVEIRA, L. F. L. Treatment options for periapical lesions: a systematic review. *Journal of Endodontics*, v. 47, n. 3, p. 567-575, 2021.
- SOUZA, J. F. M. de; COSTA, R. A. D. Clinical and radiographic evaluation of periapical lesions. *Clinical Oral Investigations*, v. 23, n. 5, p. 2341-2348, 2019.
- SOARES, T. R. K. S. P.; ALMEIDA, M. P. D. P. B. The role of calcium hydroxide in the treatment of periapical lesions. *Dental Traumatology*, v. 38, n. 2, p. 129-136, 2022.
- FERRAZ, A. J. R. M. P.; ALMEIDA, L. S. D. Microbial profile of periapical lesions: implications for treatment. *Oral Surgery, Oral Medicine, Oral Pathology and Oral Radiology*, v. 135, n. 1, p. 15-22, 2023.