

## Endodontic Periodontal Lesions: Better Understanding for Better Management

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**Received:** January 12, 2022; **Published:** January 31, 2022

### Introduction

Endodontic periodontal lesions are still controversial as far as diagnosis and classification are concerned. And from this follows another problem in the treatment plan which was based for a long time on the chronology of the lesion. Nevertheless, the prognosis of this type of lesions is very variable and sometimes unpredictable.

Which classification should be adopted for better management?

How to establish an appropriate treatment plan according to the type of lesion to ensure the most favorable prognosis?

From this work, we will try to answer these different questions by illustrating clinical cases [1].

### Case 1

A 38-years-old patient consults for a pus taste in his mouth with antecedant of occasional spontaneous and chewing pain related to the tooth#36. The clinical examination shows a sinus tract with purulent exudate, a negative vitality test and a narrow periodontal probing almost reaching the apex. Pre-operative radiograph shows the communication of the GuttaPercha point with the distal root. The selected diagnosis is a *Gulabivala class I endodontic periodontal lesion*. The canals were shaped to a size of 25/100, 06 taper, disinfected with a 3% sodium hypochlorite solution activated with ultrasonic agitation [2, 3]. A final rinse with 17% EDTA followed by a final flush with saline were completed before fitting the gutta percha cones. Canals were dried with paper points. BioRoot™RCS was used as a bioceramic sealer according to the hydraulic condensation technique.



**A:** Locating cone: the Sinus tract is related to the distal root with peri-apical lesion and bone loss in the inter radicular space to the apex.

### Case 2

A 10 years patient consults for chewing pains. The patient said to have had a fistula highly located next to tooth #46 which was the source of pus. Diagnostic tests were conclusive there is a endo-periodontal lesion (*Gulabivala Class I*).

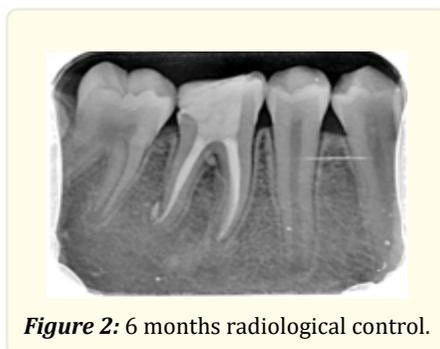
After removal of carious tissues, pre-endodontic restoration was build up in order to isolate the tooth with rubber dam [4].

Access cavity refinement then shaping of the root canals to a size of 25/100, 06 taper with 2shape files (microméga, France) were performed.

Irrigating protocol: NaOCl 5, 5% EDTA 17%, three cycles of 30second by ultrasonic insert activation, then final irrigation with saline. BioRoot™RCS was considered as the material of choice for filling the root canals to obture the channels of the furcation [5].



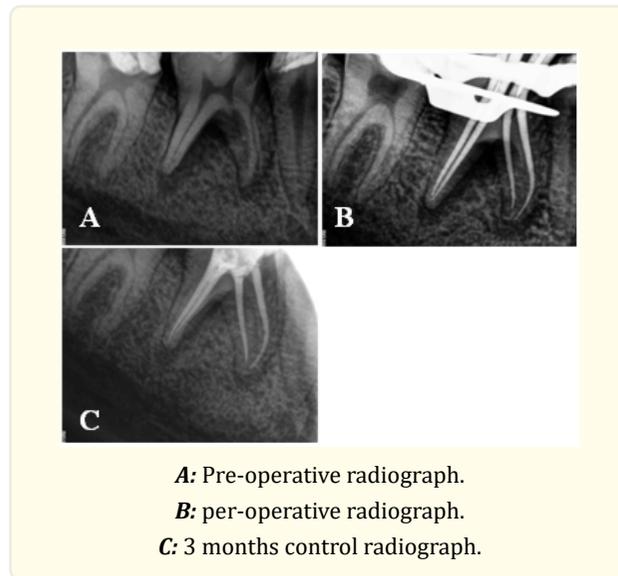
**Figure 1:** pre-operative rx.



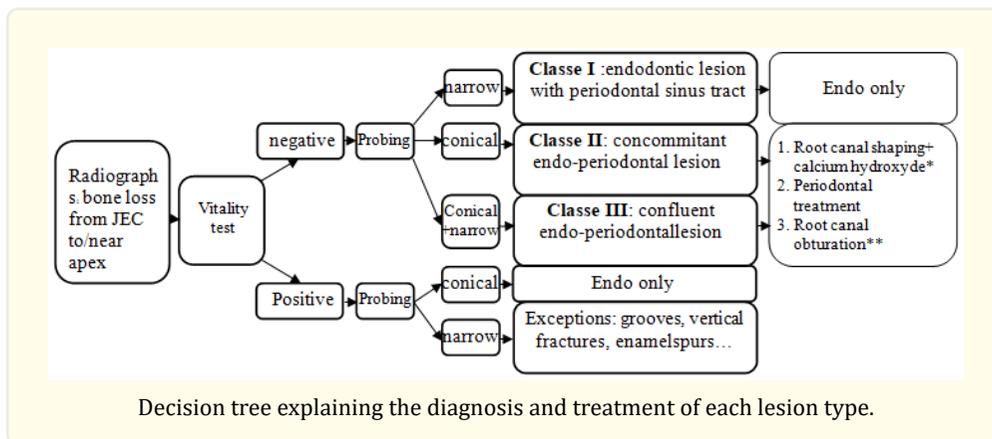
**Figure 2:** 6 months radiological control.

### Case 3

A 45-year-old female patient, whose medical history was non contributory, came to our department for evaluation and treatment of tooth #46. She complained of discomfort on chewing, related to tooth #46. Clinical and radiographic examination revealed a sinus tract and radiolucent lesion in the furcal and distal side of tooth #46. The selected diagnosis is a *Gulabivala class II endo-periodontal lesion*. RCT was performed and the root canals were obturated with hydraulic condensation technique using BioRoot™RCS as sealer [6-8].



**Discussion**



The classification of *Gulabivala and Darbor* was chosen in 2004 because of its simplicity and clinical interest.

The prognosis of class III is based mainly on the extent of the periodontal lesion [9].

\* Inter-sessional sessions with calcium hydroxide are necessary while waiting for epithelial attachment gain of at least 1mm in order to ensure apical sealing of the canal filling.

\*\* It is preferable to perform a hydraulic condensation technique with bioceramic sealer as root canal filling. An active NaOCl irrigation and final rinse followed by a light drying, can attract the hydrophilic sealer inside the accessory channels which is mainly desired in cases of periodontal endo lesion [10].

Bioceramics are promising materials in terms of the filling’s quality as well as in healing; they have a better capacity to seal the lateral channels via the hydraulic pressure exerted, their surface tension and their hydrophilic character. They stimulate, in addition, tissue regeneration.

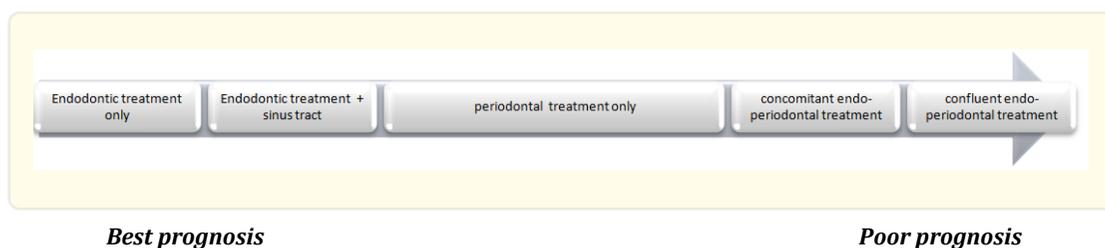
The BioRoot RCS finds its indication in the teeth with endo-periodontal lesions especially those where there is bone involvement. Indeed the release of calcium hydroxide is more important and more prolonged than other cements. By coming into contact with fluids and dentinal tissues it stimulates bone and periodontal regeneration in a short time [11].

The presence of sealer beyond the apex is not a sign of failure and will not be followed by symptoms since this cement is less cytotoxic than other cements. It is well tolerated by the body [12].

Final irrigation should be performed with saline. Any other irrigant such as sodium hypochlorite, EDTA and alcohol can affect the properties of the cement.

Coronal restoration at the end of the treatment is of paramount importance in the prognosis; sealing will prevent bacterial recontamination and will decrease the risk of recurrence [13].

**Prognosis:** Depends on extent of periodontal injury.



## Conclusion

The dual etiopathogenesis of these lesions involves a combination of endodontic and periodontal therapy. It should be noted that the evolution depends essentially on the degree of involvement of the periodontal tissues. But this is not always true: as shown by these different clinical cases, the treatment of the class I is essentially based on the root canal treatment as well as the prognosis and the periodontal treatment is not systematic.

In the management of Class III, the endodontic component is undertaken first and root canal filling will be performed before or after periodontal treatment; this is according to the degree of the periodontal lesion.

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**Volume 1 Issue 1 February 2022**

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