

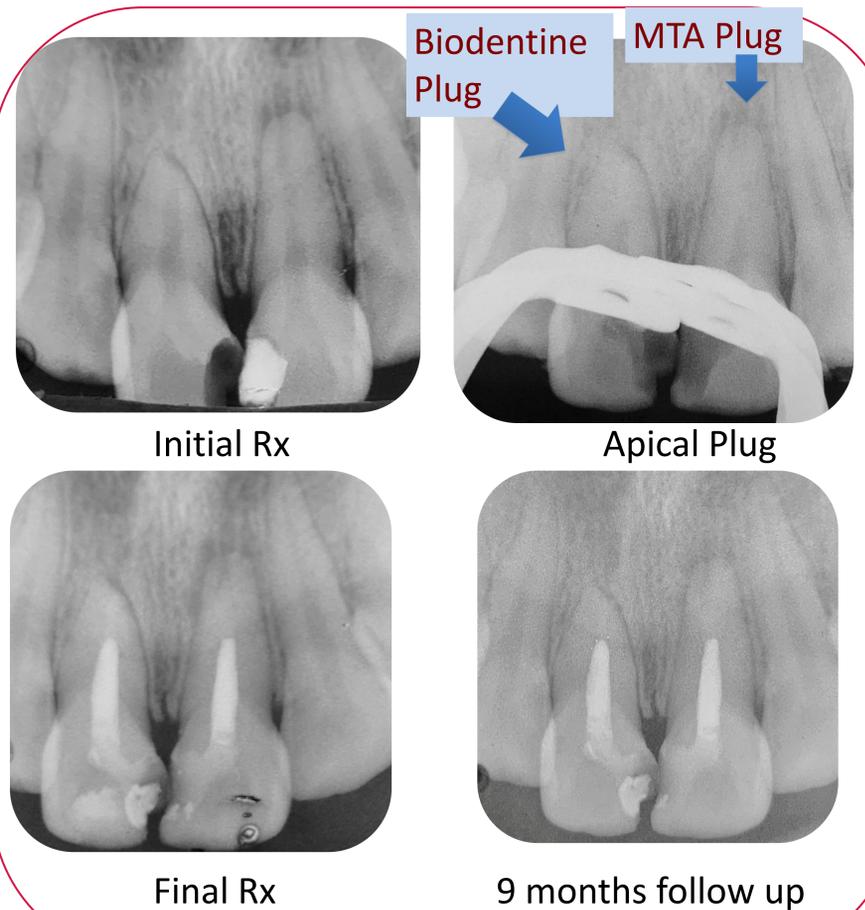
## INTRODUCTION

The completion of root development and closure of the apex occurs up to 3 years following eruption of the tooth.<sup>1</sup> When teeth with incomplete root formation suffer pulp necrosis, the root development ceases and apical closure cannot be achieved, so it does not give an anatomic barrier and can't be filled in a conventional way.<sup>2</sup> Apexification is defined as a method to induce a calcified barrier in a root with an open apex or the continued apical development of an incomplete root in teeth with necrotic pulp.<sup>6</sup> The creation of an apical plug is indicated in teeth with necrotic pulp and open apex to prevent the material from coming out during treatment.<sup>4</sup> The materials that have been used to create the apical plug are Ca(OH)<sub>2</sub> and MTA.<sup>4</sup> The biodentine is a material that has similar results than MTA since they both have tricalcium silicate and dicalcium silicate, but biodentine has a shorter setting time of 12 minutes.<sup>4, 5</sup>

## CASE REPORT

A 16-year-old female patient with pain in the upper central incisors. At the clinical examination did not respond to vitality test. The radiographic examination revealed open apex in both central incisors, so we decided to make apical plugs, randomly choose the upper left central incisor to make apical plug with biodentine and the upper right central incisor with MTA, in the first session we access and open the chamber, the root canal was identified and the root canal length established, the canal was irrigated with 5.25% sodium hypochlorite and 17% EDTA, and then with saline solution for intermediate and final cleaning. The canals were then filled with Ca(OH)<sub>2</sub>, and a temporary filling of IRM. At the second session the Ca(OH)<sub>2</sub> was removed, and the canals carefully washed with 5.25% NaOCl followed by saline solution. An average of 3 to 5 mm apical plug was then made with Biodentine the left incisor and with MTA the right incisor and root filling was completed with guttapercha and Sealapex cement. After nine months, the tooth did not revealed any clinical sign or symptoms of periradicular pathosis.

## RADIOGRAPHICS



## DISCUSSION & CONCLUSION

Root canal treatment in teeth with an open apex represents a significant challenge, because of the size of the canal, the thin and fragile dentine walls and the large open apex. So in this case we decided to use two different materials of the apical plugs in the same patient to see if there was a relevant difference in the clinic o radiographics controls.

The patient presented to his control appointment at 9 monts completely asymptomatic

There is no significant difference between the two materials as they are biocompatible, and both induce a calcified open apex barrier.

## REFERENCES

- 1.-Roberts SC, Brilliant JD. Tricalcium phosphate as an adjunct to apical closure in pulpless permanent teeth. J Endod 1975;1(8):263-9.
- 2.-Camilleri J, Laurent P, About I. Hydration of Biodentine, Theracal LC, and a Prototype Tricalcium Silicate-based Denti Replacement Material after Pulp Capping in Entire Tooth Cultures. Endod 2014;40:1846-1854.
- 3.- Murray PE, Garcia-Godoy F, Hargreaves KM. Regenerative endodontics: a review of current status and a call for action. J Endod. 2007;33:377-390.
- 4.-Nayak G, Hassan MF. Biodentine-a novel dentinal substitute for a single visit apexification. Rest Dent Endod 2014; 39(2):120-125.
- 5.- Priyalakshmi S, Manish R. Review on biodentine-a bioactive dental substitute. J Dent Med Sci 2014;3:13-17.
- 6.- AAE (2003) Glossary of endodontic terms. Chicago: American Association of Endodontists.