INTRODUCTION

The completion of root development and closure of the apex occurs up to 3 years following eruption of the tooth. 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. 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. The revascularization is a regenerative treatment for immature teeth with open apex and necrotic pulp and this allows the development of the root. 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. The materials that have been used to create the apical plug are Ca(OH)\(_2\) and MTA. The biodentine is a novel 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.

METHODS & MATERIAL

A clinical and radiographic diagnosis of teeth with open apex who came to the clinic Specialization in Endodontics, Faculty of Dentistry at the University of Yucatan, in a period from October 2014 to April 2016 was made; I studied the use of two materials (biodentine and MTA) as apical plugs dental organs with open apex. The dental organs through tests vitality of cold, heat, percussion and palpation was diagnosed, and thus identify whether the dental organ was vital or necrotic. If found vital proceeded to perform the treatment of apicogénisis. When the dental organ was necrotic i made an apical plug. Once the treatment of apical plug was finished either with MTA or biodentine, the patients were instructed to go to their control appointments at the Clinic of Specialization in Endodontics in a month, 3 months, 6 months, 12 months and 18 months to verify clinically and radiographically the evolution of treatment. As measurement methods and standardization in each event was held clinical and radiographic criteria of Strindberg, which is based on radiographic and clinical findings, defined three categories for endodontic treatment outcomes: success, failure and doubtful. As Orstavick radiographic criteria, which should count from 1 to 5 according to the number 1 is the most healthy and the number 5 is the most severe.

RESULTS

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<th>20 apical plugs</th>
<th>11 with biodentine and 9 with MTA (Figure 1).</th>
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<td>of which 11 were women and 9 were men (Figure 2)</td>
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<td>Table number 1 shows 9 dental organs to which were placed apical plug with MTA by clinical and radiographic analysis parameter entered in the success according Strindberg. Table number 2 shows that 11 to which dental organs were placed apical cap with biodentine by clinical and radiographic analysis parameter entered in the success according Strindberg. Table number 3 shows apical caps made with MTA according to the criteria of Orstavik, in which we see that four dental organs came within criterion 2 Orstavik to 5 dental organs came within the criterion 3 Orstavik presents. Table number 4 shows apical caps made with biodentine according to the criteria of Orstavik, in which we can observe that seven dental organs came within criteria 2 Orstavik and 4 dental organs came within the criteria 3 Orstavik presents.</td>
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<td>In most apexification protocols involving human immature permanent teeth, the placement of an apical plug is crucial for sealing and preventing bacterial leakage. Because MTA had been introduced by Torabinejad and co-workers for use in pulp capping, pulpotomy cases, and sealing accidental perforations of the root canal, it became the material of choice for apexification therapy because of excellent biocompatibility and sealing ability. MTA is a bioactive cement with the capacity to induce the formation of new cementum and periodontal ligament, which makes this material biologically acceptable for closing a root canal with an open apex. Biodentine is a new bioactive dentin substitute cement has a shorter setting time of 12 minutes, as compared with that of MTA, which is 2 hours 45 minutes... Lee et al (7) suggest the use of Biodentine as well as MTA and Bioaggregate as root-end filling materials because in contact with mesenchymal stem cells they induce osteoblast differentiation</td>
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CONCLUSION

There is no significant difference between the two materials as they are biocompatible with the organism, and both induce a calcified open apex barrier, however biodentine has a setting time of 12 minutes and MTA has a setting time of 2 hours 45 minutes, therefore biodentine allows to filled the root canal during the same date. All patients were asymptomatic and a significant reduction was observed in the radiolucent area in the radiographic examination.

REFERENCES


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