

**Comparative Clinical and Radiographical
Study Between Biodentine and Amalgam as
Root End Filling Materials in Retrograde
Apicectomy**

A thesis

Submitted to the Council of College of
Dentistry/University of Baghdad in Partial Fulfillment
of the Requirement for the Degree of Master of Science
in Oral and Maxillofacial Surgery

By

Alaa Jasim Mohamed Ali

B.D.S.(Baghdad)

Supervised by

Assist Prof. Dr. Adil K.J. Al-Khayat

FDSRCS-London

M. Med. Sci.-Sheffield University

2014 May

1435 Rajab

Abstract

Background: Periradicular surgery is one of the most commonly performed operations in oral surgery unit. The goals of periradicular surgery are to remove the pathological tissues , to achieve a hermetic apical seal and to provide an optimum environment for healing through the regeneration of periradicular tissues.

Aims of the study: This prospective clinical study was performed to compare clinically and radiographically for six months period between the commonly used zinc- free amalgam and a recently introduced- dentine substitute calcium silicate based materials-Biodentine as root end filling materials in retrograde apicectomy and to assess the effect of different variables which are the age, gender, etiological factors of the lesion, presence of preoperative labial sinus, presence of cortical bone perforation and radiographic bone defect diameter on healing result.

Patients, materials and Methods: In this study retrograde apicectomy treatment was carried out for forty five patients(45) with fifty four(54) periradicular lesions randomly allocated to receive the retrograde filling material into group (A) which was treated by Amalgam and group (B) which was treated by Biodentine.

Results: After six months follow up period, combined clinical and radiographical examinations were used to evaluate the healing result, a significant difference was observed between the two groups, where the Biodentine group showed only one failed case(patient), the Amalgam group showed seven failed cases(patients).

In this study age, gender, etiology of the lesion, presence of preoperative labial sinus and cortical bone perforation have no significant effect on healing

results. Periapical radiographic radiolucency diameter measured more than five millimeters where the root tips were treated by Biodentine showed better healing results than that of Amalgam.

Conclusion: Biodentine is a compatible , bioactive material has good handling properties with short setting time, however its radioopacity is similar to dentine, we advise the use of Biodentine as root end filling material.