

**Evaluation of Success Rate in Periapical
Surgery using Surgical Operating
Microscope
(A Comparative Study)**

A Thesis

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By

Mohanad Abdulrahman Mustafa
B.D.S. (Baghdad)

Supervised by

Assist. Prof. Dr. Sahar Shakir Al-Adili
B.D.S., M.SC.

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1429 Jumada I

Abstract

This study was designed to compare between Traditional method of periapical surgery (group A controlled group) with periapical surgery done under Surgical Operating Microscope (group B study group) and this device is recently used in Endodontic Surgery.

Follow up study of 24 patients thirteen were females and eleven were males age ranged(14-49) years old, with 38 teeth (have periapical lesion) 19 teeth in each group and from the 19 teeth there were 10 teeth upper anterior and 9 teeth upper premolars.

All patients were followed up after three months, then after six months and all were subjected to clinical and radiographical examinations, to evaluate the healing process of both groups and to compare the effect of various factors on the success rate of both groups.

Other important part in this study that using of adrenaline 0.25mg/ml in a cotton pellets as hemostatic in bone crypt to have dry field during operation in both groups and check its effect on blood pressure and pulse rate by measuring the blood pressure and pulse rate during operation before using of adrenaline and after using of it about two minutes and after four minutes.

Clinically the study shows three failure cases out of 38 cases its percentage is(7.9%) show signs and symptoms during the whole study, one case (2.6%) was objectively failure which shows sinus formation that was observed in Traditional group and 2 cases (5.3%) were subjectively failure which shows symptoms(pain during percussion) one case in group A and one case in group B, so clinically we have 2 failure cases in group A (Traditional group) and 1 case failure in group B (Surgical Operating Microscope group).

Radiographically, the study reported remarkable bone formation in 31 cases (81.6%) 17 cases in Surgical Operating Microscope group and 14 cases in Traditional group after six months. While 4 cases (10.5%) showed delayed bone formation 1 case in Surgical Operating Microscope group and 3 cases in Traditional group, and 3 cases (7.89%) which show enlargement in the size of radiolucency, one case in Surgical Operating Microscope group and two cases in Traditional group.

The comparison of healing results in anterior teeth between Surgical Operating Microscope and Traditional method shows non significant difference but in posterior teeth the healing results shows significant difference.

According to follow up during the six months the Surgical Operating Microscope group showed higher successful rate than Traditional group and it is statistically significant difference, percentage failure in group A (10.5%) but in group B (5.3%).

The study showed that there was no effect of gender on healing result in both groups.

The study showed that the best results were in patients that the cause of their periapical lesion is due to caries to their teeth.

The study recorded that the success rate was higher in teeth who did not have preoperatively labial sinus formation and have intact cortical bone.

Regarding the measuring of the surface area of the bony defect and the mesiodistal dimension and superior inferior dimension by the radiograph. Postoperatively, after 3 months follow up and after 6 months showed decrease cavity surface area similar in both groups.

The study also showed that the using of adrenaline in bone crypt have non significant effect on pulse rate and blood pressure.