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Original Research

Comparison of two different treatment modalities for Endo- Perio lesions - A clinical study

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***ABSTRACT*:**
Background: Pulpal infection can drain through the periodontal ligament space and give an appearance of periodontal destruction. The present study was conducted to compare two treatment modalities for Endo- Perio lesions. **Materials & Methods:** This study was conducted in the department of Endodontics. It comprised of 52 cases of Endo- Perio lesions of both genders. Patients were divided into 2 groups of 26 each. In group I, patients underwent root canal treatment only, while group II patients underwent root canal treatment along with periodontal flap surgery. Parameters such as gingival index, plaque index, gingival bleeding index, probing depth and radiographic bone level were measured from 0-1 month and 1-4 months. **Results:** The mean gingival index in group was 0.41 mm and in group II was 0.49 mm, plaque index in group I was 0.45 mm and in group II was 0.38 mm, gingival bleeding index in group I was 19.2 m and in group II was 27.4 mm, probing depth was 2.3 mm in group I and 1.4 mm in group II, radiographic bone level was 2.2 mm in group I and 1.5 mm in group II. The difference was significant (P< 0.05). The mean gingival index from 1-4 months in group was 0.08 mm and in group II was 0.15 mm, plaque index in group I was 0.16 mm and in group II was 0.07 mm, gingival bleeding index in group I was 13.4 m and in group II was 18.5 mm, probing depth was 1.8 mm in group I and 3.5 mm in group II, radiographic bone level was 1.7 mm in group I and 2.5 mm in group II. The difference was significant (P< 0.05). **Conclusion:** Both treatment approaches showed a significant improvement in the probing depth reduction and attachment level postoperatively.
Key words: Endo- Perio, gingival index, Probing depth

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INTRODUCTION

The dental pulp and periodontal tissues are closely related. The pulp originates from the dental papilla and the periodontal ligament from the dental follicle and is separated by Hertwig's epithelial root sheet. As the tooth matures and the root is formed, three main avenues for exchange of infectious elements and other irritants between the two compartments are created by dentinal tubules, lateral and accessory canals and the apical foramen.[1]

The relationship between the pulp and the periodontium has been extensively studied; however, queries regarding the diagnosis, prognosis and treatment are raised time and again. The pathways for the spread of bacteria between pulpal and periodontal tissues have been discussed with controversy.[2] Pulpal infection can drain through the

periodontal ligament space and give an appearance of periodontal destruction, termed retrograde periodontitis. Similarly, both pulpal and periodontal infections can coexist in the same tooth, termed combined lesions, where the treatment depends on the degree of involvement of the tissues. Both endodontic and periodontal diseases are caused by a mixed anaerobic infection.[3]

Healing of primary endodontic lesions usually take place after root canal therapy. Presence of microorganisms in the root canal influences the outcome of therapy with a proper focus on control of infection, a good prognosis is expected with the treatment.[4] Primary periodontal lesions can solely be treated by periodontal therapy. Prognosis of primary periodontal lesions depends on the severity of the periodontal disease, efficacy of periodontal therapy and response of the patient.[5] The present study was conducted to compare two treatment modalities for Endo- Perio lesions.

MATERIALS & METHODS

This study was conducted in the department of Endodontics. It comprised of 52 cases of Endo- Perio lesions of both genders. All patients were informed regarding the study and written consent was obtained. Ethical clearance was taken from institutional ethical committee.

Information such as name, age, gender etc. was noted. Patients were divided into 2 groups of 26 each. In group I, patients underwent root canal treatment only, while group II patients underwent root canal treatment along with periodontal flap surgery. Parameters such as gingival index, plaque index, gingival bleeding index, probing depth and radiographic bone level were measured from 0-1 month and 1-4 months. Results were tabulated and subjected to statistical analysis. P value less than 0.05 was considered significant.

RESULTS

Table I Distribution of patients

Groups	Group I	Group II
Procedure	RCT only	RCT & Periodontal flap surgery
Number	26	26

Table I shows that in group I, patients underwent root canal treatment only, while group II patients underwent root canal treatment along with periodontal flap surgery. Each group had 26 patients.

Table II Comparison of parameters from 0-1 months in both groups

Parameters (Mean)	Group I	Group II	P value
Gingival index	0.41	0.49	0.01
Plaque index	0.45	0.38	0.04
Gingival bleeding index	19.2	27.4	0.05
Probing depth	2.3	1.4	0.02
Radiographic bone level	2.2	1.5	0.05

Table II, graph I shows that mean gingival index in group was 0.41 mm and in group II was 0.49 mm, plaque index in group I was 0.45 mm and in group II was 0.38 mm, gingival bleeding index in group I was 19.2 m and in group II was 27.4 mm, probing depth was 2.3 mm in group I and 1.4 mm in group II, radiographic bone level was 2.2 mm in group I and 1.5 mm in group II. The difference was significant (P< 0.05).

Graph I Comparison of parameters from 0-1 months in both groups

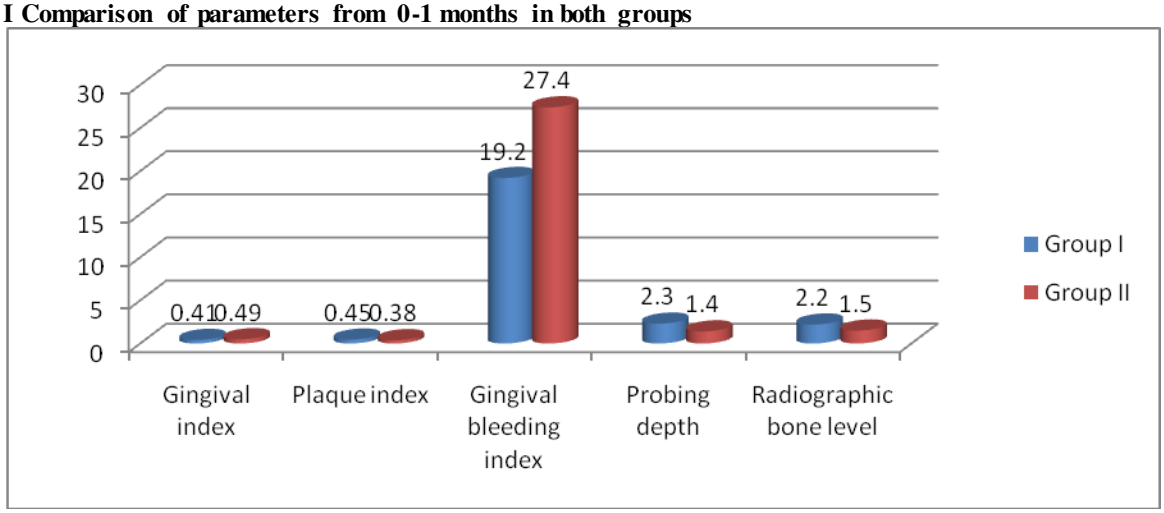
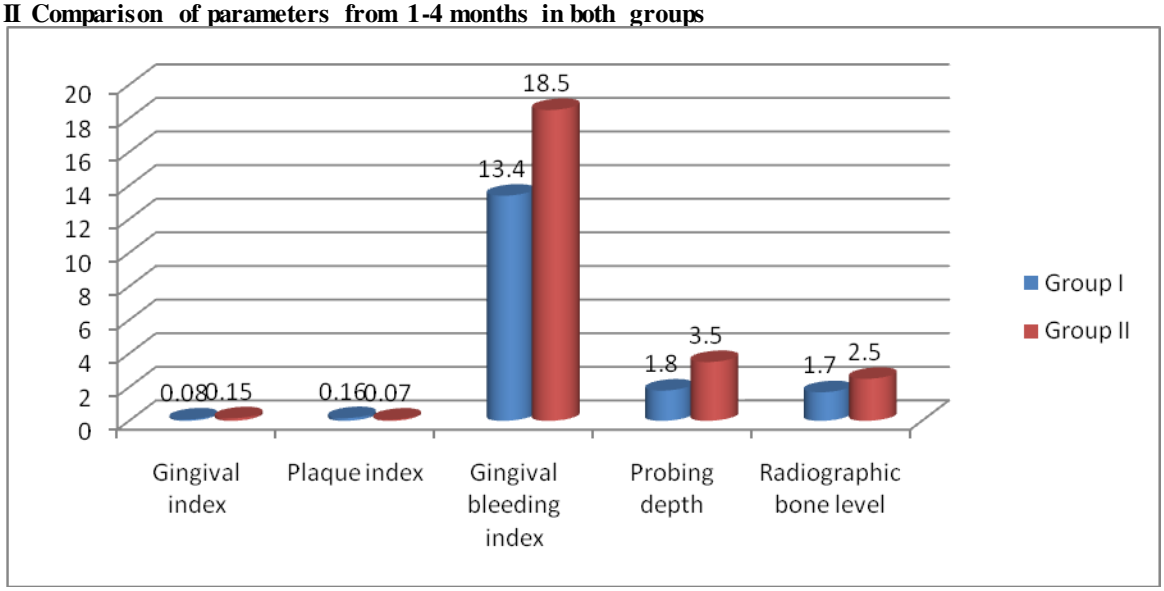


Table III Comparison of parameters from 1-4 months in both groups

Parameters (Mean)	Group I	Group II	P value
Gingival index	0.08	0.15	0.02
Plaque index	0.16	0.07	0.01
Gingival bleeding index	13.4	18.5	0.03
Probing depth	1.8	3.5	0.02
Radiographic bone level	1.7	2.5	0.01

Table III, graph II shows that mean gingival index from 1-4 months in group was 0.08 mm and in group II was 0.15 mm, plaque index in group I was 0.16 mm and in group II was 0.07 mm, gingival bleeding index in group I was 13.4 m and in group II was 18.5 mm, probing depth was 1.8 mm in group I and 3.5 mm in group II, radiographic bone level was 1.7 mm in group I and 2.5 mm in group II. The difference was significant (P< 0.05).

Graph II Comparison of parameters from 1-4 months in both groups



DISCUSSION

Exposed dentinal tubules in areas devoid of cementum may serve as communication pathways between the pulp and the periodontal ligament.[6] Exposure of dentinal tubules may occur due to developmental defects, disease processes, or periodontal or surgical procedures. Radicular dentin tubules extend from the pulp to the cemento-dentinal junction (CDJ). They run a relatively straight course. The diameter ranges from 1 mm in the periphery to 3 mm near the pulp.[7] The tubular lumen decreases with age or as a response to chronic low-grade stimuli causing apposition of highly mineralized peritubular dentin.[8] The density of dentin tubules varies from approximately 15 000 per square millimeter at the CDJ in the cervical portion of the root to 8000 near the apex, whereas at the pulpal ends the number increases to 57 000 per square millimeter.[9] When the cementum and enamel do not meet at the cemento-enamel junction (CEJ), these tubules remain exposed, thus creating pathways of communication between the pulp and the periodontal ligament.[10] The present study was conducted to compare two treatment modalities for end-Perio lesions.

In present study, in group I, patients underwent root canal treatment only, while group II patients underwent root canal treatment along with periodontal flap surgery. Mediratta et al[11] conducted a study, in which twenty cases aged between 18 and 55 years with good systemic health diagnosed as cases of primary endodontic lesion with secondary periodontal involvement were selected. In ten cases, only RCT was performed (control group), and in another ten, after 1 month of completion of RCT, periodontal flap surgery was performed (test group). The patients were evaluated for changes in the gingival index, plaque index, gingival bleeding index, probing depth (PD), and relative attachment level (RAL) at baseline, 1 month, and at 4 months postoperatively. Results showed statistically significant (P < 0.05) reduction from baseline to 1 and 4 months in the PD and gain in RAL both on intergroup and intra group comparison. Thus, from the results of the study, it could be concluded that both treatment approaches revealed a significant improvement in the PD reduction and attachment level gain 4 months postoperatively. However, test group showed a significant difference in the reduction of PD and gain in attachment level.

We found that mean gingival index in group was 0.41 mm and in group II was 0.49 mm, plaque index in group I was

0.45 mm and in group II was 0.38 mm, gingival bleeding index in group I was 19.2 m and in group II was 27.4 mm, probing depth was 2.3 mm in group I and 1.4 mm in group II, radiographic bone level was 2.2 mm in group I and 1.5 mm in group II. Similarly, from 1-4 months there was significant difference in GI, PI, GBI, PD and RBL in both groups.

Solomon et al[12] treated a case of true combined lesion involving the mandibular right second molar and concluded that resolution of the endodontic component of combined lesions allowed the tooth to be retained, albeit in a periodontally compromised state. With lesions of primary periodontal etiology and secondary pulpal necrosis, little or no improvement would be seen after endodontic treatment, leaving a very poor and often hopeless prognosis.

CONCLUSION

Both treatment approaches showed a significant improvement in the probing depth reduction and attachment level postoperatively.

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