Effects of Fixed Orthodontic Appliance on the Periodontal Health Status

(Clinical and Radiographic study)

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By
Wadiaa Gazi Ahmed
B. D. S.

Supervised by
Assist. Prof. Dr. Leka'a Mahmoud Ibrahim

Baghdad – Iraq.

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Abstract

The study was undertaken to elucidate the effect of fixed orthodontic appliances on the periodontal health status, clinically and radiographically.

The study population completed the study included 30 orthodontic patients (14 male and 16 female), ranging in age from 16 to 25 years. They were from attendants seeking treatment in the department of orthodontics, college of dentistry, Baghdad university.

Oral hygiene program consisting of scaling and polishing was completed before placement of orthodontic appliances, also oral hygiene instructions were given. Assessment was performed immediately before (0 day), 3 months and 6 months following placement of orthodontic appliances, in terms of :

1. Plaque index (Silness and Löe,1964).
2. Gingival index (Löe and Silness, 1963).
3. Probing pocket depth (PPD).
4. Clinical attachment level (Glavined and Löe,1967).
5. Radiographic examination of alveolar crest height (two posterior bite-wing radiographs on right and left sides).

Initially, oral examination at (0 day) revealed that plaque accumulation, gingival inflammation, probing pocket depth and attachment loss were very low. Also radiographic examination revealed no interproximal alveolar bone loss.

Three months following introduction of fixed orthodontic appliances, a statistically significant increase in all clinical periodontal parameters was observed. In addition this increase in

clinical parameters is associated with reduction in interproximal alveolar bone level (radiographically).

Orthodontic patients still showed marked significant increase in all clinical periodontal parameters at (6 months) visit and greater reduction in alveolar bone level statistically. Mean CEJ-AC scores for upper arches was significantly higher than that of lower arches.

No difference was found between male and female in orthodontically treated patients for both clinical periodontal parameters and alveolar bone height.

It is concluded that the introduction of fix orthodontic appliances in to the mouth will increase plaque accumulation and this will increase the gingival inflammation, probing pocket depth and loss of attachment with concomitant reduction in alveolar crest height.