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Clinical evaluation of immediate loading of titanium orthodontic implants

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OBJECTIVES

Skeletal anchorage using dental implants, miniplates, miniscrews and microscrews provides an absolute anchorage for tooth movement. Miniscrew and microscrew implants have many benefits such as ease of placement and removal and immediate orthodontic force application.

METHODS

Fifteen subjects in the permanent dentition with an overjet < 6 mm received treatment with the 0.018- inch pre-adjusted edgewise appliance system (Roth prescription) and extraction of all first premolars. Titanium orthodontic implants were placed in both the upper quadrants and were immediately loaded with elastic chain from the implant head to the sectional arch wire.

RESULTS

The overall success rate of immediate loaded titanium orthodontic micro implants (OMI) in the present study was 83.33%, with a mean chairside time of 15.33 minutes of placing two implants in each patient. Peri-implant inflammation was the only complication observed. Most failures were in the initial part of the study. There was no significant difference in the success rate of implants based on sex, side of placement (right or left) and type of malocclusion.

RECOMMENDATIONS

OMIs are a very useful adjunct to fixed appliance orthodontic therapy. Immediate loading protocol ensures immediate orthodontic anchorage for retraction of proclined maxillary incisors. They may be included in the armamentarium for orthodontic therapy in the Armed Forces. This would enable rationalization in treatment time and at the same provide optimal orthodontic treatment to the clientele in service hospitals.

A multi centric study, with a larger number of cases and to evaluate other issues that may have an influence on OMI success should also be considered like comparison of the density of the mandible and the maxilla of adolescents with those of adults.