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Immediate provisionalisation of single post-extractive implants versus implants placed in healed sites in the anterior maxilla: 1-year results from a multicentre controlled cohort study

Key words *delayed implants, immediate loading, post-extractive, single-tooth replacement*

Purpose: The purpose of the study was to compare the clinical and aesthetic outcome of single post-extractive implants versus implants placed in a preserved socket after 4 months of healing in the anterior maxilla. All of the implants were immediately non-occlusally loaded.

Materials and methods: A total of 50 patients were treated in the two groups of study. The Delayed Group had a maxillary tooth (premolar, canine, lateral or central incisor) removed, with immediate socket grafting, followed by implant placement and provisionalisation 4 months later. The Immediate Group had immediate implant placement and provisionalisation. Outcome measures were implant failures, biological and biomechanical complications, peri-implant radiographic bone level changes, and gingival aesthetics.

Results: At the 12-month follow-up, two implants failed in the Immediate Group (8%) versus one in the Delayed Group (4%), with a comparable rate of implant failure ($P = 0.55$). No complications occurred for either group. The 12-month peri-implant bone resorption was similar in both groups ($P = 0.23$): 0.71 mm (95% CI 0.45, 0.97) in the Immediate Group versus 0.60 mm (95% CI 0.38, 0.82) in the Delayed Group. The mean difference in bone resorption was 0.13 mm (95% CI -0.21, 0.47). An ideal gingival marginal level was reached most frequently in the Delayed Group (83.3% versus 52.1%, $P = 0.04$). Rates of full closure of the papilla were similar between the two groups (82.6% for the Immediate Group versus 62.5% for the Delayed Group, $P = 0.12$).

Conclusions: Given the limitation that this was not a randomised controlled trial, there were no differences in complications or crestal bone response at immediate post-extractive implants when compared to delayed implants. A delayed protocol might be considered in the aesthetic zone due to the gingival recession that occurs after post-extractive implant placement.

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