

Tommaso Grandi, Paolo Guazzi, Rawad Samarani, Giovanni Grandi

Immediate loading of four (all-on-4) post-extractive implants supporting mandibular cross-arch fixed prostheses: 18-month follow-up from a multicentre prospective cohort study

Key words *full-arch prosthesis, immediate loading, post-extractive implants, tilted implants*

Aim: To evaluate the outcome of immediately loaded mandibular cross-arch prostheses according to the 'all-on-4' concept supported by implants placed in fresh extraction sockets up to 18 months after loading.

Materials and methods: In total, 47 patients with a mean age of 62.3 years (range 52 to 78) were rehabilitated with an immediately loaded fixed cross-arch prosthesis supported by four post-extractive implants. A total of 188 implants were inserted. Patients received a provisional fixed dental prosthesis with a metal framework within 48 hours after surgery and a permanent one 6 months later. The patients were evaluated clinically and radiographically at implant placement and at 6-, 12- and 18-month follow-up examinations.

Results: At the 18-month follow-up, no implant failed and all restorations were stable. Peri-implant bone levels amounted to 0.31 ± 0.12 mm after 6 months, 0.58 ± 0.112 mm after 12 months and 0.7 ± 0.107 mm after 18 months. No significant differences in bone loss were found between axially placed and tilted implants at the 6-month (0.06 mm; $P = 0.115$), the 12-month (0.12 mm; $P = 0.062$) and the 18-month follow-up (0.08 mm; $P = 0.146$). Three patients had a fracture of the provisional restoration, but all of the definitive prostheses remained stable throughout the study period without any complications.

Conclusions: Within the limits of this study, it can be suggested that immediately loaded mandibular cross-arch fixed dental prostheses can be supported by four post-extractive implants, however larger and longer follow-ups are needed.