

Bone augmentation and implant prosthetic rehabilitation versus partial removable dentures

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BACKGROUND

The increasing growth of patient's interest for an aesthetical and functional rehabilitation implies the necessity of a complex treatment in order to obtain the expected result. Often, the presence of an insufficient bone support makes the rehabilitation difficult or even impossible. Many of these patients have been treated for many years with removable dentures. Nowadays, implant prosthetic rehabilitation gains popularity due to its advantages over partially removable prosthesis to due poor performance of the last. The new technologies and materials allows us to perform bone augmentation procedures with more predictable results and place standard implants in areas of insufficient bone.

PURPOSE

Evaluation of the methods of patients' rehabilitation that have insufficient bone support by comparative analysis of conventional and implant prosthetic methods, with preliminary bone augmentation.

MATERIALS AND METHODS

In the study were included 24 patients with alveolar bone defects of different etiology who needed prosthetic rehabilitation. Patients were divided in two groups: I group consisted of 9 patients (mean age 38 ± 2.77 years) who were rehabilitated with fixed implant supported metal-ceramic prostheses after bone augmentation (osseo distraction - 2 patients, iliac crest grafting - 5 patients (Figure 1, Figure 2), bone grafting from adjacent sites 2 patients). The second group consisted of 15 patients (mean age 54.8 ± 2.3 years) who were rehabilitated with removable dentures (Figure 3). In the second group, 10 patients were rehabilitated on both arches and 5 patients on one arch. Patients were given a questionnaire of satisfaction consisted of 20 questions.

RESULTS

In the first group, after augmentation procedures, it was possible to insert implants of standard size and manufacture fixed metal-ceramic protheses type FP1, FP2 and FP3 (according to Carl E. Misch classification). After 12 months there was 0.5 ± 0.08 mm bone resorption mesially and 0.41 ± 0.06 mm distally. There have not been noticed any signs of inflammation in peri implant soft tissues. Patients were satisfied with the esthetic and functional results of the prostheses. In the second group, in 30% of cases was noted the loss of prosthesis stability after 12 months. According to the questionnaire, 40% of patients were not satisfied with their prostheses, being prostheses' wearers for many years but denying implant rehabilitation, 30% of patients from second group solicited implant rehabilitation being unsatisfied with their prostheses especially because of chewing problems. Sixty percent of patients were not feeling comfortable when wearing the prostheses in a public place. Eighty percent of prostheses wearers from second group were satisfied with the esthetics. Twenty percent of patients from first group denied the rehabilitation with removable dentures because they used to wear removable prostheses and have not been satisfied by their masticatory performance and the need to use denture adhesives.

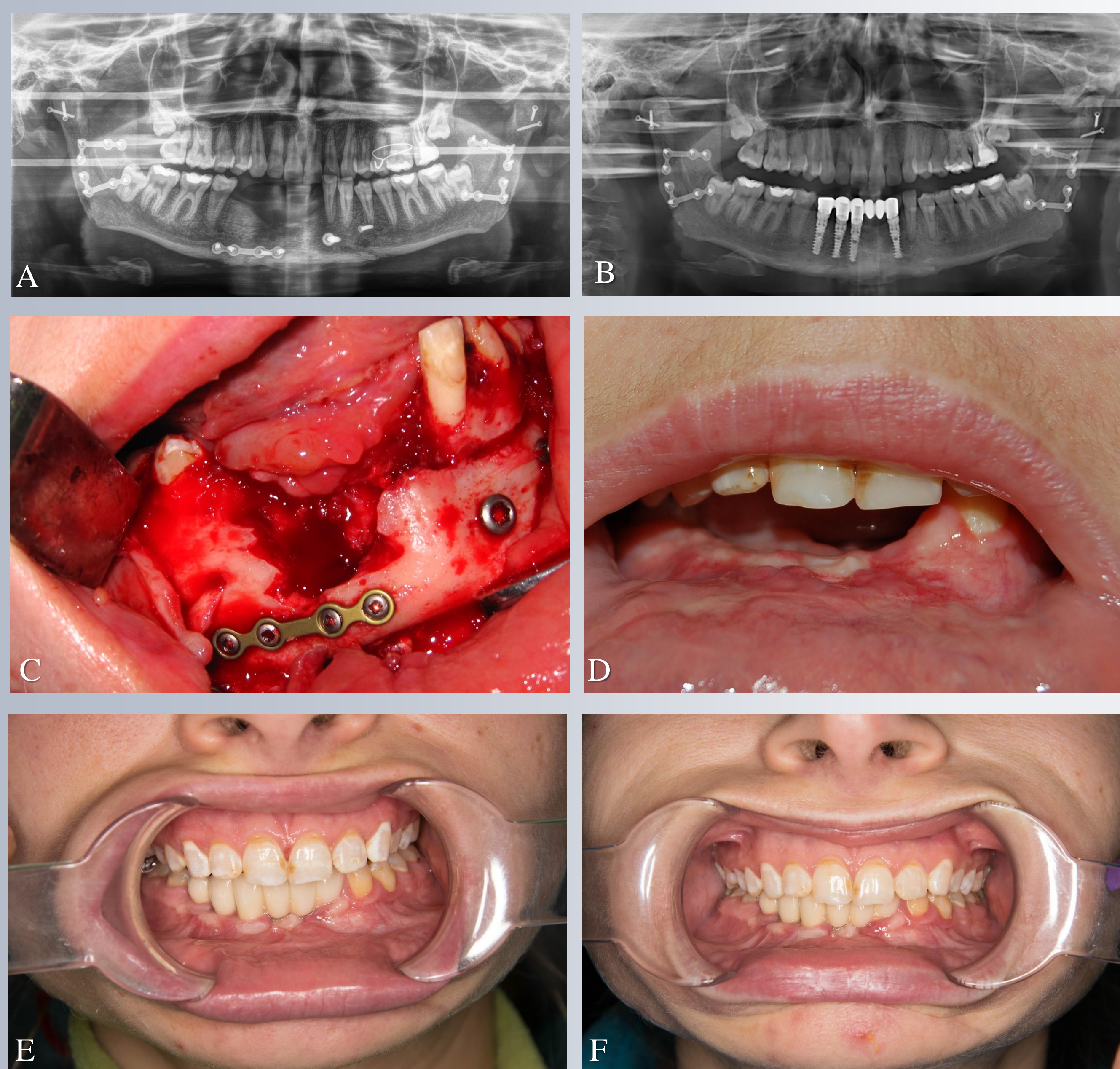


Fig.1. Bone defect in mandible after trauma: A) X-ray image after bilateral condylar and medial osteosynthesis, B) X-ray image after 20 months after implant insertion in a healed iliac crest graft, C) Intraoperative image of the bone defect, D) Intraoral view after osseointegration period of 4 months, E) Prosthesis image after fixation, F) Prosthesis view after 13 months of functional loading.

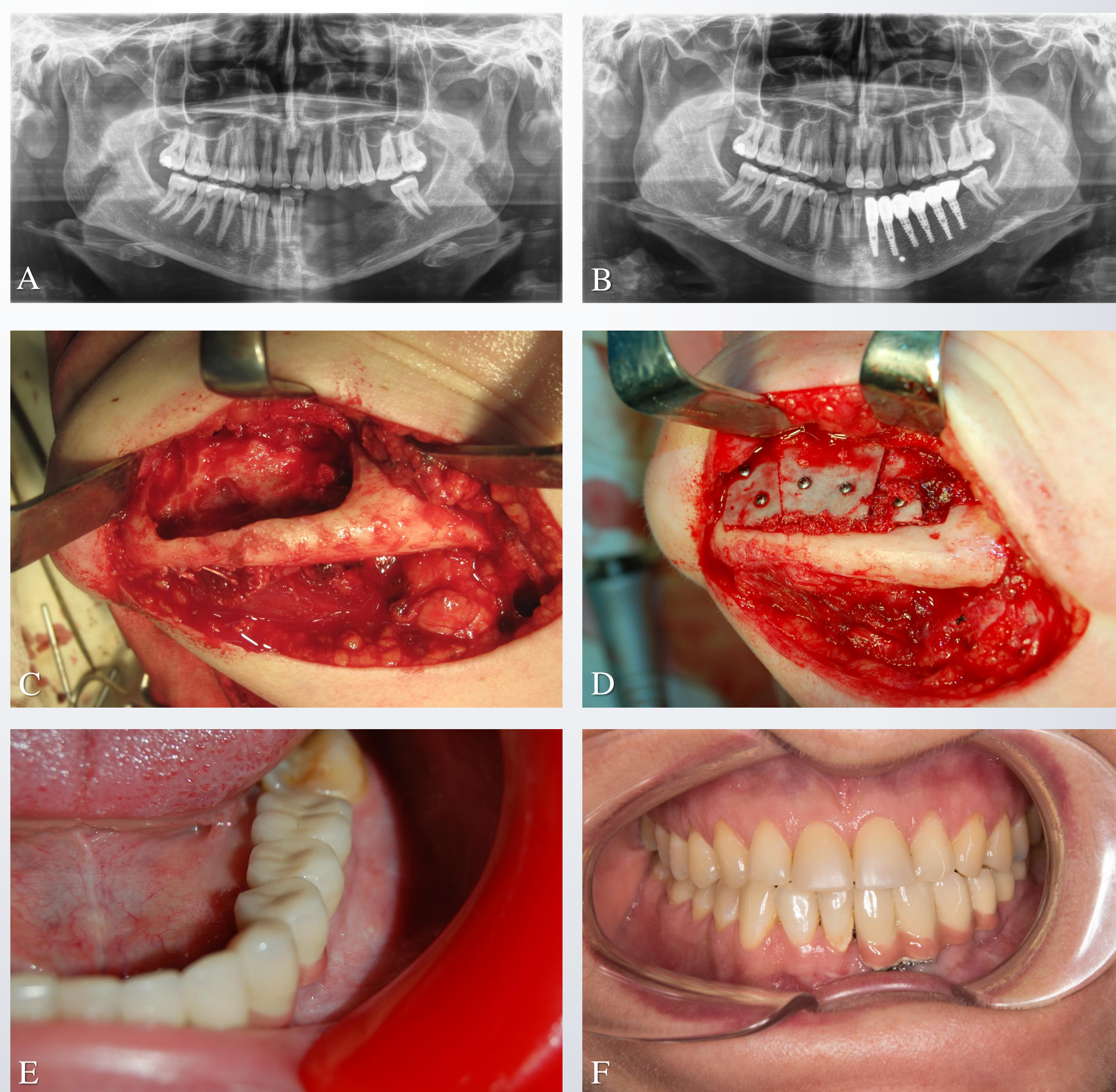


Fig.2. Bone defect in mandible after tumor ablation: A) X-ray before tumor ablation, B) X-ray image 15 months after implant loading, C) Intraoperative view of the bone defect, D) Intraoperative view of iliac crest grafts, E) Prosthesis image immediately after cementation, F) Prosthesis image 15 months after its cementation, a slightly resorption is seen in the first two implants.

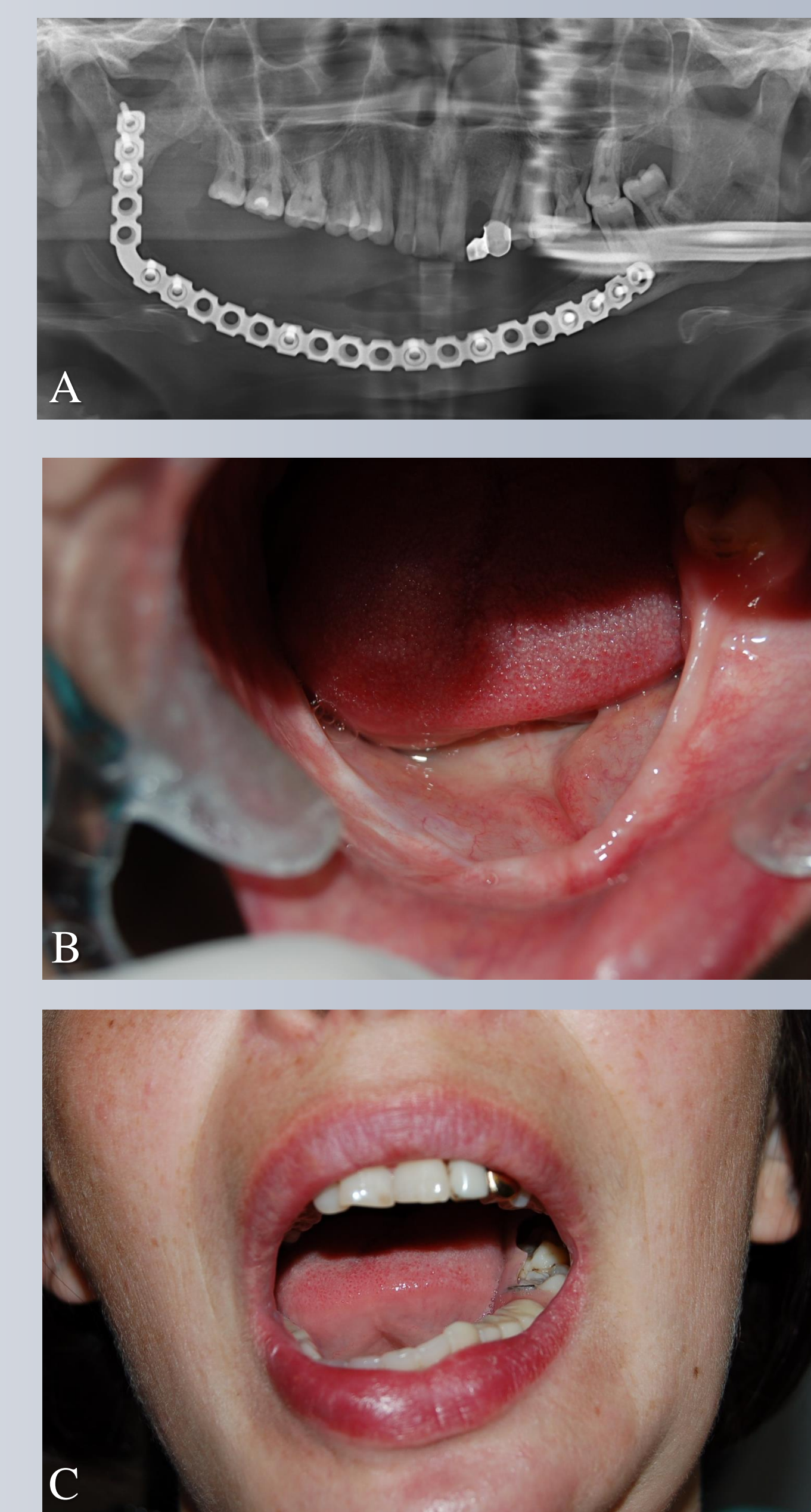


Fig. 3. Bone defect in mandible after tumor resection: A) X-ray 36 months postoperative, B) Intraoral image 36 months postoperative, C) Intraoral image with removable prosthesis 36 months postoperative.

CONCLUSIONS

Despite the long rehabilitation period, multiple surgical procedures and higher price needed for implant prosthetic rehabilitation with preliminary bone augmentation, this method is often required by patients due to its advantages over the rehabilitation with removable prosthesis. Patients get used very quickly to implant supported restorations type I, II and III according to Carl E. Misch due to their natural aspect. Bone augmentation and further implant-prosthetic rehabilitation provides good esthetics and function with a predictable long-term result.

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