

Buccal Plate Preservation at Anterior Maxilla Using Immediate Implant Placement With a 2.0 mm Gap Technique Based on Spontaneous Bone Healing: Case Report*

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SUMMARY

Gap (*synonyms*: jumping distance, bone gap) between the implant surface and surrounding bone upon the immediate implant placement can be used for buccal plate preservation. Our case report revised a ITI and Neves *et al* (2013) [6, 7] recommendations. Finally, case report in a 32-year-old-patient confirms a good spontaneous bone healing and successful osseointegration in a situation of 2 mm gap between immediate implant allowing preserving a buccal plate.

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Introduction

A space that can be seen between the implant surface and surrounding bone upon the immediate implant placement is called a gap (*synonyms*: jumping distance, bone gap) [1, 2]. A gap (Mehta and Shah, 2015) can occur on any aspect of an immediately placed dental implant: buccal, lingual or proximally [1]. To avoid soft tissues recession in aesthetic zone of anterior maxilla is extremely important to preserve buccal plate in the rehabilitation of patients [3-6]. Because of thin buccal plate in that zone we should pay attention to the plate preservation, as buccal plate resorption is a main reason of soft tissue recession [1, 4]. The purpose of that report is to highlight the technique of immediate implant placement achieving 2.0 mm distance between implant and buccal plate surfaces that allow to obtain a spontaneous bone healing and to preserve buccal plate what reduces a risk of soft tissues recession [7-12].

Case Presentation

A 32-year-old lady referred to the clinic with complaints

for symptoms of chronic periapical lesion of a tooth #12. A surgery was performed under local anesthesia (1.7 ml Ultracain D-S forte, Aventis Pharma Deutschland GmbH, Frankfurt, Germany). After atraumatic removal of a tooth #12 a 10 mm implant (U-Impl, Biel, Switzerland) with 3.5 mm platform was placed more palatally and distally related to the extraction socket (Fig 1). It was chosen a 10 mm implant length with a purpose of possible changing for a longer implant in future in case of re-implantation. The 5.5 mm × 2.0 mm healing abutment (W2, U-Impl, Biel, Switzerland) was used. Sutures: 4-0 coated VICRYL (Ethicon, USA). That type of technique (according to recommendation of Neves *et al*, 2013 [6]) allowed achieving a spontaneous bone healing and osseointegration of implant with a 2.0 mm gap (Fig 2) filled with blood clot. No graft material was used according to the size of horizontal defect recommended by Proceedings of the Third ITI Consensus Conference [7]. A 1.2 year follow-up shows a good aesthetics and no significant recession of soft tissues around the implant.

Discussion

According to Neves *et al* (2013) and the Proceedings of the Third ITI Consensus Conference about implants in postextraction sites present some of the consensus

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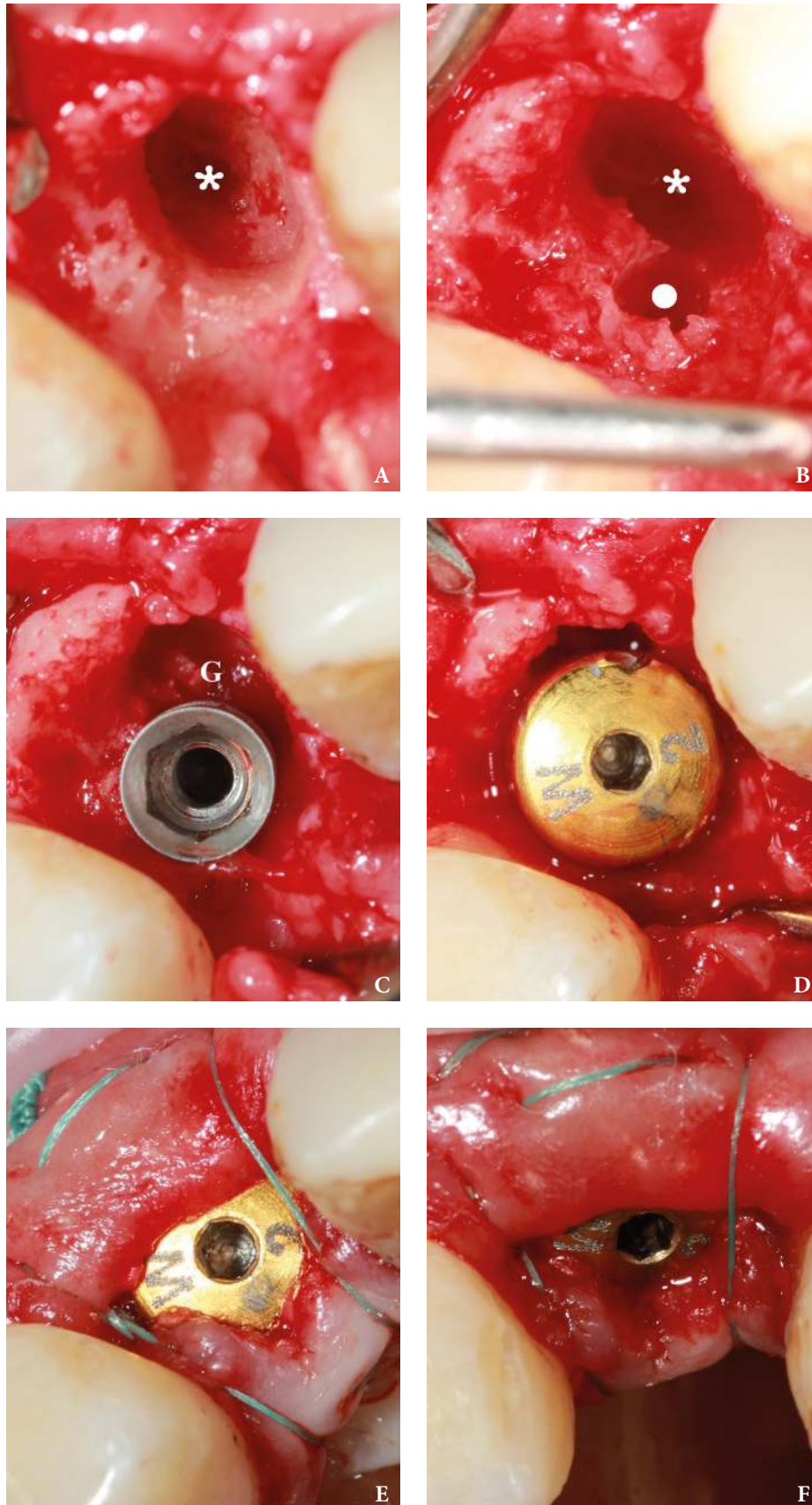


FIGURE 1. Buccal plate preservation at anterior maxilla using immediate implant placement with a 2.0 mm gap technique. **A** – tooth socket (*asterisk*) after atraumatic extraction of tooth #12. **B** – view after initial drilling (place of drilling is indicated by *circle*). **C** – view after 10 mm implant with 3.5 mm platform placement. 2 mm gap is marked by letter *G*. **D** – view after the healing abutment was placed. **E** – axial view after suturing. **F** – oblique view after suturing.

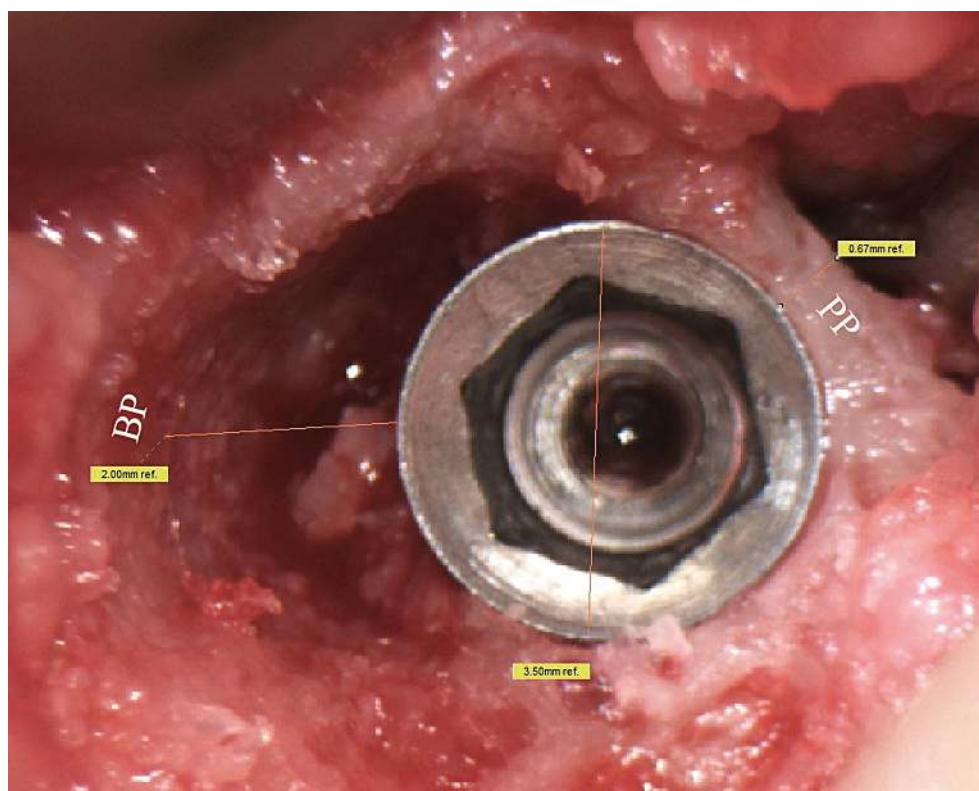


FIGURE 2. Zoomed intraoral view after 10.0 mm implant with a 3.5 mm platform was placed. A 2.0 mm gap (synonym: jumping distance) is indicated as *2.00 mm ref.* The buccal plate is indicated by letters *BP*, the palatal plate – by letters *PP*.

statements regarding buccal plate preservation and indications for gap filling [6, 7]:

1. External resorption (modeling) of the socket walls occurs during bone healing.
2. There is spontaneous bone healing and osseointegration of implants with a horizontal defect dimension of 2 mm or less.
3. Bone regeneration procedures are recommended when there is a horizontal defect dimension larger than 2 mm and/or nonintact socket walls.

Chen and Buser (2009) accentuated on a recommendation: when the gap is greater than 2 mm, bone gap filling is indicated [8].

Result

Thus, our case represents an extreme limit, a horizontal defect dimension of 2 mm, can be used as a recommended treatment with a purpose for buccal plate preservation upon immediate implantation supporting long-term aesthetics in the anterior maxilla.

Conclusions

That report, a case of 2.0 mm non grafted gap between immediate implant and buccal plate, confirms: 1) good spontaneous bone healing, 2) successful osseointegration, 3) buccal plate preservation.

Conflict of Interest

None.

Role of the Co-authors

Kateryna Yu. Nagorniak (concept and design of the paper, material collection, and writing)

Ivan V. Nagorniak (concept and design of the paper, material collection, and editing)

Ethical Approval

None.

Term of Consent

Written patient consent was obtained to publish the clinical photographs.

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