

Immediate Implant Placement and Provisionalization - A Prosthetic Technique for the Aesthetic Zone

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Introduction

The demand of patients to the modern implant therapy is increasingly higher. Here, the treatment time and the possible surgical and aesthetic risk plays an important role. Today, immediate placement of dental implants is an established surgical procedure with a good prognosis of success but hard to calculating risks related to possible aesthetic changes [1]. The intention of placing immediate implants ist to preserve the hard- and soft tissue contour and to decrease treatment time [2]. Especially an appropriate soft tissue is required for an good aesthetic outcome and the maintenance of periimplant health after rehabilitation [3]. Among other things, the most important factors for maintaining the papilla dimensions are the emergence profile and the contour of the proximal space [4]. We present a surgical and prosthetic treatment protocol for immediate implant placement and immediate provisionalization in the anterior region.

Materials and Methods

A 33 year old female was referred for implant evaluation for a failing left upper medial incisor (Fig. 1). Tooth extraction was performed atraumatically using sulcular incisions and periotomes in order to preserve the surrounding hard and soft tissue, in particular with regard to preserve the approximate papilla structure. An Camlog® - implant (5,0 x 13 mm) (Camlog, Wimsheim, Germany) was placed primary stable in a slightly palatal position, which is necessary for the implementation of an adequate emergence profile [5] (Figs. 2-3). Intraoperative indexing was performed using an impression post and a bite registration material (Futar® D, Kettenbach, Eschenburg) to register the implant position (Figs. 4-5). The remaining gap between implant and buccal was filled with a slowly resorbing xenograft (Bio-Oss® Geistlich Biomaterials, Wolhusen, Switzerland). The bone substitute was added not only into the gap, but also overbuilding buccally along the soft tissue contours in intention to compensate soft tissue remodeling [6]. Using the index, a provisional crown was created on a plaster model which was produced by preoperative taken alginate-impressions. Considering the palatal position of the implant the emergence-profile was determined by only erasing the contours of the existent tooth.(Figs. 6-8). Afterwards the provisional crown was manufactured and finally inserted (Figs. 9-10). The crown was designed with an emergence profile in a concave shape and without any occlusal contacts in static and dynamic occlusion. The patient was instructed only to eat soft food for 6 weeks.



Fig. 1: Initial Situation



Fig. 2: Immediate implant placement

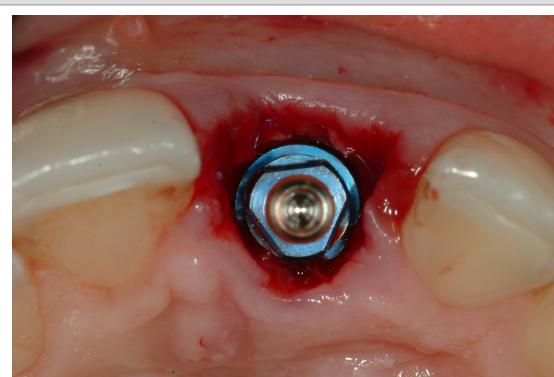


Fig. 3: placed implant in palatal position



Fig. 4: Intraoperative Indexing



Fig. 5: Index

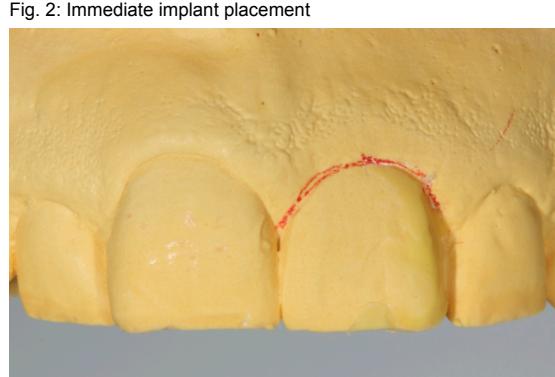


Fig. 6: preoperative plaster model

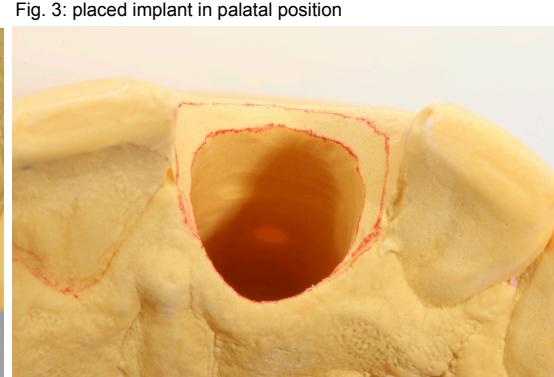


Fig. 7: Emergence profile on plaster model



Fig. 8: Index transfer on plaster model

Results

After a healing period of 9 weeks Osseointegration and periimplant health were evaluated using radiographs, clinical examination and stability tests (Periotest; Medizintechnik Gulden, Modautal, Germany). The peri-implant soft tissue was stable and showed no signs of recession. Periotest was -6. No further soft tissue corrections or changes of the emergence profile were needed. Impressions were taken and the patient's medial incisor was prosthetically rehabilitated with the final restauration. The implant and the peri-implant tissue was clinically stable at the time of examination after restoration (Figs. 11-12).



Fig. 9: Emergence profile of the provisional crown



Fig. 10: Provisional crown



Fig. 11: Emergence profile



Fig. 12: Final Restoration

Disclosure

Performing the presented protocol predictable and long-lasting esthetic results can be achieved. Using a provisional crown in immediately placed implants which exactly possesses the contour of the extracted tooth can aid in maintaining the peri-implant soft tissue structures. Treatment time and costs can be reduced.

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