

Immediate Implantation and Alveolar Reconstruction of Compromised Socket

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Citation: Helme Altaee et al. (2016), Immediate Implantation and Alveolar Reconstruction of Compromised Socket (IIAR). Int J Dent & Oral Heal. 2:4, 42-51. DOI: [10.25141/2471-657X-2016-4.0088](https://doi.org/10.25141/2471-657X-2016-4.0088)

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Received: October 1, 2016; **Accepted:** October 21, 2016; **Published:** October 31, 2016

Introduction:

An interesting case of tooth extraction with reconstruction of alveolar bone and immediate implant placement in one visit.

A 52 years old female with tooth # 14 indicated for extraction. Radiographical examination showed a tooth with a root canal filing and a periapical radiolucency of the tooth (Fig. 1). Clinical examination showed a mobile crown and a labial plate fenestration with cortical bone loss (Fig. 2).

Procedures:

After a good examination and evaluation of the case, we decided to, first remove the crown of the tooth and then to remove the root with atraumatic extraction by the use of chisel and root forceps (Fig. 3).

Before the extraction, an impression of the upper and lower teeth were done and we sent it to the lab for preparation of a Maryland

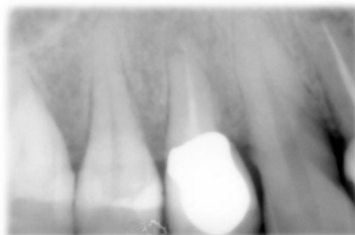


Fig.1



Fig. 2

bridge for replacement of the tooth # 14 (with 2 wings on #13 and # 15) immediately after the extraction. Later on; extraction of the tooth, a good enucleation of the soft tissue in the periapical area of the socket, and checking of the labial plate were done. There was labial bone loss at the middle third of the root (Fig. 4).

The post extraction pictures showed that there was no labial bone

and we needed to reconstruct this bone after placement of the implant, in order to give better stability and osteo-integration for our future implant, as well as for esthetic reasons.

We used a special device to determine the amount of bone present there and the diameter of the socket (Fig. 5, 6 and 7). These measures helped us to decide which size of implant we should use



Fig. 3



Fig.4



Fig. 5



Fig. 6



Fig. 7

and the areas of bone loss.

The Biotec implant 4.2mm x11.5mm was our choice.

We started to do the pilot drill inside the socket, initially vertical

and then with an angulation of 15 degrees palatally, in order to use the palatal bone and get primary stability because there was a deficient labial plate (Fig. 8, 9, 10 and 11).



Fig. 8

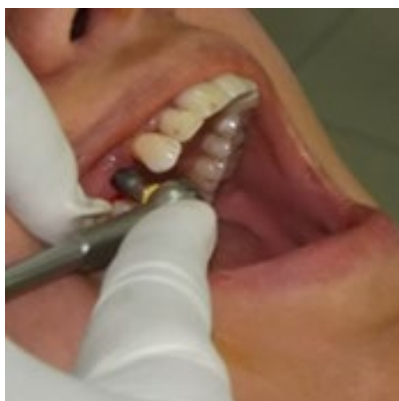


Fig. 9

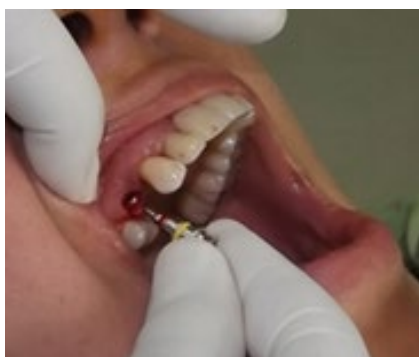


Fig. 10



Fig. 11

The placement of the implant went perfect and we got primary stability, however, there was a space between the implant and the labial soft tissue (Fig. 12 and 13). So, we decided to do bone

grafting and augmentation into the area.

The OPG x-ray showed (by chance) that there was an impacted



Fig. 12



Fig. 13

#18, which needed to be extracted (Fig.14 and 15). After anesthesia and removal of the impacted tooth, we used the labial bone that covered it, as a graft for the missing alveolar plate in our socket (Fig. 16, 17 and 18). The autogenous bone was shaped according to the missing alveolar plates and was placed buccally

to the implant (between the implant and the periosteum), which represents the future alveolar plate (Fig. 19). We also got some chips of spongy bone from the extraction area along with bovine bone which, mixed together and placed in the empty space



Fig 14

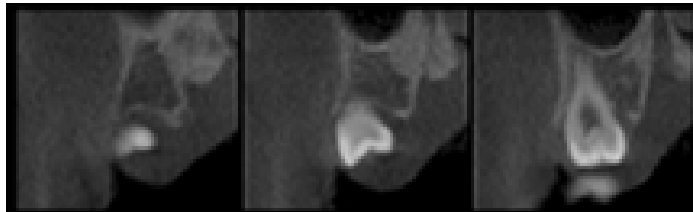


Fig 15

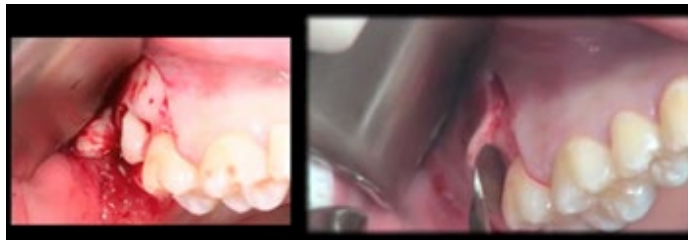


Fig 16

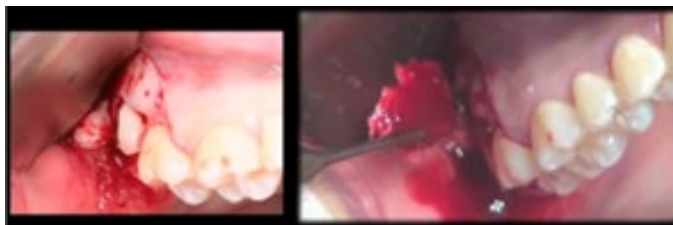


Fig 17

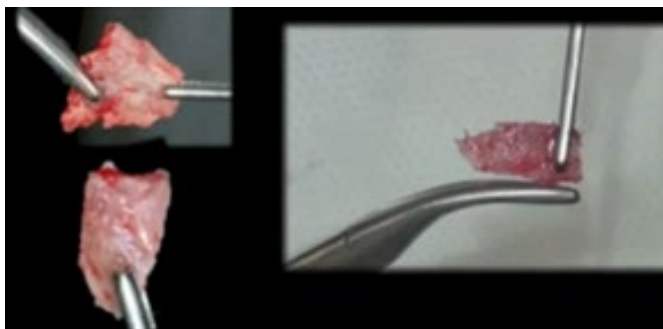


Fig 18



Fig 19



Fig 20

(Fig. 20).

Finally, we covered that bone by Jason pericardium membrane, we sutured the area with 3/0 black silk suture and we placed the Maryland bridge immediately after the intervention (Fig. 21, 22,

23, 24 and 25)

One week later, the sutures removed and the area irrigated and cleaned (Fig. 26).

The Maryland bridge was placed back and left there for exactly 12

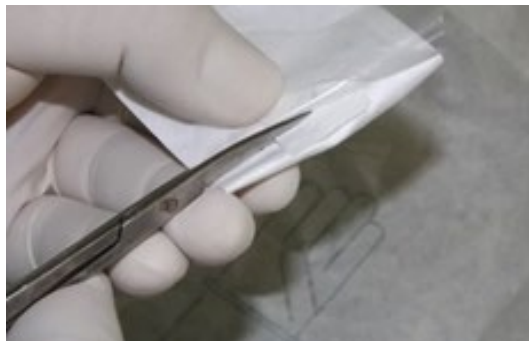


Fig 21



Fig. 22



Fig. 23



Fig. 24



Fig. 25

weeks (3 months). And after 3 months we continued the prosthetic protocol for the placement of the final prosthesis (Fig. 27, 28, 29,



Fig. 26

30, 31, 32, 33, 34 and 35).



Fig. 27



Fig. 28

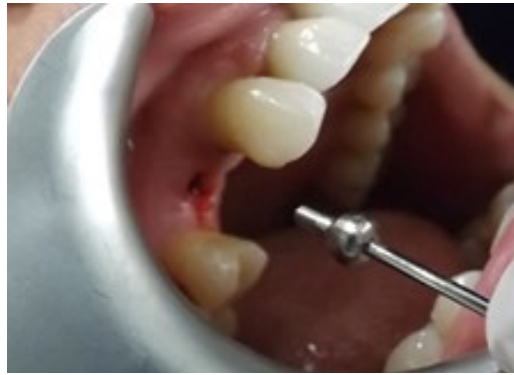


Fig. 29



Fig. 30



Fig. 31



Fig. 32



Fig. 33



Fig. 34

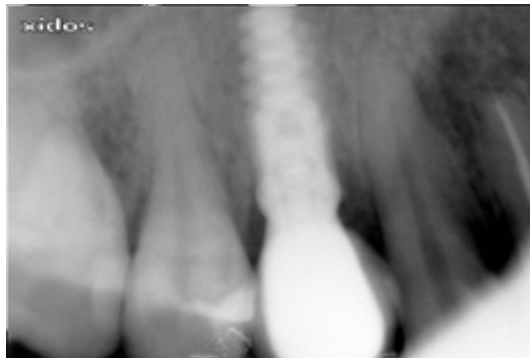


Fig. 35 (3 years later)