

CASE REPORT

NOVEL WAY TO REHABILITATION OF POOR BONE OF MAXILLARY ARCH – A CASE REPORT

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INTRODUCTION

When there is sufficient bone present in the maxilla, implant rehabilitation shows a higher success rate of 84-92%. However, when the situation comes to an atrophied maxilla, which is not an uncommon occurrence, the placement of conventional implants becomes complicated. Factors such as the presence of the nasopalatal duct, nasal fossa, poor bone quality, the centripetal pattern of bone resorption, etc complicate the implant placement. In many cases, patients with severely atrophied maxillary anterior receive paradoxically little or no treatment. (Ali., 2014)

Basal implants also called bicortical implantology is an improvised implantology system that uses the basal bone of the jaw for retention of the implants that are designed in such a manner to fit in the areas of basal cortical bone. Basal bone forms the stress-bearing area of the skeleton and is very strong thus providing excellent cortical bone quality for the retention of highly advanced implants, besides basal bone is present throughout life. Another major advantage is that when these basal implants are placed in the bone, they are ready to be loaded immediately unlike conventional dental implants. Orthopedic implant (Hip/ Knee replacement) has already proven the science behind them. Once the placement of the artificial limb is done, the patient is advised to use it immediately. (Yadav et al., 2015)

CASE REPORT

A 19-year-old female patient reported to the dental clinic with a chief complaint of missing upper front teeth because of an accident. Clinical examination showed a maxillary arch with missing teeth 15, 14,13,12,11,21,22,23. Radiographic investigation (OPG) revealed a bone loss in the maxillary arch. Detailed examination showed less than 3mm of bone in anterior sections with respect to missing teeth. The patient was otherwise in good health with no presence of mucosal disease.



SURGICAL TREATMENT

After explaining the entire procedure to the patient, written consent was obtained before starting the surgery. We used the basal cortical bone to place six basal implants (simpladent swiss made basal implant sizes 3.0x14-2,3.0x17-3 and 3.0x21-1) in different directions to obtain maximum retention and anterior support for the bridge. Implants were interconnected using Intraoral welder (Join Implant, swiss inc.) for splinting the implants. Impressions were made immediately after the placement to achieve balanced occlusion. Primary stability was achieved satisfactorily with all six implants and OPG was taken immediately after the placement and showed good parallelism also. After the procedure, the lab was instructed to fabricate a PFM prosthesis. The final prosthesis was cemented after 2 weeks after the surgery. Post-surgery gingiva shows satisfactory healing.

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POST OPERATIVE CARE

The post-operative instructions were given in detail, along with an antibiotic regime consisting of augmentin 625mg BD and analgesic BD for 5 days. She was asked to refrain from brushing the site for 4 days post-operatively and was called to the clinic for follow-ups on the 3rd, 7th, and 10th day. The patient was evaluated timely and again for any signs of infection, ulceration, or necrosis. Prosthesis delivered after trials post 2 weeks

DISCUSSION

Although the immediate loading concept has gained more predictable results than before, the possibility of crystal bone loss remains at a higher level. However, when it comes to the placement of basal implant it offers excellent primary stability with no requirement of verticalization, thus making it a choice of replacement in atrophied jaws for immediate placement and loading. In the maxillary anterior region, 6 basal implants were placed, the procedure was completed in a single sitting and was loaded as well far more quickly when compared

to the conventional dental implants. The basal implants present with apical compression thread and are single-piece implants. The presence of such a unique design like a compression screw facilitates prosthetic immediate loading, as long as the implant placement was done properly. The placement of basal implants requires a lesser time duration. (Thukral et al., 2016) Additionally, it provides excellent strength since there are no separate components like abutment and root portion. (Narang et al., 2014). In the current case, six basal implants were placed and immediate loading was done exhibiting promising results at a follow-up of 4 months. Moreover the use of intraoral welder for splinting the implants helped in immediate loading and increasing the stability of implant and prosthesis in a long run. Prosthetic rehabilitation with temporaries usually indicated post 3 days but with use of spot welder the splinting effect is achieved earlier therefore the process of lab fabrication is more smooth as it gives ample amount for trials and final delivery of prosthesis specially wrt anterior aesthetic zone.

CONCLUSION

Nowadays, the placement of basal implants has become a routine procedure. The ideology behind this treatment differs from traditional implantological thinking since the prosthetic mounting is not relying on the presence of alveolar bone, vertical bone, or the availability of bone in the desired tooth area. Moreover, the bridge fabricated from porcelain mounted on the CoCr- alloy framework that is based on the basal implants also presents a cheap way to meet the demands of the patient for fixed teeth. Since, academic research must find and provide achievable routes to establish a healthy, balanced oral function; future investigation in this direction of basal implant technique seems advisable.

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