INTRODUCTION

In our daily dental practice we are usually forced to face the routine demand of patients: They request to have a replacement of their missing teeth by fixed restoration in short term treatment protocols. The cost of treatment becomes usually the second obstacle that arises after treatment options are considered.

In the case of atrophy or severe atrophy traditional concepts in oral implantology usually include the need for bone build up procedures and/or sinus lifting. This increases the number of surgeries needed and at least doubles the cost of treatment, besides in such protocols 95% of the treatment time is spent on waiting.

However, basal implants are used to avoid any extra surgical procedure, because these implants anchor reliably in resorption stable cortical bone and they are loaded immediately after surgery.

Hence, implant design plays an important role for the success of the procedure. The threads of the implant anchor the second cortical bone, while the long polished vertical shaft create a non-infectable connection with the abutment and with the prosthetics respectively, as shown in Fig 1.

METHODOLOGY

Asking for rehabilitation of his maxilla, a 45-years old male patient whose medical history was normal but showed severe periodontal involvement (generalized profound chronic periodontitis), and upon examination upper teeth showed three grade mobility and massive bone loss besides multiple over projections.

Radiographically it was found that the vertical bone height was reduced to 3-4 mm in the area of the upper first premolar to the area of the upper second molar, while the horizontal bone width of maxillary alveolar ridge was suitable even for traditional implant placement as shown in Fig 2.

After detailed clinical examination the treatment plan was made. Crestal basal implants were placed after extracting all upper periodontally involved teeth. Under local anesthesia a flapless approach was undertaken to place eleven basal (compression) implant screws. These implants offer stable cortical engagement in the opposing basal bone.

As the bone height at the area before first premolar up to the area of second molar was considered inade-
Fig 1: Typical Basal Compression Screw (BCS) with large and polished threads for cortical engagement

Fig 2: Preoperative panoramic view shows the bone height is reduced on both sides of posterior maxilla to the minimum

Fig 3: Postoperative panoramic view: two implants are placed in the tubero-pterygoid region. Other implants utilized the floor and the lateral wall of the nose.

Fig 4a: Impression caps in place

Fig 4b: Direct impression with C-Silicon material

Fig 4c: Implant analogues in place

Fig 4d: Final cast with implant analogues

Fig 4e: Metal try in
two corticals of the maxillary bone. This produces good posterior support.

In the area of upper left first molar, the horizontal bone width was also diminished to the minimum. Therefore a palatal insertion path was undertaken to place the implant reaching the opposite cortical and anchoring in the palatal wall of the sinus (thereby avoiding sinus lifting).

In the anterior segment of the maxilla, we utilized the basal bone which forms the floor of the nose and the lateral wall of the nose as a second cortical. Nine screws were inserted in different directions to gain maximum support and anterior anchorage for the bridge to compensate the reduced number of implants in the posterior region. Typically we would have placed two such implants in each posterior segment. In this case however, there was not enough bone for this standard therapy as shown in Fig 3.

Impressions were taken immediately after the bending of implants. The implants were bent to gain maximum abutment parallelism. Then the dental lab started to fabricate the final metal to ceramic prosthesis. The final prosthesis was permanently cemented in the patient’s mouth three days after surgery as shown in Figs 4a, 4b, 4c, 4d, 4e and 4f.

And the final implants were in place after 24 hours as shown in Fig 5. The fine penetration areas of BCS implants promote better healing of the gingiva after surgery. The recall visits should be regular to maintain stable and adequate occlusion as well as equal mastication on both sides. Fig 6

CONCLUSION

Basal implantology is a new category of treatment with new broad indications and almost no limitations. Traditional concepts in oral implantology usually require all types of bone buildup procedures for the subsequent installation of implants. Basal implantology does not include any augmentation.

In addition to that flapless approach with minimal surgical effort (thin mucosal penetration) minimizes postoperative pain, avoid any swelling and reduce discomfort.

REFERENCES

1. Influence of implant length and bicortical anchorage on implant stress distribution. 120, 126, 57, 58.