

Extramaxillary Technique - Zygomatic implant in Severe Maxillary Resorption: Full Mouth Rehabilitation.

With the courtesy of Dr. Balan Igal D.M.D

Patient: A 56 years old female.
A smoker: 10 packs years.
Declares to be in good health.

Chief complains:

- Impaired aesthetic (shy smile).
- Teeth mobility.
- Bad breath odor.
- Spontaneous bleeding.

Clinical examination:

- Upper jaw:
 - Chronic generalized severe periodontitis.
 - Teeth mobility.
 - Extensive loss of supporting bone.
 - Panoramic X-ray demonstrating Sinus pneumatization.
 - Grade III furcation defect in tooth 16.
- Lower jaw:
 - Chronic generalized severe periodontitis.
 - Teeth 44-45 show extensive crown destruction and deep caries.
 - Periapical lesion in tooth 43.
 - Implants – Perimplantitis with threads exposure (fig 1).

Surgical procedure:

Lower jaw: teeth extraction, installation of parallel (axial) implants.

Upper jaw: Extractions, installation of axial implants at the anterior zone and tilted implants at the posterior zone to avoid sinus elevation.



Fig 1: The panoramic X-ray illustrates chronic generalized severe periodontitis, sinus pneumatization, caries and perimplantitis.

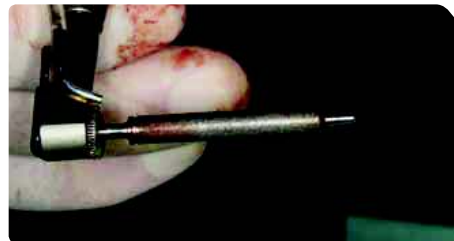


Fig 2: A tunnel preparation drill for the Zygomatic implant.

It was decided to install a Zygomatic implant at the right side because of the pneumatization of the sinus and inability to place a TPP (Tubero-Pterygo-Platine) implant.

The Zygomatic implant placement is a highly predictable procedure with a high success rate in restoration of atrophic jaws, without the need for complex bone augmentation procedures. The implant was placed following the extramaxillary protocol; this is a modification of the traditional Branemark technique.

In the Extramaxillary technique a bypass of the maxillary sinus is being made in a manner that prevents damage to the Schneiderian membrane.

The Zygomatic implant is anchored at the zygomatic bone and not in the alveolar bone; the resulting torque is very high. The prosthetic platform is being shifted buccally to a more appropriate position of the restoration.

Having an unthreaded body ending with an aggressive thread at the apical part of the implant the Zygomatic implant is highly suitable for the Extramaxillary approach. This design facilitates the fixation of the implant in the zygomatic bone.

A special drill design allows the clinician to create a clean tunnel preparation with minimal risk of membrane damage (Fig 2 and 3).

Following the osteotomy a sinus lift procedure is done as well to prevent any damage to membrane integrity during implant placement.

A 45° angle Multi-Unit abutment will correct the angle of the screw entrance.

Rehabilitation follows immediate loading protocol by a screw retained acrylic bridge, reinforced by a 3 mm induction welded titanium (grade 5) bar.



Fig 3: Osteotomy preparation.



Fig 4: Tunnel preparation.



Fig 5: Intact Schneiderian membrane after osteotomy preparation.



Fig 6: length measurement of the osteotomy – 45mm



Fig 7: Zygomatic implant (4.2x45)



Fig 8: The Zygomatic implant is mostly unthreaded to reduce periopathogens accumulation and development of perimplantitis; Aggressive fixation threads to the Zygomatic bone exist only at the apical part



Fig 9: The mounted Multi-Unit Abutments demonstrate the parallelism level that was achieved after angle correction.



Fig 10: Post op. panoramic X-ray, taken at the day of the operation