Zygomatic and conventional immediately loaded implants: a 7-year clinical prospective study.

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Abstract:
Purpose: To evaluate the success rate of immediately loaded conventional implants placed in the premaxilla and 2 zygomatic implants.

Materials and Methods: Sixteen patients (6 females, 10 males) were included. Two zygomatic implants and 2 conventional implants were placed after surgery. Removal torque and primary stability was recorded. Active functional loading was performed after 6 months. The follow-up period was 7 years.

Conclusions: Even though caution must be used (7 patients), the presented protocol showed a successful long-term clinical performance.

Introduction: One of the procedures to rehabilitate the atrophic maxilla with fixed prosthodontics is the use of zygomatic implants. In a previous study results have been presented in a short period (24 months). The aim of this study is to evaluate the predictability of the immediate loading on traditional and zygomatic implants after 7 years of clinical function.

Materials and Methods:
Patients' inclusion criteria:
- no history of diabetes, alcohol, or drug abuse
- no signs of TMD, or altered mandibular occlusal plane
- no oral infections and periodontal disease
- no sinusitis or evident alterations of the sinus mucosa
- no maxillary complete denture
- no systemic diseases, no drugs
- 7 years old
- no smokers
- no signs of TMJ, or altered mandibular occlusal plane
- no occlusion disturbances
- no need for bone regeneration.

From 15 patients only 7 could be enrolled in the study and received (between December 2003 and April 2004) from 4 to 5 traditional implants in the premaxilla and 2 zygomatic implants (tab. 1) (Figs. 1-8). 6 months after surgery temporary fixed prostheses had been changed with permanent ones (Figs. 9, 10). Patients have been recalled every year for a clinical follow-up and panoramic radiographs (Fig. 11).

Results: Survival rate for implants and prostheses was 100% after 7 years.

Discussion & Conclusion: Even though the small number of patients (n=7) could influence negatively the results, taking in consideration the studies found in literature (tab. 2) and the good long-term clinical prognosis (7 years), the immediate loading of 4-5 conventional implants and 2 zygomatic implants protocol may be considered predictable.

References:

Table 1: Patient data, implant type and length, insertion torque, and loading time.

<table>
<thead>
<tr>
<th>Age</th>
<th>Gender</th>
<th>Length of implants (mm)</th>
<th>Number of implants</th>
<th>Survival rate</th>
<th>Load type</th>
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<td>M</td>
<td>40</td>
<td>5</td>
<td>100</td>
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</table>

Fig. 1: Final panoramic, endodontic, and occlusal views of the maxillary prosthesis.

Fig. 2: Temporal cylinders before surgery.

Fig. 3: Clinical view of the provisional prosthesis at its delivery.

Fig. 4: The provisional prosthesis with the fixed temporary cylinders, relined using silicone impression material.

Fig. 5: Delivery of the maxillary and mandibular permanent ceramic fixed prostheses.

Fig. 6: Occlusal view of the maxillary cross-arch screw retained mandibular fixed prosthesis.

Fig. 7: Occlusal view of the maxillary cross-arch screw retained mandibular fixed prosthesis.

Fig. 8: Clinical view of the temporary prosthesis at its delivery.

Fig. 9: Occlusal view of the maxillary cross-arch screw retained mandibular fixed prosthesis.

Fig. 10: Occlusal view of the maxillary cross-arch screw retained mandibular fixed prosthesis.

Fig. 11: Occlusal view of the maxillary cross-arch screw retained mandibular fixed prosthesis.

Table 2: Relationship with the other long-term studies on immediate loading zygomatic and traditional implants found in literature. Only those results regarded as immediately loaded ones are considered.

<table>
<thead>
<tr>
<th>Author</th>
<th>Years</th>
<th>Procedures</th>
<th>Zyg implants</th>
<th>Trad implants</th>
<th>Prosthesis type</th>
<th>Follow-up period</th>
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<td>7</td>
<td>110</td>
<td>100</td>
<td>90</td>
<td>Fixed prostheses</td>
<td>2 years</td>
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<tr>
<td>Balshi et al.</td>
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<td>Aparicio et al.</td>
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<td>Fixed prostheses</td>
<td>2 years</td>
</tr>
</tbody>
</table>

* It is not possible to distinguish immediate from early loading cases. ** Probable (not clearly mentioned in the study). *** Not mentioned in the study.