THE MORPHO-FUNCTIONAL 3D ANALYSIS FOR ZYGOMATIC IMPLANTS: A CLINICAL TOOL WITH SURGICAL IMPLICATIONS

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The authors declare no conflicts of interest.

INTRODUCTION

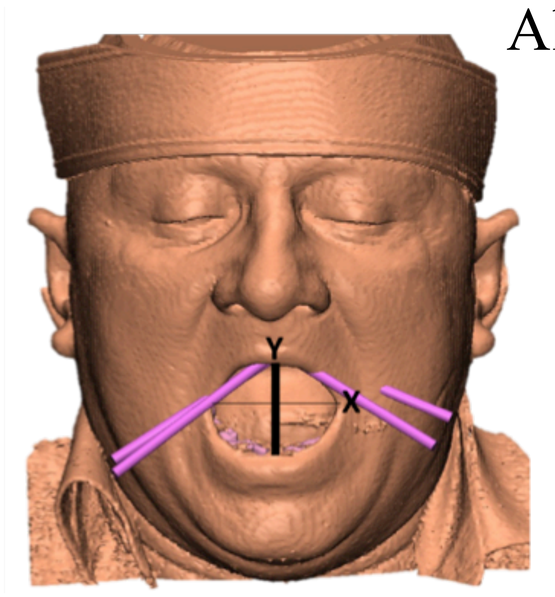

Figure 1. soft tissue reconstruction in preoperative planning.

Almost 30 years have passed since the introduction of zygomatic implants (ZIs), first described by Aparicio et al[1] in 1993 to fix autogenous bone grafts for the reconstruction of extensive defects. Van Steenberghe and Ewers[2] incorporated tools such as tomography seeking to improve its results and minimize its complications. Since then, the use of virtual planning has been incorporated into the standard protocol, however, this is not substitute for careful clinical evaluation. By integrating new elements in the diagnostic analysis of patients, a comprehensive presurgical assessment has been achieved, which in turn produces greater predictability of the surgical technique itself with fewer trans and postoperative complications.

OBJECTIVE

To describe the current protocol on ZIs placement which is the product of more than 10 years of experience in this field.

MATERIAL AND METHODS

The following are the variables to consider included in morpho- functional 3D analysis today:

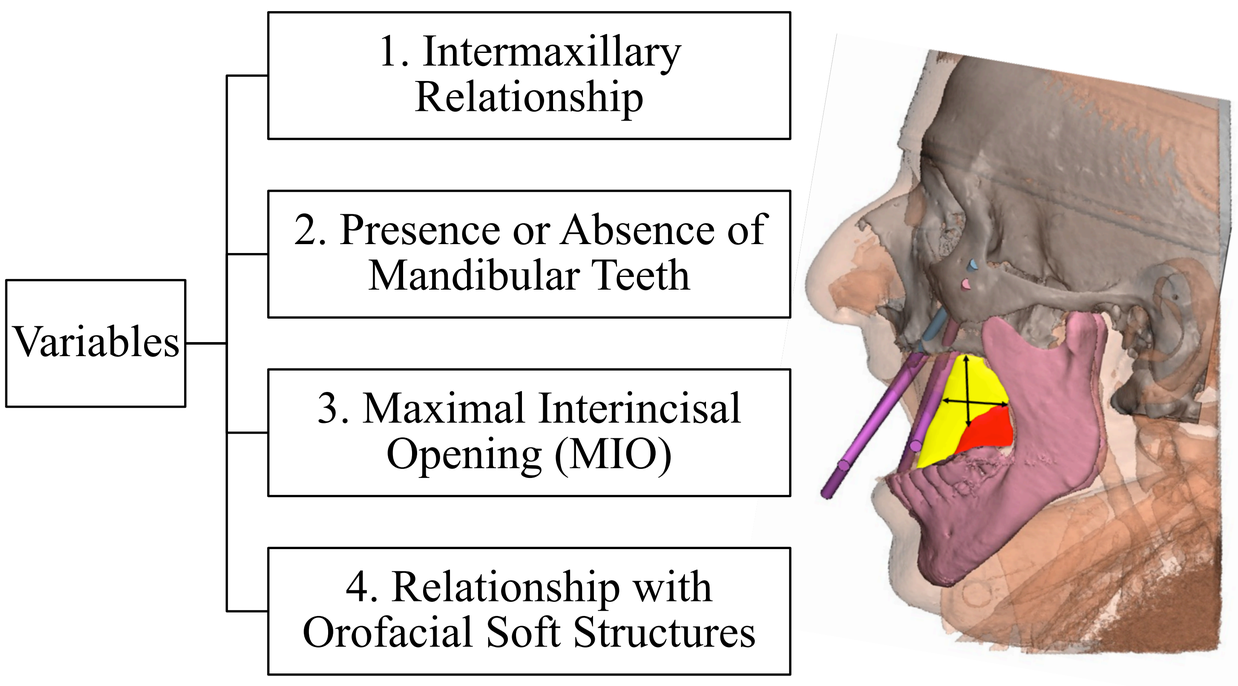

Figura 2. Three-dimensional preoperative evaluation of the maximal mouth opening.

RESULTS

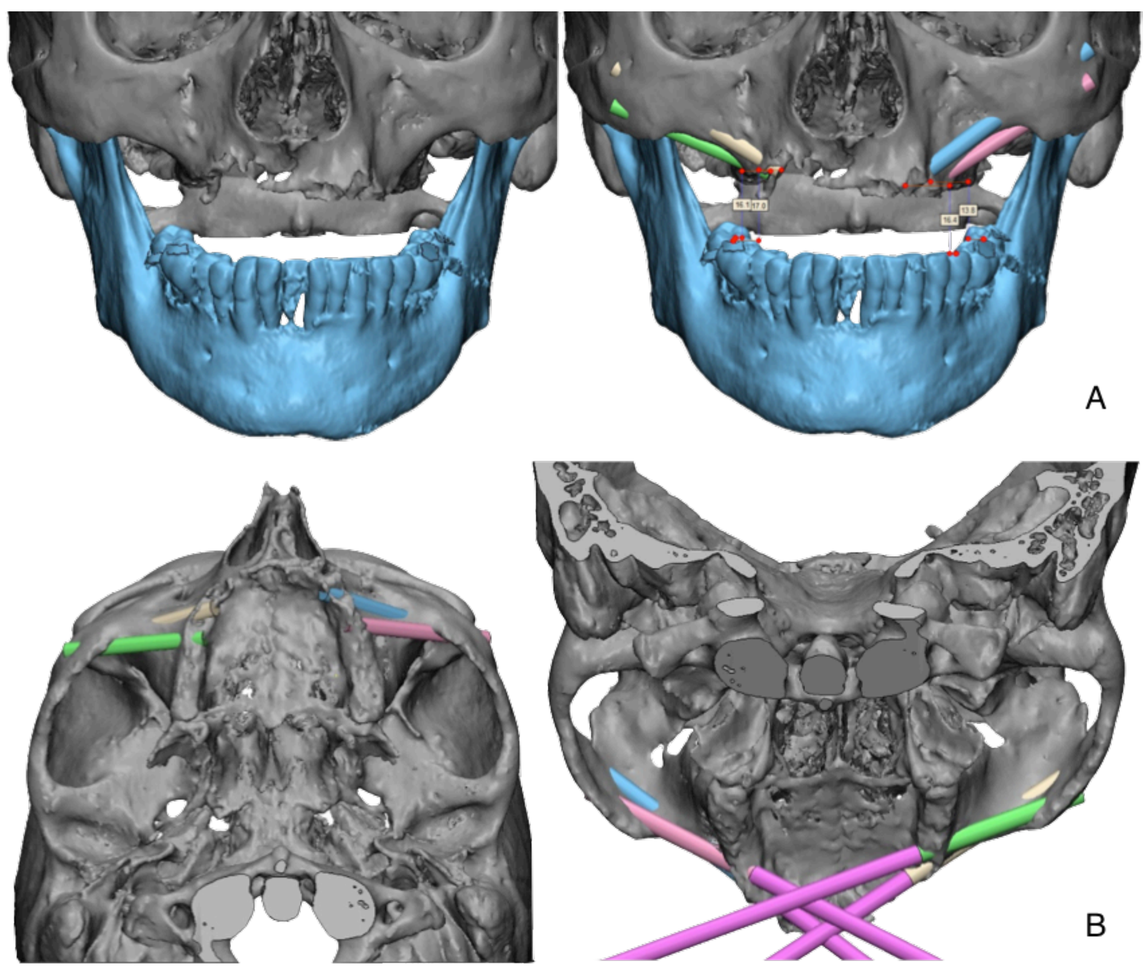

Figure 3. Image showing the planning of the implant platform emergence points, seeking proximity to the residual alveolar ridge.

DISCUSSION

Xu et al[3], noted that traditional methods for measuring anatomical variables are not adequate, due to the difficulty in obtaining structural details of the underlying tissues. This research group considers that executing the morpho-functional analysis allows for the planning to be customized not only to the virtual, but also, to the classic, nonvirtual guided approach. This will facilitate the precise placement of the fixture and minimize intraoperative challenges such as positioning problems of the splint and alteration in the handpiece angulation.

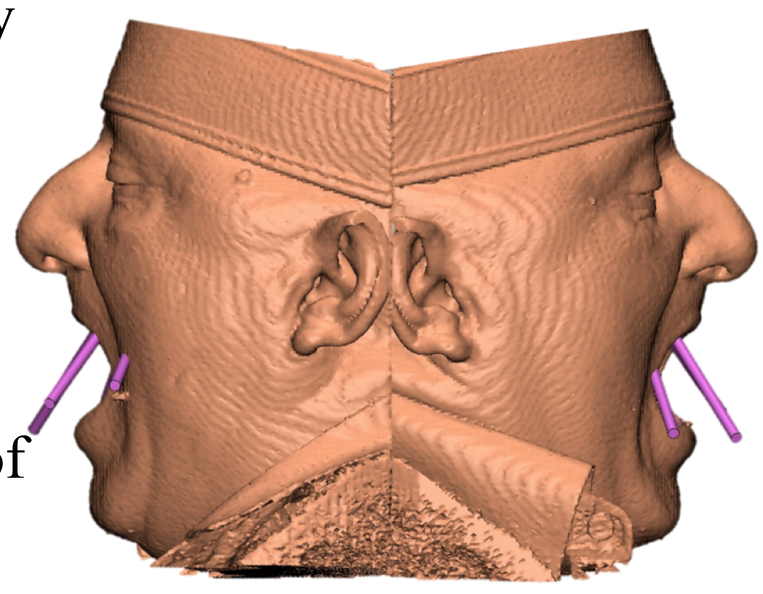

Figure 4. Importance of soft tissue reconstruction in preoperative planning.

CONCLUSION

This method has been used for the preoperative evaluation of patients, resulting in greater surgical precision and a decrease in intra and postoperative complications.

REFERENCES

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3. Xu X, Zhao S, Liu H, et al. An anatomical study of maxillary- zygomatic complex using three-dimensional computerized tomography. Biomed Res Int 2017;2017:1–8