Chairside Parallelization of Implant Stumps, Assessment of a New Prosthetic-Implant Method

Riccardo Sirello¹, Alessandro Giuntini¹, Andrea Baracchino¹, Natalino Guarasci¹

1-DDS, Università degli Studi di Milano, Italy. 2,3-DDS, Private practice, Livorno, Italy. 4-Private practice, Modena, Italy.

Correspondence to: Dr. Riccardo Sirello, Via Carlo Lorenzini 17, 57124 Livorno, Italy. Contact Us: www.ijohmr.com

ABSTRACT

Modern implantology is increasingly focusing on two factors that show a very good medium-long term survival of the implants: the switching platform and the conometric connection. They either influenced the increase in implant survival: the first reducing the loss of crestal bone, the second resulting in a drastic loss of bacterial infiltration in the abutment-implant connection interface. The purpose of our clinical case is to illustrate a new prosthetic method on a consolidated plant engineering method that allows us to combine the advantages of the conometric connection and the switching platform with the possibility of parallelizing the "chairside" with the added MUAs. This technique has demonstrated the possibility of overcoming the obstacle of the inclination; moreover, it has added a simplification of the prosthetic procedures and a reduction of the operating times.

KEYWORDS: Dental Abutment, Dental Implants, Dental Prostheses, Implant-Abutment Connection, Oral Surgery

INTRODUCTION

Parallelization of implant abutments represents a goal of primary importance in the implantology that has never been achieved easily in the event of conometric connections. We used a systematics that allows to join the conometric connections and the switching platform to the possibility of “chairside” parallelization of the inserted M.U.A.

The conometric connection and the switching platform represent two factors at which modern implantology is increasingly looking since they seem to lead to a very high medium and long term survival of the implants.1,5 The conometric connection allows the reduction of the micro gap and the micro-movements in the interface abutment-implant consequently leading to a drastic decrease in the bacterial infiltration in this place compared to what occurs in the case of non conometric connections.3,4 In association with this we observe a reduction in the crestal bone loss and a high medium-long survival of the implants. The switching platform is also linked to the reduction in the crestal bone loss5-7in addition to determine a circular orientation of the connective fibres at the level of the implant platform8. Therefore, the combination of switching platform and conometric connection leads to a reduction in the peri-implant bone resorption and to a better health of the mucous tunnel with the formation of a solid neck with horizontal connective fibres.3,8

The purpose of our case report is to illustrate a new prosthetic method on a consolidated implant method that allows to join the advantages of the conometric connection and the switching platform to the possibility of parallelizing the M.U.A. during the first session. The latter can be angled with a proper tool by modifying the inclinations in order to correct the lack of parallelism immediately during the first session also in the immediate load.

CASE REPORT

A 55-years-old patient, totally edentulous and carrying two total movable prostheses, stands to our observation with the desire to find a fixed prosthetic solution in the lower arch. Following the case study, we decided to carry out a rehabilitation through the insertion of 4 implants (Figure 1, 2). In the patient’s jaw, following the anaesthesia through Articaina with adrenaline 1:100.000 (Septanest, Septodont®) and the opening of a crestal flap, were inserted 4 standard Biokrone® M12 implants, three
The two posterior implants were inserted inclined, unlike the two anterior ones that were inserted straight. The straight bendable M.U.A. were then positioned on all the implants inducing at the load of just the posterior ones such an angulation that the maximum degree of parallelism among the abutments was reached. This result was easily achieved by mounting on the proper tool the abutment and bending it using the tip to bend the abutments (Figure 6-9).

Fig.2. Edentulous crest

Fig.3. Opening of the crestal flap

Fig.4. Inserted implants

Fig.5. M.U.A. and implants inclination

Fig.6. Handpiece and tip to bend the abutments

Fig.7.(A - B). Abutment bending

Fig.8.(A - B). Bended abutment

Fig.9. Correct inclination of the abutments

of 3.75x12 mm (in position 32,34,42) and one of 4.25x12 mm (in position 44) (Figure 3,4).
Following the button suture in Vicryl 3.0 (Johnson & Johnson®) we proceeded with the activation of the M.U.A. and taking a precision impression with the inserted turrets-shaped abutments. Afterwards using the electro welding machine (New Mondani, VI-STOM®) on the plaster model, a titanium bar was fused to the same turrets-shaped abutments. The structure so created was then appropriately sandblasted and covered with an opaque layer, after having eliminated the excess portion of the turrets-shaped abutments (Figure 10-12).

With the metal structure positioned on the implants we proceed to base again the patient’s prosthesis that was properly discarded. This allowed to incorporate the metal structure inside the prosthesis which was then finished. Finally, the provisional prosthesis so created was screwed in the mouth allowing the immediate loading of the implants (Figure 12-16).

DISCUSSION

The use of this technique has highlighted numerous positive elements both from a clinical and prosthetic point of view, allowing us to combine the advantages of the switching platform and the conometric connection with a marked reduction and simplification of the prosthetic procedures that were performed immediately in the first session. This technique thus allows us to overcome the obstacle of parallelization with the use of only one MUA which can be oriented in the best condition avoiding the use of additional components compared to the one already supplied. The MUAs may be parallelized directly out of the mouth to avoid creating harmful forces that can cause the implant to fail. An element of criticism is the fact that the MUAs, in case of thin soft tissues, might necessarily be replaced during the definitive restoration: their particular stem might be too long in cases of aesthetic relevance. However, further studies and studies are needed in order to highlight the different clinical applications of this technique as well as to underline more clearly the advantages and disadvantages.

CONCLUSION

This technique has demonstrated the possibility of overcoming the obstacle of inclination by using conometric connection implants, immediately in the first session and in the immediate load. Until recently the use of a pure conometric connection implant hasn’t allowed these kinds of interventions if not through the use of superstructures that inevitably led to an undesired increase in the vertical dimension.

With this system doctors who appreciate the conometric connection can carry out these kinds of interventions sensibly, simplifying the prosthetic procedures and reducing operational times.

REFERENCES


