SCIENTIFIC ARCHIVES OF DENTAL SCIENCES

Volume 2 Issue 4 April 2020

Opinion

Can We Predict Success or Failure in Implant Rehabilitation?

Patricia Uribe Vargas[1,2,3]*

[1]*Prosthodontics, Universidad San Martin, Bogota, Colombia*

[2]*Esthetic and Oral Rehabilitation, NYU, College of Dentistry NY, USA*

[3]*Implantology, EIRO, Buenos Aires, Argentina*

***Corresponding Author:** Patricia Uribe, The Beauty Smile®, Carrera, Bogota, Colombia.

Received: March 13, 2020; **Published:** March 31, 2020

Figure

Dental implants today are a very reliable treatment option to replace missing teeth. But analyzing the surgical and prosthetic part of implantology, there are shortcomings to increase the success rate.

A large majority of dentists believe that functional load of implants can be applied after obtaining primary stability and having allowed the time recommended by the commercial company, without taking into account data or quantitative values of the coefficient of primary stability. Primary implant stability is an imperative requirement for immediate, early, or delayed loading successful and results for long, medium, and short-term treatments for osseointegrated implants.

The stability of the implant depends on the bone quality and quantity, the surgical technique and the characteristics of each implant and its protocol. Inadequate bone quantity and quality has a major impact on the long-term failure rate of implants; however, the relationship between initial primary implant stability and bone quality remains unclear, clinical data based on scientific evidence to support the relationship between bone density and primary implant stability are weak.

I must emphasize that bone quality is widely defined and this includes bone density, it is not only a factor regarding bone quality. The primary estability part of an implant is derived primarily from mechanical adjustment or coupling with available bone from the cortical bone. Analysis of the values representing the primary stability coefficient of endo-osseous implants provides truly important clinical objective data in the restorative stage of implants.

There are several methods to determine the stability of dental implants within the alveolar bone. It is clinically convenient for dentists to have an effective method that allows predicting the primary stability of the implant in the alveolar bone and that ultimately helps determine if the period of healing and bone regeneration has ended or is in process and thus increase the success rate. in implantology cases, sometimes for dentists is difficult to determine if there is a slow or altered osseointegration; At the same time, it is also important for patients since it can be demonstrated clinically and scientifically with real data, when the restorative stage is safely to be continued without risking or failure in the last stage of treatment, due to the lack of real values quantification of osseointegration of implants.

The most common methods to clinically determine the stability of an implant are clinical perception, radiographic analysis, percussion test, reverse torque test, shear torque resistance analysis, (RFA) resonance frequency analysis, periotest, bone density analysis by CBCT (Cone Beam Computed Tomography), perception of mobility detected by any instrument with blunt end, and patient's symptom; Most of these methods do not yet provide infallible measurement values, however, it is important to use a method that offers data with a certain degree of safety before immediate loading or when proceeding with definitive restoration of implants.

In many cases, the clinical experience of the operator or dentist alone is not enough to predict the correct time to apply functional or non-functional loads to implants. For this reason, based on my clinical experience of more than 20 years, I recommend carrying out an analysis of the ISQ value before deciding on the procedure to follow in oral implantology treatments, both in surgical stage and before initial restorative stage.

In dental practice, technology must be used to minimize risks, we are immersed in a technological revolution, which is now more reachable and easier to implement in a daily practice; we must obtain advantages that technology offers, including ISQ values in oral implantology.

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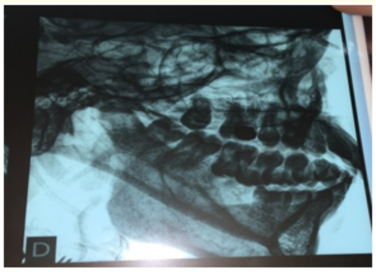

Figure 5: Tomography of the ATM.

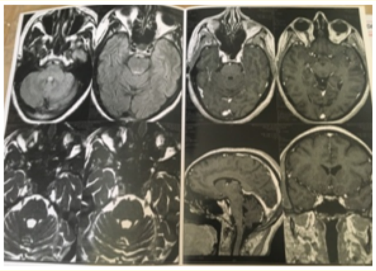

Figure 6: Cerebral MRI.

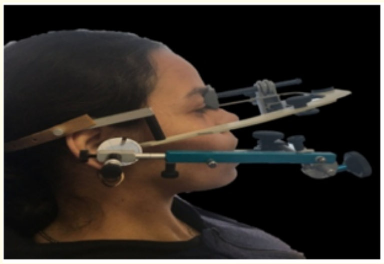

Figure 7: Axiography on the patient.

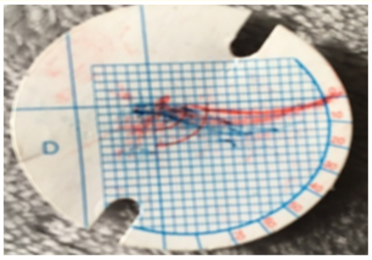

Figure 8: Initial axiography registration.

Figure 9: Aluminium paper.

Figure 10: Programmation of the articulator.

Figure 11: Equilibration of the ante position splint.

Figure 12: Occlusal splint in occlusion.

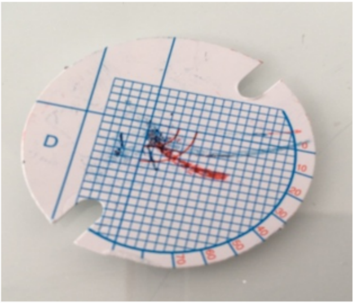

Figure 13: Axiography registration after one moth of wearing the ante position splint.

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