Oral rehabilitation using zirconia implants and zirconia prostheses – Case report

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Introduction
The zirconia used in dental implants has the following properties: greater fracture-resistance, greater thermal-resistance and greater corrosion-resistance as compared to titanium.

Many studies with animals using zirconia were carried out with encouraging results in biological terms. Only when, comparative studies with titanium implants showed that the "bone-implant contact" (BIC) standards were similar between devices, were the implants in clinical demonstration.

In terms of prosthetic rehabilitation, protocols using acrylic resin, which have the functional and aesthetic aspects, safety, were gradually replaced by metal-ceramic protocols, and, following the popularity of metal-free rehabilitation, to bioceramic protocols, with low-tooth stratification, in the pursuit of esthetic excellence.

Materials
1. Implants
Zirconium oxide (ZrO2), as a metal substitute, possesses good physical properties and bio-inertness. Furthermore, its bio-compatibility as a dental implant material has been demonstrated in several animal investigations.

The treatment seeks a correct matching of the bone and the definitive implant must confirm the good alternative for soft and hard tissue, especially in edentulous areas.

The presence of 12 implants (19 mm long CERALO®) with single abutments were planned according to the position of the remaining pangs without using guide plates.

2. Abutments
The 24 CERALO® implant system was chosen because it has a passive fit with PTX (Personalized Titanium). It is a solid, screw-retained implant system.

This is highly aesthetic implant that simulates the periodontal tissue. It has high mechanical capacity, ensuring better results in all aspects (esthetics, function, comfort). By preserving vertical bone, the abutment system is associated with better esthetics and the patient’s comfort.

3. Prostheses
The CERALO® system has zirconia-ceramic implants that place a precision at bone block, the result of which is an implant system, which is the implant abutment and prosthesis.

This is a semi-soft tissue abutment and straumann, as well as the abutment, so that it may be selected using an adequate stainless which are esthetically improved to the patient’s mouth.

Methods
We strictly followed the manufacturer’s data according to the surgical protocol.

Results

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Conclusion
Full mouth rehabilitation of a totally upper edentulous patient with no metal at all seemed a very fanciful dream for present-day dentistry. However, the combination of technologies in implantology and prosthodontics was possible in this case, giving the patient not only her former function and aesthetics but also the biocompatibility of zirconia both within the bone and outside the mouth, with excellent resistance, and interoperable prosthetic resolution.

In fact, according to the patient, she feels safe and confident in her social and family life. The CERALO® Implant System counts with all the necessary elements so that any type of prosthetics upon implants be developed, ranging from one-piece dentures to a total protocol, as shown in this case of total rehabilitation.

Bibliography

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