



## REHABILITATION WITH OVERDENTURE AND RETENTION ATTACHMENTS. CLINICAL CASE REPORT

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### ABSTRACT

One of the many benefits generated by roots that have good bone support by remaining within the alveoli for as long as possible, such as proprioception, maintaining bone level, contributing to chewing efficiency. He has developed and perfected every day more rehabilitation with tooth-muco-supported overdentures as an excellent alternative for generating the biomechanical principles that a prosthesis must comply with. We present a clinical case of an adult patient who was losing his teeth due to dental treatments such as endodontics and rehabilitated with crowns, that with time the crowns fell off until he was partially edentulous. The treatment plan to be carried out was a dent-muco-supported overdenture with retention abutments Ceka type and cast in type IV gold and placed in the canines of the upper jaw, tooth and root extractions were performed and an immediate prosthesis was placed and in the lower jaw a removable prosthesis with attachments in fixed crowns. With the results obtained with this prosthetic design, the patient felt very safe when talking, eating, smiling and singing due to the excellent retention produced by the attachments at the canine level, this has allowed the patient to acquire greater confidence and security that you can carry out your work, social and family life.

**KEYWORDS :** Retention, Retention Abutments, Overdenture.

### INTRODUCTION

It is evident that with advancing age one of many physiological consequences is the loss of teeth due to various factors, such as deep coronal or / and root caries, periodontal disease and traumatic injuries. The absence of teeth generates a loss of bone volume both in height and thickness, that is, the residual processes atrophy as time progresses and it is a phenomenon that continues in progress, unless these edentulous areas are rehabilitated with dental implants. This process of bone resorption is what has complicated the design of conventional Mucosal Supported Dentures because they must comply with the three biomechanical principles of a prosthesis: Retention, Stability and Support. The anatomy of the residual process is what provides support and retention for conventional Mucosa-supported dentures.<sup>(1)</sup>

Hence, the importance of preserving those teeth with roots that have a good length and bone support arises, to be used to generate support and retention for a prosthetic design called Overdenture to be Dent-muco-supported dentures. Implant-muco-supported overdentures are also designed when dental implants are placed. Dent-muco-supported overdentures generate important biological benefits such as; Maintaining the bone volume around the roots that remain, the proprioception reflex is maintained, the chewing force is more effectively regulated, the smallest pressure changes are differentiated, it favors the reduction of loads in the bone portion and minimizes the reabsorption process.<sup>(2)</sup> And above all the psychological and emotional aspect in the patient, as it avoids the feeling of being completely toothless. This allows Dent-muco-supported overdentures to be more comfortable than a conventional denture.<sup>(3)</sup>

The design of Dent-muco-supported overdentures can be performed on teeth prepared to receive telescopic-type crowns, on roots with domes, on roots with precision or semi-precision attachments (prefabricated or waxed and cast).<sup>(4)</sup>

The success of the durability of the Dent-muco-supported overdenture is the correct selection and preparation of the teeth that must meet the following requirements; 1) Periodontally healthy, 2) Endodontic treatment can be performed, 3) The number of teeth selected, two abutments in

the canine area provide excellent results and four abutments separated from each other is more favorable for success.<sup>(5)</sup> Regarding the preparation, it will vary if it is a prefabricated retention attachment or if it is one cast in metal such as; The telescopic, dome and retention attachment, for this second design, the tooth should always be prepared leaving a supragingival termination line to favor the sealing of the metal with the tooth and avoid filtration and the formation of cavities that will lead to the tooth failure selected. The objective of this clinical article is to show an alternative to rehabilitate the upper jaw that presents several teeth with endodontic treatments but without crowns for more than 1 year, and the two canines in a position to use them to receive a retention abutment and design an overdenture.

### MATERIALS AND METHODS

65-year-old female patient who requests full oral rehabilitation due to difficulty chewing food, in her dental history she refers that when she had any pain they performed endodontic treatments and then they placed crowns, but these over the years she lost them and as already He did not feel pain, he was left until he had to perform the extractions. In the panoramic X-ray study, all the root canal treatments performed without crowns are observed. (Figure 1)

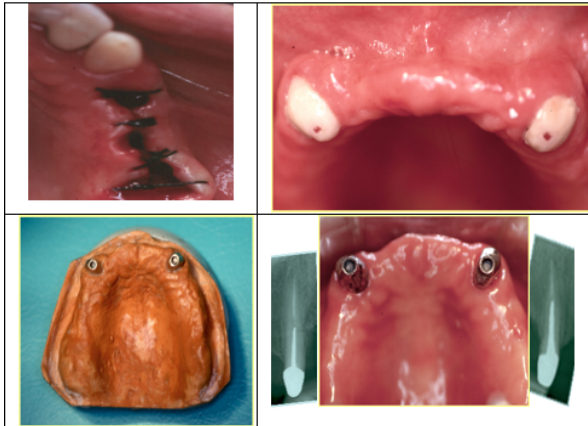


**Fig. 1 Clinical and radiographic study  
Estrada, B (2017)**

To design the treatment plan in this type of clinical case, an order and sequence must be maintained so that the recovery

of the patient is as comfortable as possible and can be fed in a healthy way during the treatment, since they are treatments that last approximately between 6 and 10 months

**The order or sequential steps to follow are:** 1) Perform an immediate or provisional prosthesis. 2) Perform endodontic treatments on the left and right canines. 3) Perform tooth, root and suture extractions. 4) Place the temporary or temporary prosthesis so that the patient can chew, speak, and carry out their tasks normally. 5) At a subsequent appointment, make the preparations of the canines (supragingival termination line and root canal de-filling 2/3 of the root length). 6) At a subsequent appointment, the alveoli already healed, a physiological impression of the canals and the entire maxilla is taken. 7) In the master model, the wax-up and the castable is placed with the parallel meter exactly on the same axis of the root canal and it is cast in type IV gold. 8) Testing the attachments Ceka type in the mouth and taking X-rays to check the seal. (Figure 2)



**Fig. 2**Extractions, preparation for abutment, mouth test with Rx Estrada, B (2017)

Subsequently, the normal sequence is followed to perform the conventional denture regarding intermaxillary relations. Simultaneously, extractions were made in the lower jaw and the teeth were prepared to place splinted crowns that carry extra crown attachments, to re-anchor a bilateral removable, in this way the entire mouth will be aesthetically and functionally rehabilitated.

**RESULTS**

It was possible to assess that the patient adapted in a short time to the overdenture designed with retention attachments, because the patient felt that she had good retention that allowed her to feel very safe when speaking, eating, smiling and singing. But within the advantages offered by this prosthesis design is that proprioception and bone level are maintained unlike conventional dentures, the results of this design of a Dent-muco-supported overdenture are much more the benefits that the patient receives from despite being a longer and more expensive treatment. (Figure 3)



**Fig. 3** Clinical and radiographic results Estrada, B (2017)

**CONCLUSIONS**

For prosthetic designs and especially the overdenture, the recovery of facial and dental aesthetics is achieved, as well as, the functions of chewing, swallowing and phonation by complying with the prosthetic triad that optimizes retention, support and stability and mainly not lose sight of biomechanics. All these factors are on which the success and durability of the oral treatment with this prosthetic design will depend. In such a way that the patient acquires greater confidence and security that she can carry out her work, social and family life without problems.

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