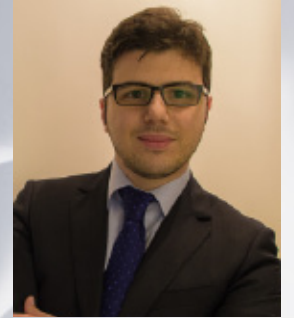


The simplicity of the low-profile attachments



Dds Roberto Scrascia

Born in Taranto on October 6, 1982. He graduated from the University of Bari in Dentistry and Prosthodontics in 2009, with an experimental thesis on Oral Pathology with Professor Massimo Petruzzi. Now he devotes his activities on Endodontics, Oral Pathology, Surgery and Oral Implantology. In 2009 he attended at Endodontic World in Conversano the annual course Endodontics Dr. Giuseppe Carrieri. In 2010 he follows the theoretical and practical course of Implantology AstraTech. In 2012 he perfected in "Regenerative Bone in Oral Surgery" at the University of Chieti, of the Prof. Antonio Scarano. In 2012 and 2013 has been a contract professor of Pathology and Oral Surgery for Regional Higher Education. In 2014 is elected provincial councilor of ANDI (National Association of Italian Dentists). In 2014 it becomes Active member of AIC Italy (Advanced Dental Implant Research & Education Center) of which he is also speaker. From 2015 he was elected counselor of the CAO (Commission Order Dentists) in the Order of Doctors and Dentists of the Province of Taranto. In 2015 becomes international tutor for Rhein83. Speaker at national and international conferences. Currently he works as a private dentist in his clinic and researcher; he offers consultations and is active in the protection of the profession.



In recent years the awareness of the dental operators is changing towards the overdenture treatment on implants. Since years it has been regarded as a fair compromise between economic and biological factors, but today we are increasingly aware of the role, sometimes elective, that it has in the resolution of the clinical cases and in improving the quality of life of our patients. The overdenture on implants has many facets and developments and in this article we want to consider its simplest version, with the most advanced components; a solution which, in its practicality, stands as the gold standard in the edentulous mandible in solution patients who do not have consistent financial resources.

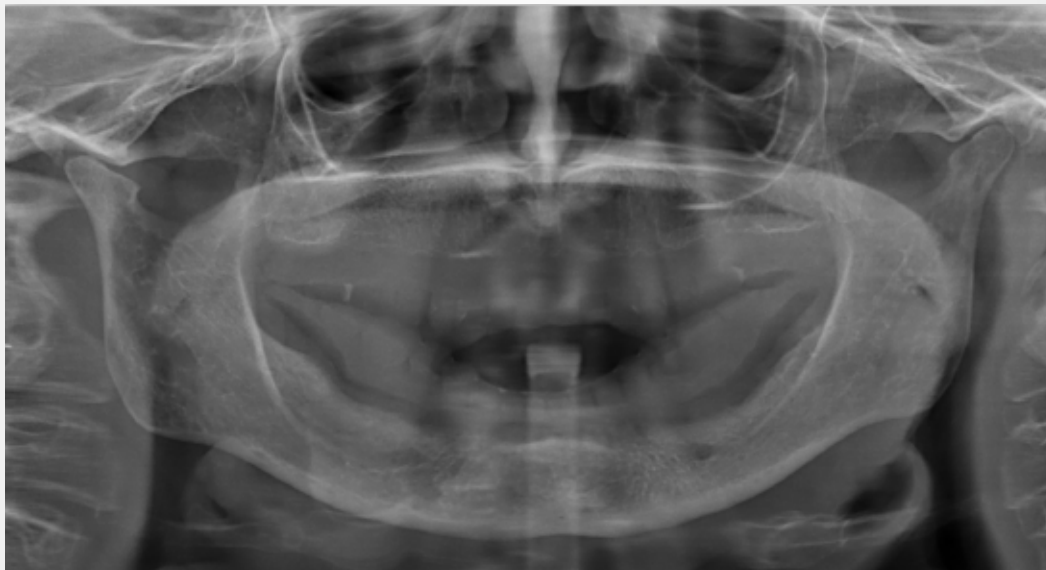
Introduction

The following article aims to show how a minimal invasive work can significantly improve the quality of life of our patients. The total upper and lower edentulism represents for us insiders a challenge; it must be interpreted above all from the patient's point of view particularly when articulated and expensive treatments are not the best for our patient. In the rehabilitation of the total edentulous patients, patients' quality of life can be improved with the realization of removable dentures stabilized by implants. As the literature demonstrates, a patients' adaptation to the upper denture is easily achievable, conversely, a poor stability and masticatory problems is often reported in the mandibular jaws. Evolving these lower prostheses on implant overdentures, there are numerous advantages reported in the literature, such as aesthetic and phonetic improvements, increased stability and masticatory efficiency of the prosthesis. The area of surgical interest is the symphysis of the jaw, between the two mental foramens. Here the bone resorption of the mandibular usually preserves a sufficient amount of bone that allows the correct positioning of at least 2 implants. The number of osseointegrated implants (2, 3 or more) in interforaminal region do not affect tangibly on the success of the overdenture prosthesis (OVD): the retention, the stability and the health of the implants are comparable. The OVD is a prosthesis of success, consistently growing. The implant survival rates ranges from 92% to 100%, regardless of the type of attachment used or the age of the patients. The surgical protocol to be preferred is the one-stage technique, especially in elderly patients or in the pre-

sence of systemic diseases. The bone healing results are equal to the two-stage technique, but with the one-stage technique we have only one intervention and therefore a minor amount of patients' stress and less costs for the clinic; these are big advantages. To propose this solution to a totally edentulous patient, who cannot afford or doesn't want a fixed prosthesis over implants, means still providing an excellent therapeutic choice. Today the overdentures' quality is constantly improving, which led us to consider it no more as the average solution between full dentures and fixed prosthesis, but as a well defined choice with its precise rationale and in some cases, no matter if complex or not, as the best treatment choice. Today a big debate is open over the choice of attachments systems, because a standard protocol is complex to define: the advantages or disadvantages of a treatment, patient specificities influence the clinical indications. The topic that we would like to emphasize is that the mandibular overdentures on 2 implants is, however, a reliable and predictable choice in patients with edentulous mandible and stands as the basic treatment in such situations.

Case Report

The patient comes to the clinician's attention with big problems of acceptance with her maxillary and mandibular complete dentures. Anamnesis showed a history of several prostheses, all of them have been refused by the patient due to a bad adaptation to them that lead to a dishearten attitude towards a further treatment.



Rx Opt of the patient at the beginning of the treatment



Front view of the mandibular ridge



Occlusal view of the lower arch, it is remarked a floating crest



Detail of the perioral area, where emerges a lack of support of the soft tissues of the face.

The patient's budget led us to propose a simple solution. One of the main goals is to provide an adequate support of the perioral soft tissues, due to the loss of hard and soft tissues that over time has been remarkable.

In accordance with the patient, the dentist decides to proceed with the construction of two new prostheses and to stabilize the lower jaw with two implants in the interforaminal area.



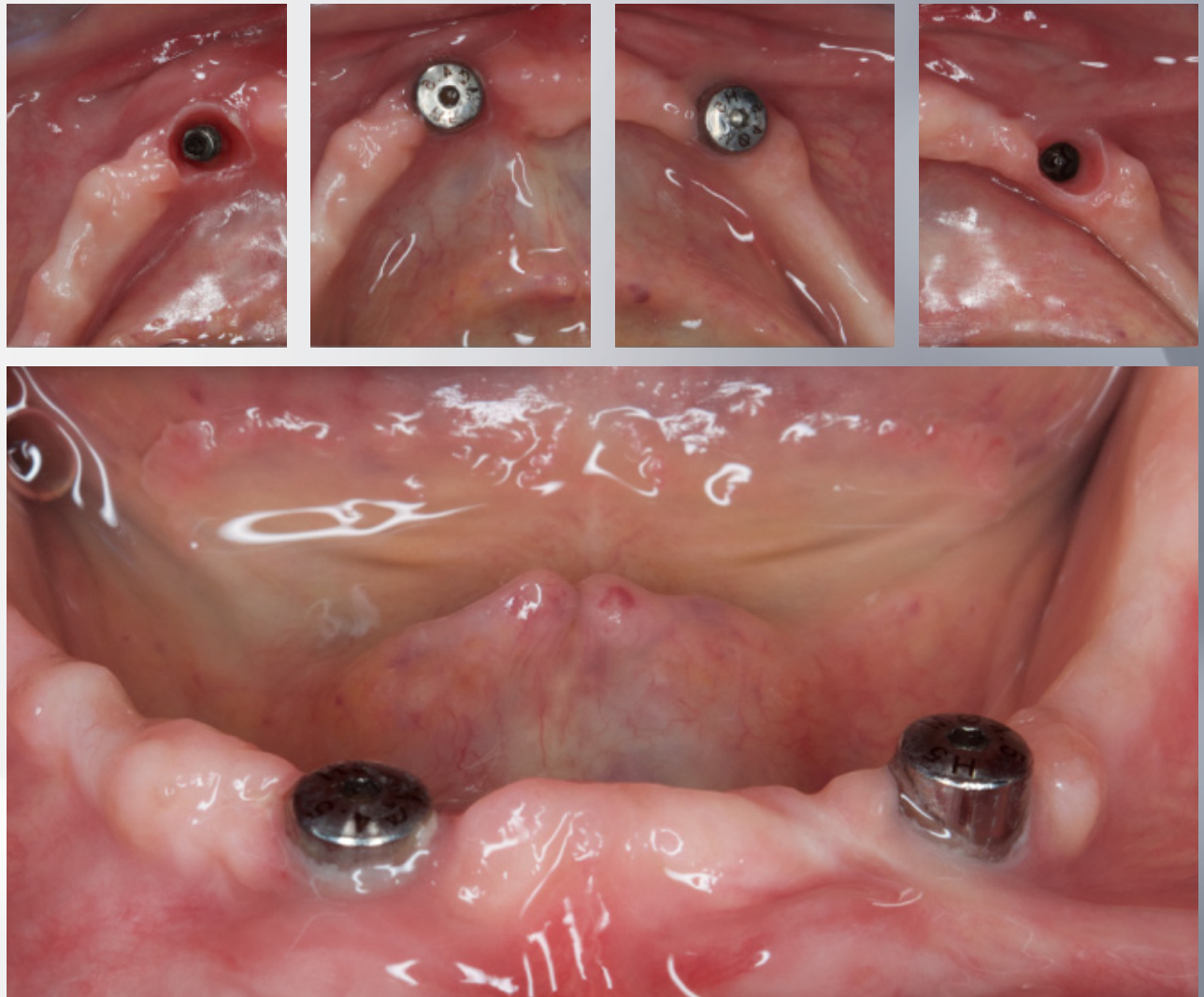
Front view of the occluded prostheses

After the preliminary stages the new prosthesis were constructed and after the stabilization of the soft tissues, a routine checks were performed such as occlusion and the management of the flanges' length. The implants were inserted only when the patient did not present any symptoms. According to Kalk's studies, the more favorable biomechanical area for the implantation is identifiable where the canines were present, in the area of major curvature of the jaw. Taking this into account two implants were positioned with a one-stage surgery, with simultaneous screwing of the healing abutment in order to shorten the treatment's time.

The lower denture was emptied in the implants' area and with a direct technique relined with F.I.T.T . Using this technique it is preferable to check the patient within 48 hours in order to soften any rough edges due to the progressive hardening of this material.

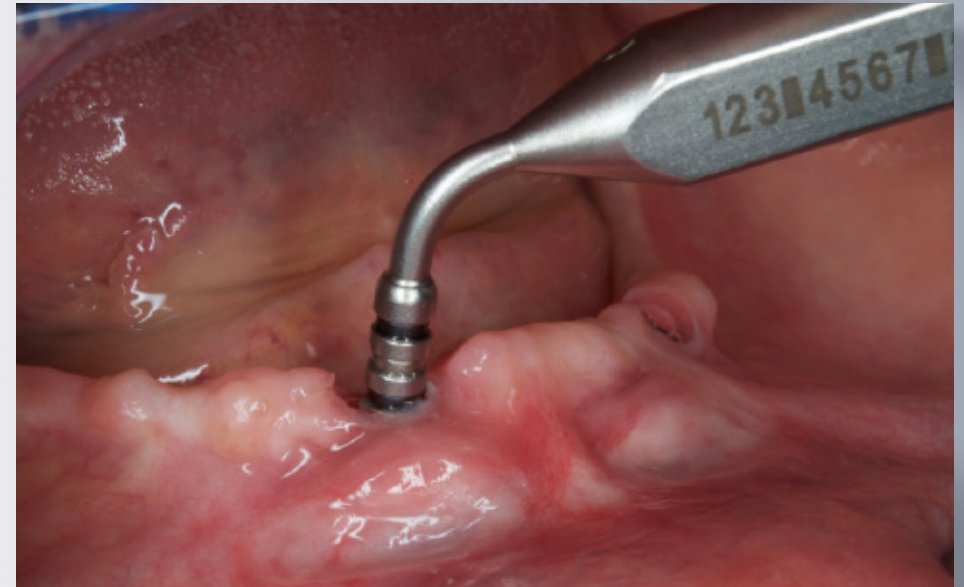
As per protocol between the 7th and 10th day the stitches were removed and planned a periodic check every 2 weeks in order to reline and modify the prostheses basis as long as the gums recover after the surgery. In proximity of the 3rd month after the implantation, due to a localized breakage of the flange a complete relining of the prosthesis in a few hours was performed.

After 3 months the healing abutments were removed and carefully measured the cuff height in order to choose the correct low profile attachment, OT Equator Rhein83, that in this case was measured in 3mm in the 4.3 area and in 2mm in the 3.3 area.



Results of tissue healing after 3 months

Once it was screwed the correct attachments and tightened as per protocol to 25 N*cm, a decision must be taken: to embody the metal housings in the mouth with a direct technique or to take an impression and to do the same with an indirect technique in laboratory.



Millimeter probe to measure the cuff height

It was performed the direct technique with the embodying of the Rhein83 Ot Equator metal housings to further shorten the treatment's time and to avoid discomfort to the patient; indeed the treatment plan did not provide to the patient a temporary prosthesis, in order to reduce costs, time still giving a valuable prostheses. In accordance with the patient it was decided not to waive the quality of the final product, but to adopt a faster method, slender but mostly predictable. For the realization of the prosthesis thanks to the Dental Technician Mr. Luigi Secondo, Taranto.



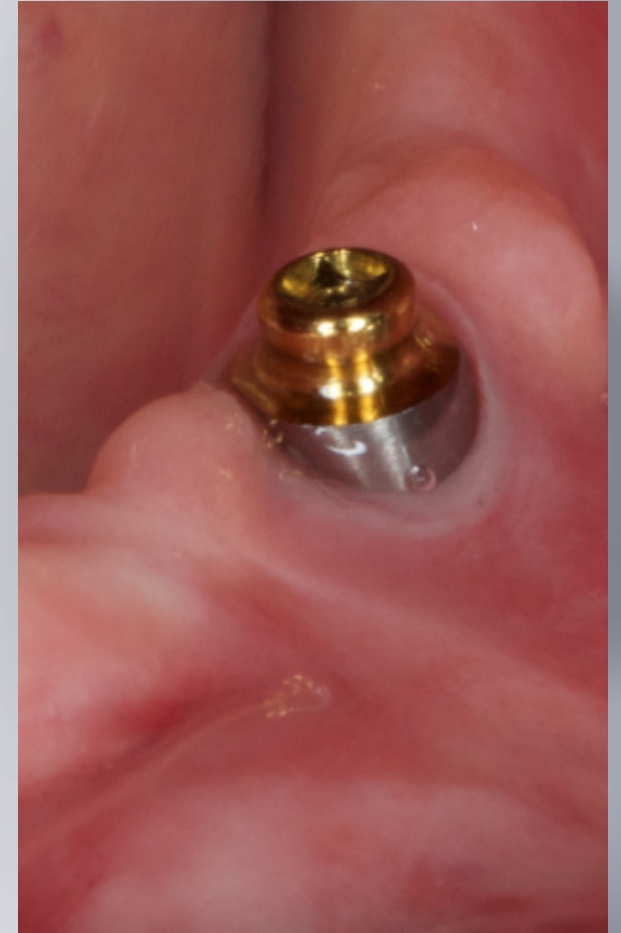
Direct technique



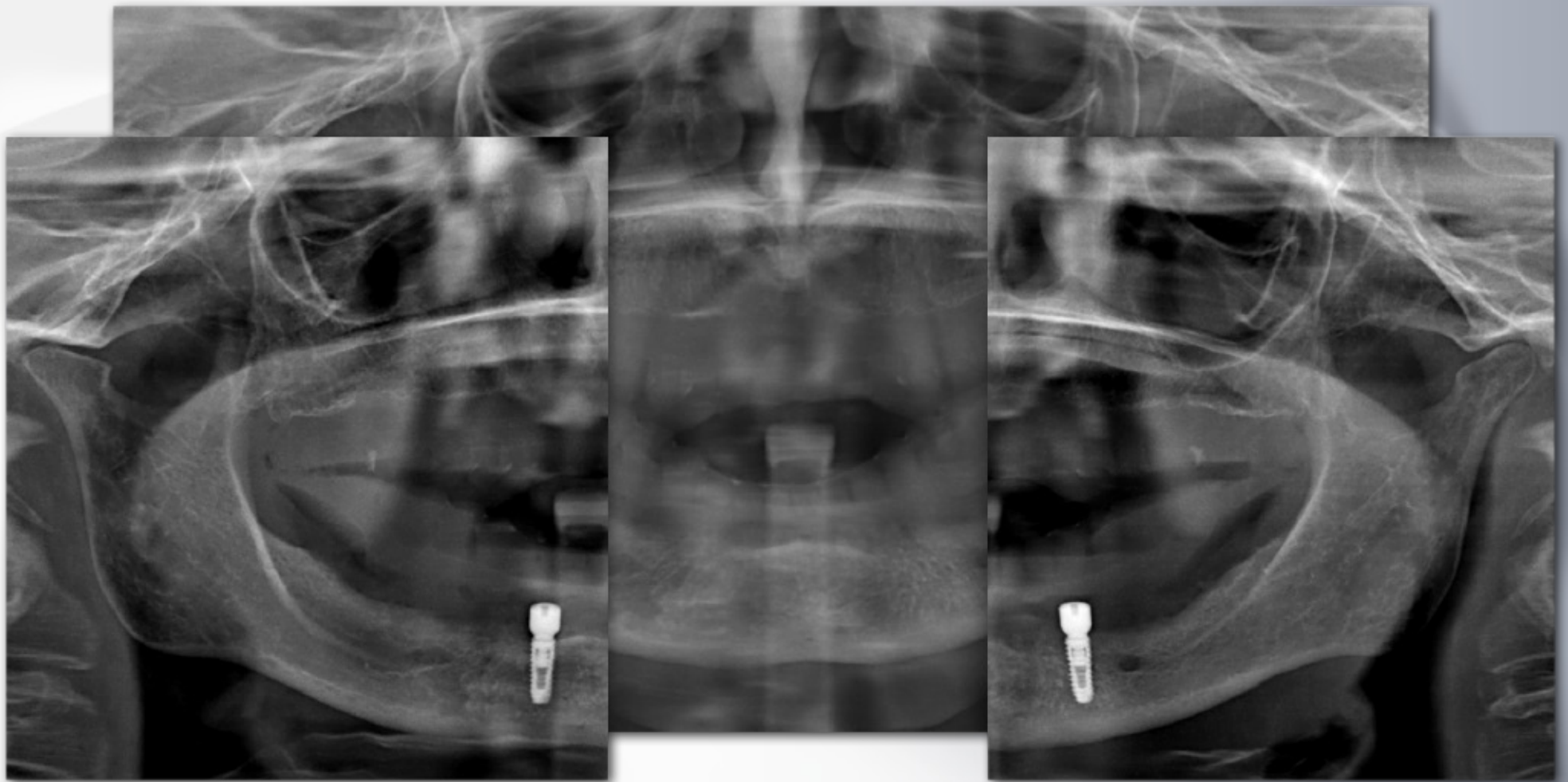
Support of the perioral tissues with the prostheses



The relined prostheses with the direct technique



Rhein83 Ot Equator Profile with the correct cuff height that ensures the best performances



Final and initial Rx Opt. compared

Few weeks after the delivery of the prosthesis a check of the patient was performed with a certain amount of professional satisfaction remarking the patient's happiness and the enthusiastic acceptance of the new prosthesis.



The Rhein83's Ot Equator Profile in the mouth

Follow up after 2 years

The importance of the success of a prosthetic treatment is the follow up; especially where rigid and single attachment is used. Compared to more complex structures such as bars that provide a structural support for the prosthesis, when we have an overdenture with a mixed implant and mucous support it is crucial to control whether the internal profile of the prosthesis is congruent with the profile of the edentulous ridges; if there is an attachment's wear and a bone resorption around the implants due to an eventual overload.

We report in this article a follow up to two years, which suggests a total harmony of the prosthesis with the surrounding tissues. Even if the attachments have very few signs of wear, as per protocol they were changed. This demonstrate how much the overdenture is stable and predictable. The bone around the implants is stable, not re-absorbed and the mucosal tissues are in perfect health. We also note a slight positive remodeling of the gums around the attachments.



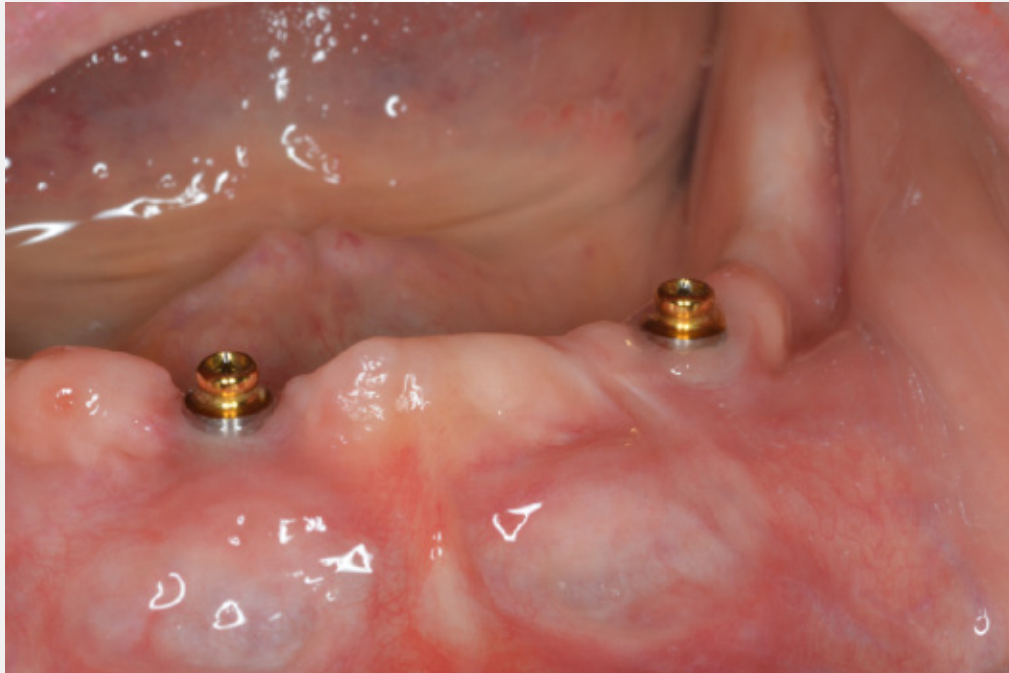
Situation of the attachments at the current follow-up. We notice the presence of bacterial plaque. We ask the patient if she feels something changed in the overdenture stability; she answered that in her opinion nothing has changed.



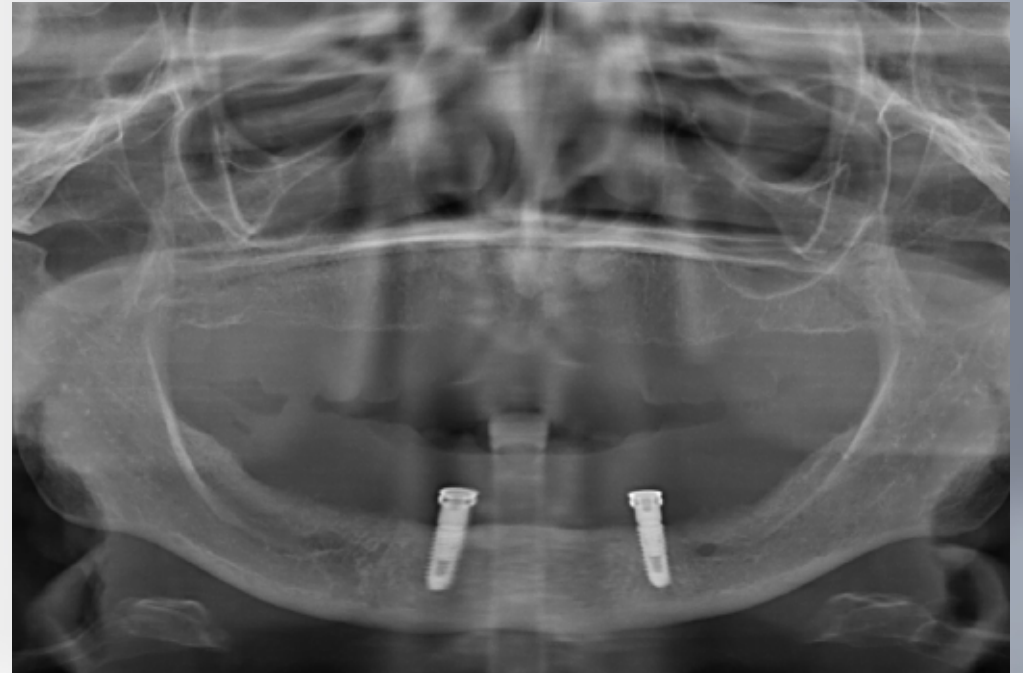
Control of the implant in the 43 area



*Control of the implant in the 33 area.
We also notice in this area the healthy and stability of the soft tissues
around the attachment and a good bone stability around the implant.*



Dismissal of the patient after the hygiene of the attachments and after been motivated in the household cleaning and, above all, to be more regular with the clinical checks



Follow up radiography after 2 years

Discussion

At a time where the average age of patients is increasing as long as and their demands and requirements we need to have in our working knowhow a fast, safe, practical, valuable treatment and above all economic. It would seem almost impossible for a single treatment to have all these aspects. The literature's analysis shows however that the mandibular overdenture of 2 or more implants has a high implant and prosthetic success rate. This allows the overdenture to be a highly valuable rehabilitation treatment.



Bibliography

Geertman ME, Boerrigter EM, Van Waas MA, van Oort RP. J Prosthet Dent. 1996 Feb;75(2):194-204.

Roberto Branchi, Le impronte nel paziente totalmente edentulo, © 2009 Firenze University Press

Naert I, Gizani S, Vuylsteke M, Van Steenberghe D. J Oral Rehabil. 1999 Mar;26(3):195-202.

Ferrigno N, Laureti M, Fanali S, Grippaudo G. Clin Oral Implants Res. 2002 Jun;13(3):260-73.

Zitzmann NU, Marinello CP, IPD 1999

Preti G., Bassi F. J Oral Rehabil 1996

Jemt T, Chai J, Harnett J, Heath MR, Hutton JE, Johns RB, McKenna S, McNamara DC, van Steenberghe D, Taylor R, Watson RM, Herrmann I. Int J Oral Maxillofac Implants. 1996 May-Jun;11(3):291-8.