

Immediate **functional** implants in the **aesthetic** zone of a heavy smoker

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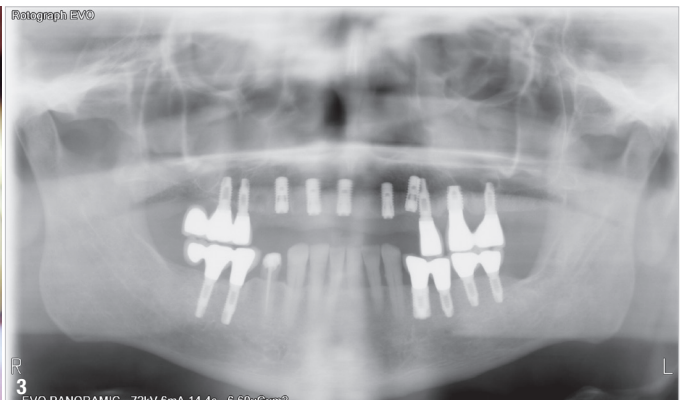


Dental implant placement represents the most cost-effective and long-term solution for the replacement of missing teeth and it can be argued that dental implants have a high average life expectancy. Immediate or early implant loading procedures are well documented in cases of edentulous sites in the mandible and the maxilla. It is often difficult to obtain good results in the anterior region and it is essential for practitioners to understand the anatomical basis for and the limitations of implant dentistry in the aesthetic zone. To achieve satisfactory implant survival rates, it is vital to have reproducible treatment protocols that reinforce individual expertise and help to achieve high treatment quality. To this end, the following factors should be taken into consideration: Prior to tooth extraction, immediate loading requires the careful selection of patients and a high level of patient

compliance. Immediate loading protocols increase the complexity of treatment planning and the surgical procedure itself. Immediate implant loading should be planned ahead of tooth extraction and should be limited to clinical situations that allow for primary stability ($>30\text{Ncm}$) and correct prosthetic positioning. Additionally, the procedure can help to reduce bone resorption. However, there can be complications when carrying out immediate implant loading in the anterior region. When immediate loading is performed there should be no indication of inflammation, periodontitis or gingivitis. Furthermore, a good concept for Antibiosis is necessary and tooth extraction should be carried out in minimally invasive fashion. In the anterior region the vestibular lamella should not be incriminated. Immediate implant placement in combination with immediate loading can lead to a better clinical and aesthetic treatment outcome. Fixed prostheses on implants show significantly better results than removable prostheses.

Materials and methods

The 75-year-old male patient was a heavy smoker who smoked approximately 40 cigarettes per day (Fig. 1). Heavy smoking can be a contraindication for implant insertion. There is evidence in the literature pointing to a lower survival of dental implants in smokers. One possible mechanism by which smoking may affect osseointegration is the reduced blood flow rate due to increased peripheral resistance and platelet aggregation. Smoking directly affects osteoblast function. In general smoking is a major risk factor for implant failure. When smokers are treated with implants good bone quality is required.





Treatment protocol

Augmentin was administered as premedication for a period of one week. After microbiological examination, an antibiotic was prescribed (Clindamycin Aristo 600, Aristo Pharma). In addition, the patient was instructed to rinse with Chlorhexamed (GlaxoSmithKline). Local anaesthesia was administered with Ultracain D-S forte (Sanofi-Aventis Deutschland), and 40mg Dexamethasone (Dexa-ratiopharm (ratiopharm)) was administered intramuscularly at the same time. The implants used were OKTAGON DENTAL RATIO implants (DRS International) with a diameter of 4.1 mm and a length of 12 mm (Figs. 2 & 3).

Postoperative care

The criteria of Albrektsson and Buser et al. were applied in the follow-up examinations. These criteria for implant success are frequently cited and generally accepted. According to them, implant success is defined by the absence of persistent subjective complaints, including pain, foreign body sensation and/or dysaesthesia, the absence of recurrent peri-implant infection with suppuration, the absence of mobility, continuous radiopacity around the implant and the possibility of a prosthetic restoration. The healing process of the implants was good in the case described.

Discussion

The literature frequently reports high survival rates for the immediate loading of fixed full-arch maxillary prostheses supported on three or four implants or on multiple basal implants (Figs. 4 & 5).

There is evidence that immediate loading protocols demonstrate high implant survival rates and could be recommended with caution in certain clinical situations. The use of implants in smokers may influence failure rates in the form of postoperative infections and marginal bone loss. Therefore, our results should be interpreted with caution.

Editorial note: During the production of this article Dr Inge Schmitz unfortunately passed away.



about the authors



Dr Dr Branislav Fatori has more than four decades of experience in implantology. In addition to his German doctoral degree, he holds a second doctoral degree from the University of Belgrade in Serbia. He was trained at prominent clinics around the globe and has worked as a consultant for expert societies and implant manufacturers.



Dr Inge Schmitz has worked at the Institute of Pathology of the Ruhr University Bochum in Germany since 1990. Her main interests were implantology, stents, electron microscopy and osteology. She studied biology at the Ruhr University Bochum and completed her PhD at the then University of Essen in Germany in 1989.

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