

# What aesthetic advantages are offered by 3.3 mm diameter ceramic implants for anterior dental restoration?

## Initial situation

A female patient, aged 39 years, in good general health, attended our practice for a consultation. She came from a small town about 70 km away and had found out beforehand from the Internet which dentist in the area offered ceramic implants. The woman was prepared to accept the long trip to reach us because she was worried that the apicoectomy proposed by her own dentist would once again involve introducing new foreign material (sealing material for the apical closure of the root canals) into the bone. She had therefore decided to have the root-filled teeth and associated metal-ceramic crowns removed as well as the periapical granulomas. She formulated her desire for ceramic implants clearly and unequivocally. Particular importance is attached in our practice to an informative initial consultation with new patients. Expectations of both patient and therapist, the “shared therapeutic destiny,” should be addressed in this consultation. The patient in this case is looking for very good function, a high level of aesthetics and well tolerated materials. Our expectations consist of constructive cooperation. This covers a comprehensive history, very good diagnostic options and high-quality surgical and dental technology products. All of these are integrated in a programme of oral hygiene management developed for implant patients. Planning involves detailed explanation of the intended treatment, photographs, models and x-rays (CBCT) (FIG. 1).

## Therapy schedule

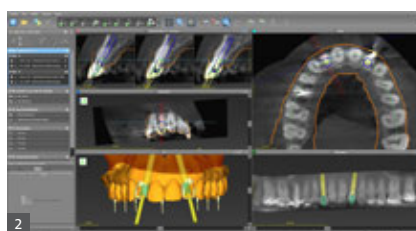
The patient’s dental chart revealed full dentition restored with plastic filling materials, Teeth numbers 12 and 22 had been crowned after endodontic treatment. The patient complained of problems in the maxillary region between teeth numbers 13 and 23. Pain on pressure was reported in response to digital pressure (thumb and index finger) in the apical region of teeth numbers 12 and 22, differing clearly from the adjacent regions. A clinical diagnosis of suspected apical osteitis was made and was confirmed in the x-ray and CBCT (cone beam computed tomography) images subsequently taken. After being given an explanation and consideration of the various options, the patient decided on extraction of teeth numbers 12 and 22. We selected immediate implantation for the restoration of region 12 and 22. Good experiences with this method allowed us to hold out to the patient



**JOCHEN MELLINGHOFF**

DR. MED. DENT. M.SC.  
GERMANY

In practice in Ulm since 1986. 1990 to the present, free-lance lecturing in prevention, practice management, media management and documentation for dentists and doctors, lectures and courses in implantology with live operations performed by myself. Master of Science, Oral Surgery (Danube University Krems). Certified specialism, implantology. Consultant to the DGI and DGOI. Author, particularly in the field of ceramics implantology. Head of the Quality Circle of the Bavarian Regional Association of the DGI. ITI Study Club Director.



the prospect of a shorter treatment period and a high-quality aesthetic outcome. After evaluation of the CBCT, we were able to meet her request for the provision of ceramic implants (FIG. 2).

### Surgical procedure

The two lateral incisors were removed using a Benex extractor (FIG. 3). This reduced the risk of alveolar damage, particularly damage to the vestibular alveolar wall. The alveoli were freed from the inflamed apical tissue by means of intensive curettage. Two monotype, reduced-diameter Straumann® PURE Ceramic implants (diameter 3.3 mm/length: 12 mm) (FIG. 4) were implanted using a surgical drill template. The two ceramic implants could then be inserted into the prepared alveoli with a torque of 35 Ncm (FIGS. 5, 6). After suturing, impression posts were used to take an im-

pression in order to create long-term temporary restorations. Chairside temporizations were used until these were ready (FIG. 7).

### Prosthetic procedure

With the long-term temporary restorations, the patient was able to go to work and her ability to communicate was not restricted in any other way either (FIG. 8). The healing process was problem-free. The impression for the permanent crowns was made using a single tray with polyether and impression caps compliant with the system (FIGS. 9, 10). The crowns were manufactured on the basis of milled zirconium dioxide copings veneered with feldspar ceramics (FIG. 11). Cementation with glass ionomer cement produced a secure outcome. Treatment was completed by a functional test (FIGS. 12-14).

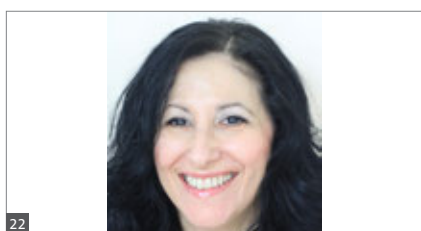


### Treatment outcome

The outcome of the treatment met the planned specifications in terms of both aesthetics and function. The minimally invasive extraction meant that both hard and soft tissue were preserved to the maximum extent possible. Comparison of the periodontal situation after one year on the basis of photographs and x-ray images permits a very good long-term prognosis to be made (FIGS. 16-20).

### Conclusion

The patient asked for a non-metal, prosthetic implant. As a result of the limited spatial conditions, ceramic implants were selected with a diameter of 3.3 mm. The detailed planning and its implementation mean that it was possible to achieve a more than satisfactory outcome for the patient, the practice and the dental laboratory. The patient has decided to remain in our oral health programme despite the additional travel involved. This means that we will be able to record further developments (FIGS. 21-22).



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