

The link between oral health and systemic illness

A case study on the replacement of root canal-treated teeth and titanium implants with ceramic implants

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Case description

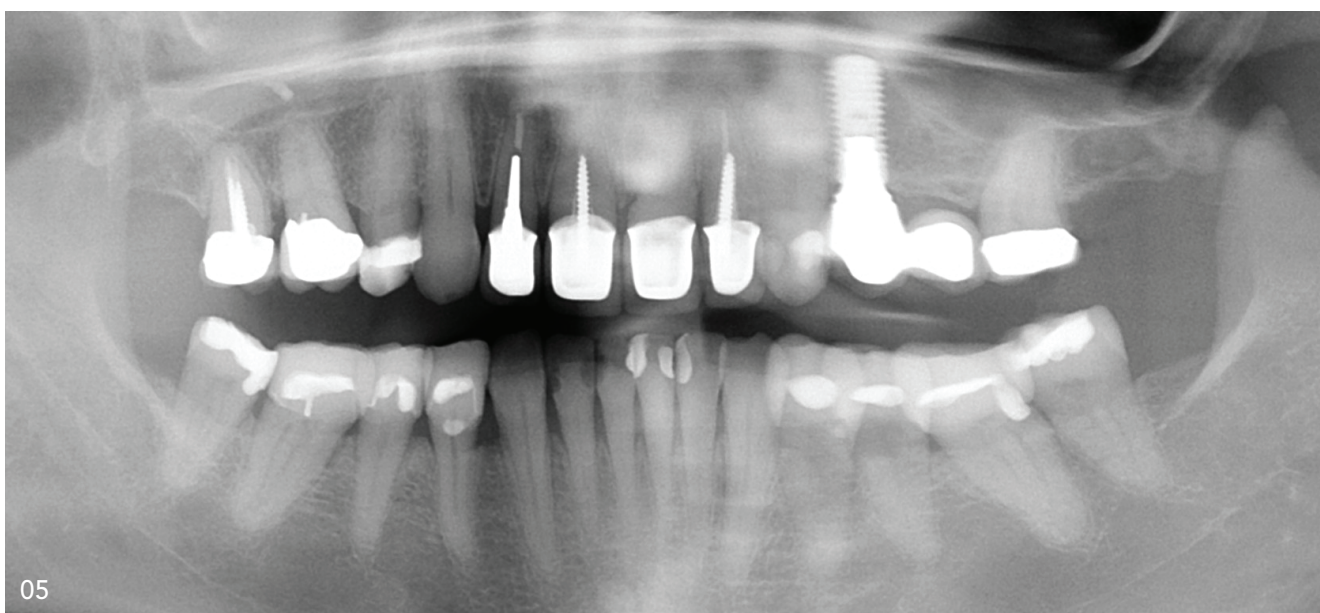
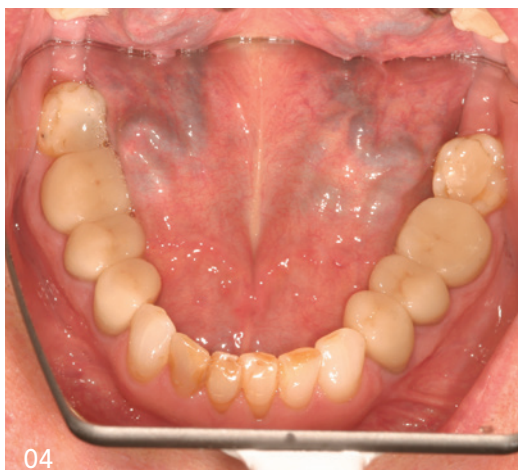
A female patient presented at our practice for holistic treatment after learning from our website about the possible connections between chronic and acute illnesses and dental health. She complained of digestive issues such as bloating and diarrhoea. Additionally, her sleep was not restful; it was superficial and restless. She also had complaints related to her liver, circulation, nerves, and hearing (tinnitus).

After a thorough clinical, radiological, and additional bioresonance examination (Figs. 1–5), a treatment plan was developed with the patient. This plan included the removal of all root canal-treated teeth, metals, titanium implants, and FDOJs (fatty degenerative osteolysis of the jawbone).

Surgical procedure

The tooth extractions were performed as atraumatically as possible to preserve the surrounding bone and prevent fractures of the root canal-treated teeth, which frequently occurs due to ankylosis or lack of elasticity. We used ultrasonic surgery techniques for this treatment (ACTEON). Ultrasonic surgery was also used to remove the titanium implants.

For the implant removal, the cortical bone around the cervical portion of the titanium implant was minimally invasively relieved. The titanium implant was then atraumatically removed using an extraction system (NeoBiotech Remover Fixture Kit). First, the abutment crown and the distal extension were removed by loosening the abutment screw. This revealed the full extent of a chronic gingivitis, in-



cluding bleeding around the abutment crown (Fig. 10). Unfortunately, the same clinical picture is observed without exception in all other cases of titanium implant removal.

In one session, the entire upper jaw was restored with ceramic implants following this procedure:

- Extraction of root canal-treated tooth 17—two-part immediate implant.
- Extraction of root canal-treated teeth 12, 11, 22—one-part immediate implants.
- Extraction of titanium implant 24—two-part immediate implant.
- Late implant 25 with a two-part immediate implant and intralift with PRF.
- FDOJ 18.

After removing all the root canal-treated teeth and the titanium implant, all the resulting alveolar sockets were immediately treated with zirconia implants (AWI, Witar). The late implant at position 25 was inserted transgingivally due to a sufficient amount of keratinised gingiva (Fig. 6).

The FDOJ at regio 18⁵ could be cleaned much more easily after the removal of root canal-treated tooth 17. The fatty bone tissue

“The advantage (of using a splint provisional) is that this technique safely eliminates excessive stress on the immediate implants [...].”

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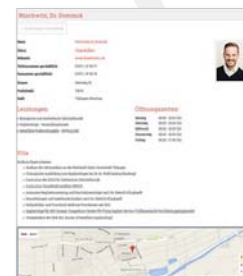
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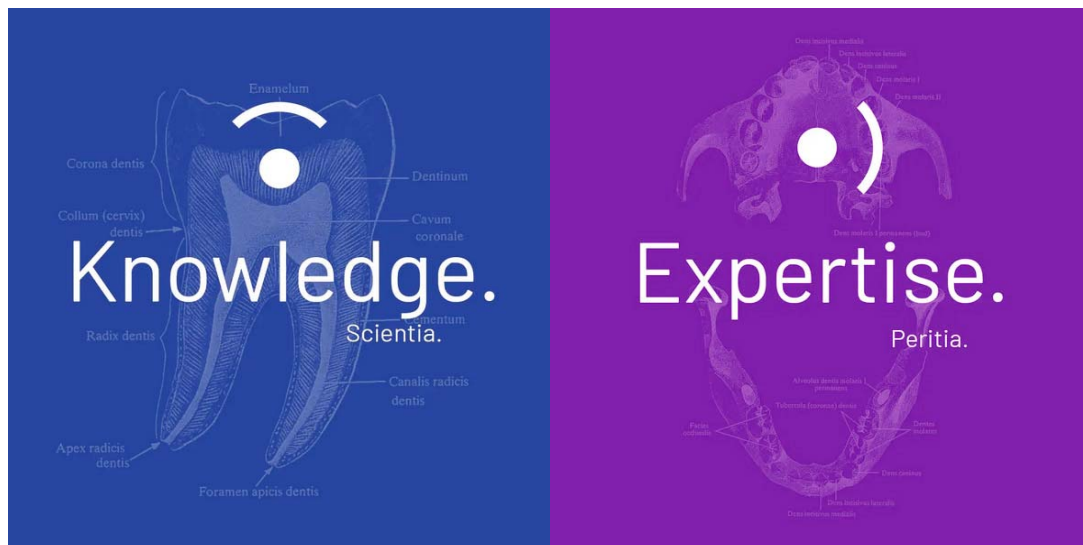
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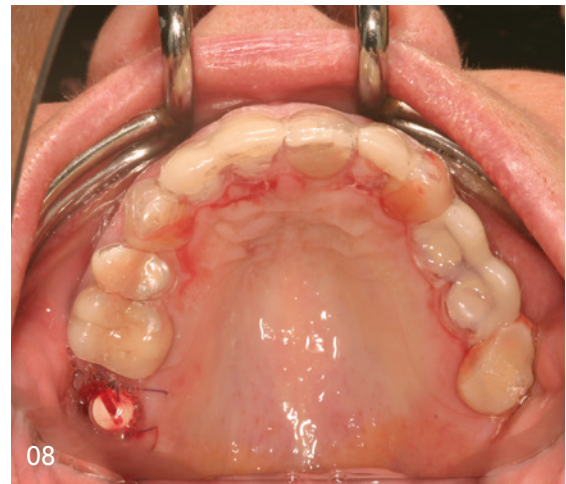
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"[...] The toxicity of root canal-treated teeth is presented in several studies [...]"



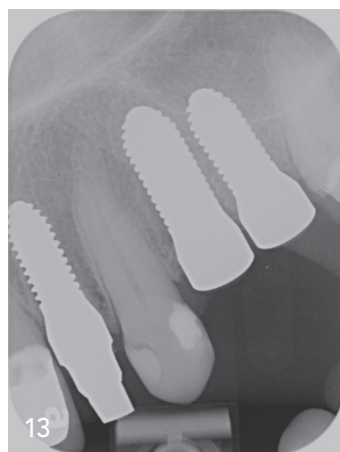
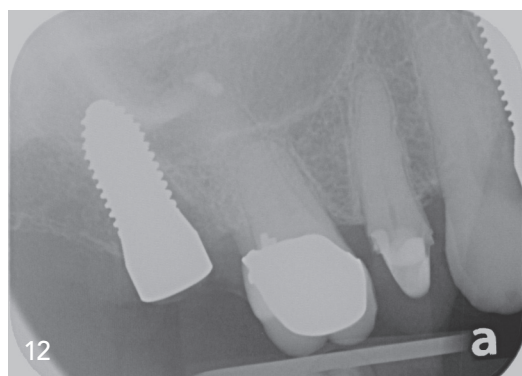
was removed as much as possible with ultrasonic surgery, and the resulting socket was then treated with ozone and PRF and sutured to be saliva-tight. The removed tissue was sent to IMD Berlin for RANTES determination. The measured RANTES value was 8.67 ng/g (Fig. 17). The reference value is 149.9 pg/ml. The conversion factor from the volume of fatty tissue in pg/ml to the weight of bone tissue in ng/g is 125. Therefore, the lab results from IMD Berlin in ng/g must be multiplied by 125 to get the RANTES expression in the FDOJ tissue sample in the correct ratio to our healthy reference value of 149.9 pg/ml – $8.67 \times 125 = 1,083.75$ pg/ml. We can see that the calculated value is increased by a factor of 7.23.

For the healing phase, the patient chose a splint provisional (Figs. 8+9). The advantage is that this technique safely eliminates excessive stress on the immediate implants during the healing phase. Another benefit of the splint provisional is a significantly better food comminution. Overall, the provisional restoration of ceramic immediate implants presents a challenge because patients cannot consciously control the load. The practitioner should thoroughly educate the patient on how to protect, care for, and clean the implants to ensure patient compliance. As postoperative medication, the patient only received Ibuprofen 600mg and mouthwash (Regeno Plasma Liquid®). It should be noted that when using ozone and PRF, traditional antibiotic coverage for three to seven days is not necessary.

Figure 11 shows the extracted root canal-treated teeth and the titanium implant. We can see the distinct brown discoloration of the teeth, which does not only come from the metal in the crowns or posts. The fetid odor of these teeth was also clearly noticeable in the operating room. The toxicity of root canal-treated teeth is presented in several studies by Dr Hans Lechner¹⁻³. Another study criti-

cally examines titanium implants and links them to silent inflammation in the jaw⁴ (Lechner, Noubissi, von Baehr).

One week after the surgery, the patient came in for a follow-up appointment (Figs. 15+16). The situation was inflammation-free and very well-healed. Furthermore, the patient reported having hardly any pain and only had to take two painkillers. One day post-surgery, the patient was completely pain-free. She managed very well with the provisional and was able to eat without difficulty.



[illegible]

"Natural teeth have the property of slightly intruding under heavy load, while implants do not."

The definitive restoration of the upper jaw took place six months post-surgery. Clearly visible is a perfectly healed clinical situation in the upper jaw (Fig. 19). The osseointegration of the implants was checked radiologically (Fig. 24) and clinically with a screw-in test. In this test, the implant is loaded up to 25 Ncm. The patient should not experience any discomfort or pain.

In the next step, the two-part implants received either a ceramic or a fiberglass abutment. For the current case, I decided to go with ceramic abutments for implants 17 and 24, and a fiberglass abutment for implant 25. The ceramic abutments were cemented with GPZ, and the fiberglass abutments were placed with composite flow. The implants were then prepared just like natural teeth (Figs. 18+19). Only red-ring diamond burs are recommended for this.

Restoration

In the upper jaw, all teeth and implants were restored with pressed ceramic crowns and veneers. Implants 12+11 and 24+25 were splinted in the final restoration to increase the load-bearing capacity of the implants. Teeth 13 and 23 received a palatal veneer to create canine guidance and thereby safely eliminate parafunctional overload on the implants and the patient's own teeth. All other teeth received a single crown (Figs. 20–22). In this case, we had a mix of implants and natural teeth in the posterior segments of both quadrants in the upper jaw. It is essential to ensure the correct occlusal load when adjusting the occlusion. Natural teeth have the property of slightly intruding under heavy load, while implants do not. This can cause a height difference, especially during clenching and grinding at night. This must be considered during prosthetic restoration to avoid failures. Finally, the patient received a Michigan splint (functional therapeutic device according to Dr Reusch) to safely prevent nocturnal overload from grinding and clenching, and at the same time, to relax the muscles and protect the temporomandibular joints.





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Summary

I have been successfully implementing the holistic treatment concept in my practice for ten years and ceramic implants have proven to maintain a main pillar of fixed dental prosthetics. This case clearly demonstrates the central role of dentistry in a patient's overall health. Zirconia implants work best as immediate implants because the existing natural alveolar socket is used very efficiently, and the patient is spared a second surgery. For me, ceramic implants are not just an alternative to titanium but are the healthiest way to replace a missing tooth.



Literature



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