

USER REPORT

Implant-supported prosthesis in upper and lower jaw with double crown technique

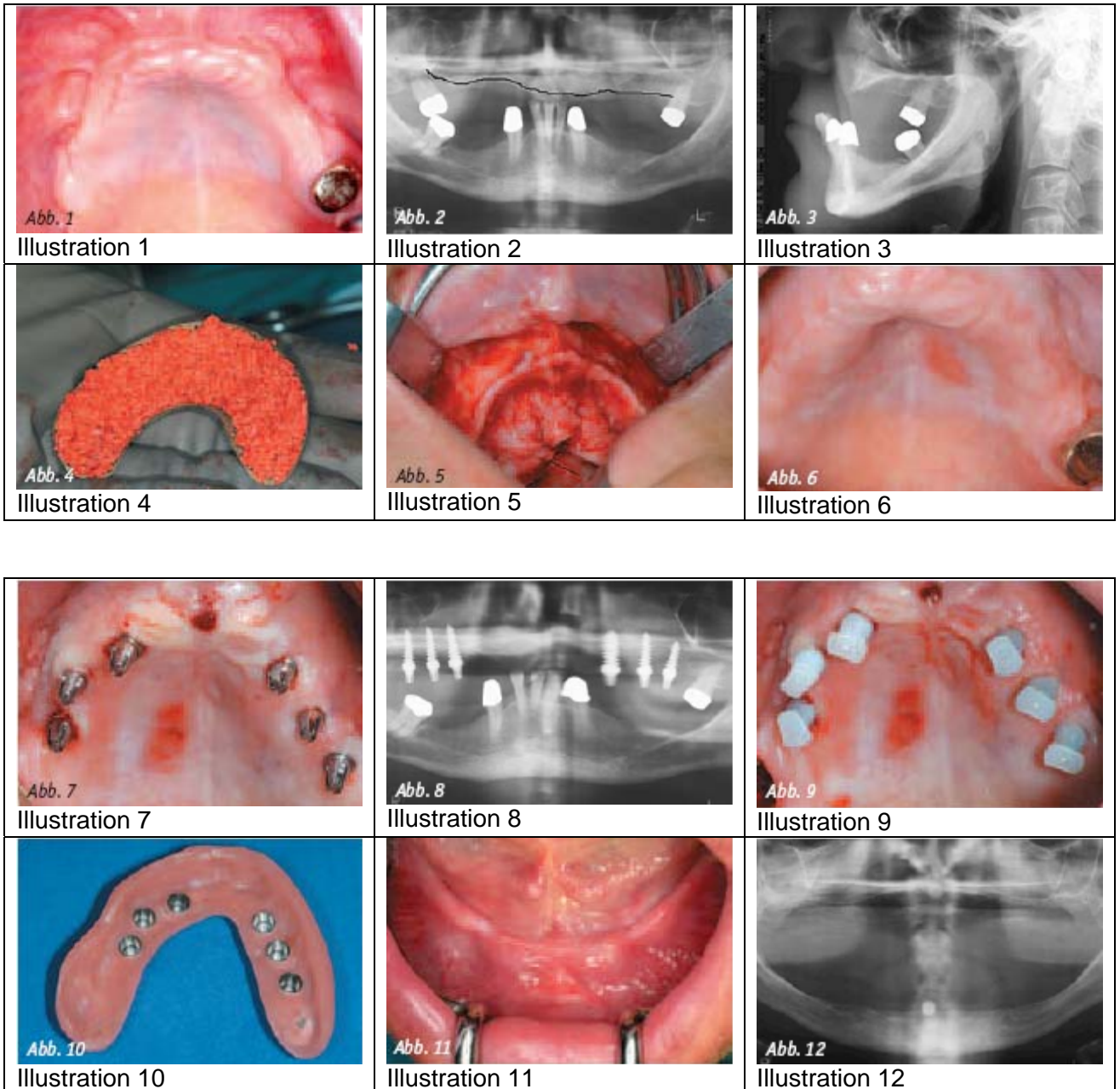
Questions often asked during a consultation on possible implants concern the duration, cost and painfulness of the treatment. In order to minimise these criteria the double crown system Q-Scope was developed in collaboration with company Triron.

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The double crowns consist of a primary crown with an angle of incline of 5 degrees and a height of 6 mm and a secondary telescope. The primary crown fits flush on the Q-implant and has a circular groove, which can take a plastic ring for increasing the friction. The secondary crown is designed as telescope without clamping friction. The procedure will be described on the bases of two case studies.

Case study I

A 52-year old patient with a toothless upper jaw (Illustration 1) presents himself wishing for a palate-free provision for the upper jaw. After an X-ray based and a clinical diagnosis it is found that the upper jaw is strongly atrophic (Illustration 2 and 3). In order to ensure a secure implant, the jaw has to be built up first. In accordance with the method usual in our clinic, the upper jaw is built up using bone from the pelvis, which is stretched with bone build-up material. For that we are using small titanium net (Mesh, Triron). This mesh is filled with bone build-up material and inserted on the atrophied bone below the mucosa (Illustration 4 and 5). Under the mesh the bone replacement mixture is left for four months to heal. After a period of approx. 8 to 10 days period of abstention, the patient is able to wear his old prosthesis during that period of time. Four months later the titanium mesh is removed and at the same time a vestibule plastic is carried out with the mucosa transplant. After the vestibule plastic has healed, the implantation is carried out (Illustration 6). According to the recommendation of the consensus conference, six implants are generally inserted in the upper jaw for removable dentures. The operation is carried out under local anaesthetic. As the anatomical situation of the bone is known from the previous operation, an opening up is not necessary in this case. Therefore the insertion starts minimally invasive with a mucosa punch (diameter 3 mm). The places for the implantation are marked using the existing prosthesis or a wax-up. In order to ensure the parallelism of all implants, the centre of the jaw, where later on there will be no implant is exactly marked and a drill hole is created using the pilot drill of the Q-system. Using the drill guides Para-Q, the first implants Region 13, 23 are inserted after corresponding drilling. The continued use of the drill guides guarantees the parallelism of the remaining implants (Illustrations 7 and 8). The Q-implant has a self-cutting thread, which has the effect of a high primary stability.

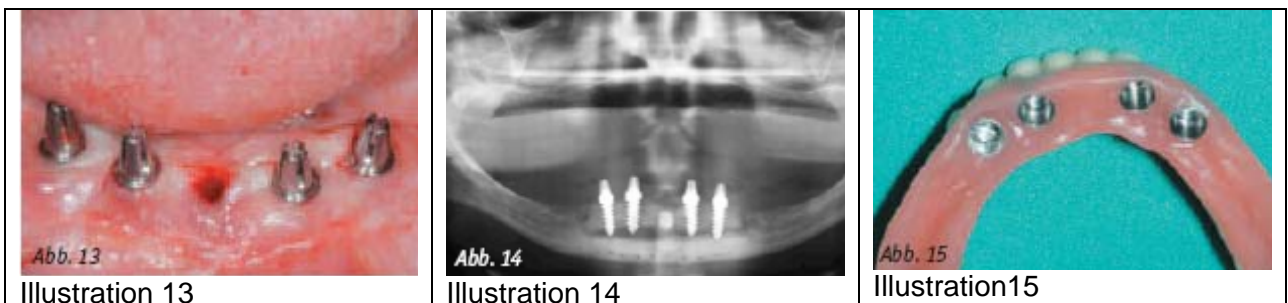


Immediately after the implantation, an impression is taken using the multi-cap plastic cap (Illustration 9). The model is created in the laboratory. The Q-scope is then placed on top of the laboratory implants and the position is checked on the parallelism meter. As the cone has an incline of 5 degrees, minor deviations in the positions of the implants are tolerated. For deviations larger than 5 degrees, eccentric Q-scopes will be available soon. These will be aligned in parallel on the model and fixated with a plastic transfer key. Via the primary and secondary crowns the laboratory will produce a metal frame. In the patient, the primary crowns will be permanently inserted using a permanent cement (e.g. Nimtec) and will then be insulated using Vaseline. Then the secondary crowns are inserted in the mouth on top of the primary crowns and glued into the frame without tension. The registration of the occlusion is carried out via the frame. This is followed by

the steps: Wax insertion test, checking of the occlusion and final finishing of the prosthetic (Illustration 10). The second clinical case shows the insertion of four double crowns into an existing prosthesis. In the lower jaw four implants are sufficient, in order to ensure stable anchoring. If only two implants are inserted then the aforementioned plastic ring is necessary in order to achieve the necessary stability.

Case Study II

A 60-year old patient [*female*] presents herself with a highly atrophic, toothless lower jaw (Illustration 11 and 12). In spite of intensive diagnostic the patient it is found that the patient is suffering from a tendency to bleeding that was not diagnosed. Alio loco an implantation had already been carried out for the patient twice. After a short period of time the implants were lost again. The patient is presenting herself with an atrophied lower jaw. Actually, the base of the mouth stands higher than the level of the lower jaw. An attached gingival can only be recognised in marginal limits. A distraction is carried out for this patient in the usual way, using the Q-MultiTractor. After the conclusion of the distraction four implants are inserted intra-foramina (Illustrations 13 and 14). Due to the previous two early losses, the immediate provision and immediate loading respectively is waived. After a healing period of four weeks the patient is provisioned in such way that the existing prosthesis is ground out and that after the bonding of the primary crowns, the secondary crowns are worked into the existing prosthesis via a fixation impression (Illustration 15). The advantages of the Q-scope system on the one hand are that the cost is comparable with that of the provision with a ball anchoring system. However, in most cases the stability of the prosthesis is considerably better with a telescoping prosthesis. Through the application of the Para-Q system a sufficiently secure parallelism o the implants can be achieved. Thus the prosthesis acts as a secondary blocking of the implants. As Q-implants achieve a high degree of primary stability, the primary blocking is not necessary in the case of an immediate provision, if the Q-Scope system is used at the same time. Particular mention, however, deserves the ability to maintain good hygiene as well as the fact of a cost effective way to change the prosthesis if necessary. A critical note regarding the system is that the double crowns are still too massive and in some cases cannot be used in the case of a large inter-occlusal distance. This is already taken care of by company Trinon and in the improved series, which is already available.



Summary

In summary it can be said that the double crown system introduced here, makes it possible to create cost-effective, demanding, removable and implant-supported provisions in the upper jaw as well as in the lower jaw.

The literature can be requested from the author.

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