

USER REPORT

Immediate loading in the implantology with a single-stage implant

Case study of the planning and provision of an upper jaw

In the event of implantological rehabilitation, the desire of the patient is in conflict with the medical reality. In our society today, the claim for immediate solutions and the highest quality plus an economic and rational way of working at the same time is the demanded goal.

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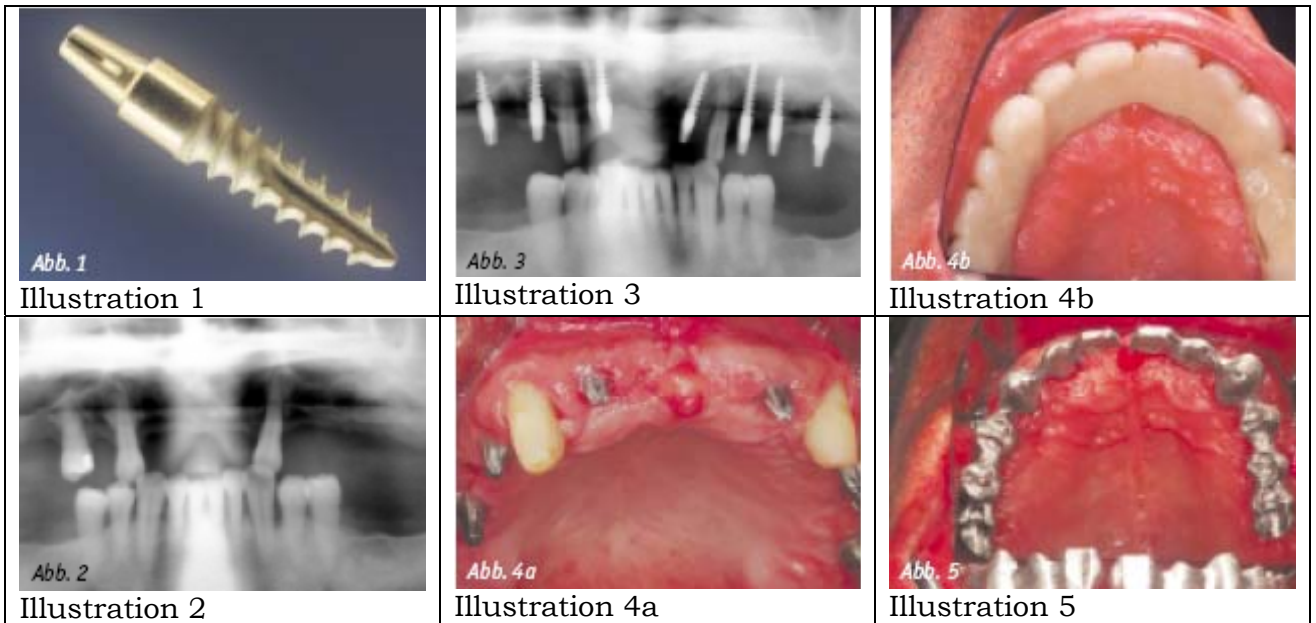
The following case study introduces a 48-year old patient, who lost all teeth in his upper jaw, except tooth 13 and 23, for periodontal-pathogenic reasons. In this case three possibilities were the main aspects of the planning: A conservative provision with cover denture prosthesis, implant-supported hybrid prosthesis with preceding temporary provisional arrangement and an implant-supported fixed immediate provision, using a single-stage implant. Due to the great pressure of his suffering the patient decided in favour of the third possibility.

Material

The Q implant system that is used, is an enossal single-stage screw implant made of pure titanium, developed by the company Trinon / Karlsruhe and Dr. Kurrek / Ratingen. Technically the system favours trans-gingival healing and immediate loading. Advantages of the system of a single-stage implant is the trans-gingival modelling of the gingiva during the healing phase, in connection with micro-biological hygiene, the economy of the implant and the rational bone preparation, because only two bone drills are required and because the implant has a self-cutting screw thread. No extensive implant treatments are necessary. Due to the progressive and expanding design of the thread, primary stability of the implant is achieved even in cases of bad bone quality (D3, D4) (Illustration 1).

Method

In the case of this 48-year old patient only the dentes canine could be retained. Tooth 15 (Illustration 2) could not be retained for periodontal reasons. The anatomical situation made a minimally invasive sinus lift in Region 14 and 16 necessary. Two implants with a diameter of 3.5 mm could be inserted there. Due to the expanding thread a residual bone height up to the sinus of approx. 4-6 mm was sufficient. The frontal teeth area Region 11 and 12 showed an intra-operative bone situation of Class D3 and D4 with narrow alveolar limbus, so that bone spreading was carried out for the regular implantation.



This was followed by the implantation of two implants with a diameter of 3.5 mm and a length of 12 mm. The implantation in Region 24, 25 and 27 was without problems. In order to achieve a sufficient degree of primary stability, a 4.5 mm implant was inserted in Region 27 after a pilot drill hole had been created with a diameter of 3.5 mm. Due to the design of the thread and bone condensation using the Q-Tom (Trinon), regular primary stability could be achieved even in strongly spongy bones of class D4. Using bone condensation of the implant bed it was possible to avoid maxillary sinus perforations and to use almost the maximum bone height (Illustration 3). Post-operatively this was followed by the same day insertion of a temporary bridge produced by the chair side (Illustration 4). Functionally, a bi-balanced laterotrusion was taken care of with regard to the provisional arrangement. An impression was taken after 5 weeks and five days later the frame was tried on. The problem of parallelism was adjusted through individual grinding of the implant posts of the front teeth implants (Illustration 5). Six weeks after the operation the definitive bridge provision was inserted (Illustration 6).



Illustration 6

Discussion

For the doctor working in the field of implantology, the stomato-gnathic rehabilitation upon the loss of the support zones poses the question of the temporary provision during the phase of the osteointegration of the implants. The available options range from extensive, removable provisional arrangements via provisional implants to immediate loading. The possibility of immediate loading is the most comfortable for the patient. It ensures the fast stomato-gnathic integration due to delicate dimensions, aesthetic claim and the lack of the covering of the palate in the upper jaw. Biologically, the earlier functional stress results in loading for the bones. Insufficient bone quality is compensated by the implant design in the form of an expanding screw. The amount of bone still seems to be a limiting factor. In our case described here the work was minimally invasive, in order to keep post-operative pain as little as possible. There is the question of a long-term success and the absolutely necessary number of implants to be inserted, in order to guarantee an implantological-prosthetic success.

The list of literature can be requested at the editorial office.

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