The need most felt by patients undergoing oral rehabilitation with osseointegrated implants in the frontal areas is certainly getting immediate aesthetic recovery of the edentulous area. The replacement with temporary prostheses, often removable, is difficult to reconcile with the expectations of the patients who contact an implantologist; an alternative to such provisional remedies is represented by immediate loading on the implants newly placed. Starting from the concept that the implant primary stability, in a good density bone, is never surpassed by the stability obtained after an appropriate waiting time to achieve osseointegration (1) and that the implant shape and bone-implant contact surface (2) are of the greatest importance, the practice to immediately load the fixture newly inserted has been spreading increasingly. Hundreds of studies supporting this method have been published since the early 90s (3 4 5), which especially take into account rehabilitation in the lower arches, but some of them support immediate loading even in the upper arch (6 7 8). Supported by these experiences and by the introduction of new implant shapes, which are much more biosimilar, (conical implants similar to the anatomical shape of tooth roots) and implant surfaces, which are treated (micro sandblasting, oxidation) (9) to become bone friendly, immediate loading has spread, as well as when several teeth are missing (when rigid splinting between the implants appears to be an important factor for the success in rehabilitation over time) and also when a single tooth is missing in the maxillary bone (10), which has always been considered not very suitable to this purpose. There

The author shows what advantages can derive from Duravit immediate loading implant method. An analysis on the surgical technique is first carried out using preparation drills and manual mounters, which greatly reduce bone stress and allow atraumatic surgery. Then follows the description of the characteristics of the prosthetic accessories allowing immediate loading without any risks. This method includes, in fact, fiber glass prosthetic abutments allowing to load the implant immediately and avoiding the adverse effects of lateral overloading.
for over 15 years Duravit implant system (13) has been providing implantologists with an atraumatic, simple and complete method even for prosthetic solutions. Always up to date, it now provides a cylindrical-conical triple-helix implant (fig. 1).

Ideal for post-extraction operations and for the placement of immediate load prostheses in the upper maxillary bone due to the compaction system. The implant is supplied in lengths of 8, 10, 12 and 14 mm and diameters of 3.5, 4.0, 4.5 and 5 mm and is equipped with a cone of 1.5 mm with an angle of 2.5° and a hexagon below, 1.5 mm in height. The presence of the hexagon makes it easy to locate the correct position of the implant abutment; by means of Morse cone action the upper cone eliminates the micro rotations which would tend to cause the loosening of the through screw. The implant surface, titanium grade 4, is subjected to dual acidification with microporosity between 3 and 10 microns, suited to the anatomic-functional units of the bone; this surface is thermo-chemically oxidised and cold plasma treated in order to ensure absolute biocompatibility. The triple-helix threads reduce compressive stress during implant insertion and they compact bone trabeculae thus significantly increasing primary stability, and also increasing the regenerative capacity and speed of bone trabeculae. We have mentioned the need for an atraumatic operation especially in view of immediate load rehabilitation; as well as in absolute respect for soft tissues, atraumatic action should be an essential feature especially in bone treatment during preparation of the surgical alveolus.

Duravit implant system allows to carry out perfectly the difficult preparation of sites for cylindrical-conical implants and subsequent implant insertion. This technique makes use of a pilot drill, one for each implant length, and a preparation drill for the implant collar. After using these two drills, we begin the
preparation of the implant seating by fitting the compactor to a hand tool allowing it to advance without causing stress to the bone. Manual compaction offers the advantage of avoiding the use of an implant micromotor. In fact, despite setting a correct torque value on the mechanical tool, we still have a continuous advance of the drill for the entire working time; this method involves, especially in the case of conical implants, a continuous compressive stress on the alveolar wall. Manual preparation is done, however, with small and discontinuous screwing movements, which allow bone elastic release during the pauses in the compacting action. Manual compaction allows the operator to directly assess the implant future primary stability. During this phase we may also choose (according to the tactile response to compaction) the implant diameter allowing us to have the best stability. Even the insertion of the implant is performed using the same technique and at this stage, too, Duravit implant procedure prevents one of the drawbacks mostly encountered in conical implant surgery: the implant mechanical seating (normally, implants are self-threading) subjects the whole bone-implant contact surface to compressive stress. Such stress is constant and lasts for the entire duration of implant placement. This drawback is present in cylindrical implants which, during placement, determine the “tapping” size of subsequent threads; in this situation the maximum stress point is located at the implant apex where, sometimes, we find areas with aseptic necrosis radiographically similar to apical granulomas. In the positioning of cylindrical-conical triple-helix implants each implant section of the cone inserted has a larger diameter than the previous one, therefore the alveolar lumen is continuously adjusted to the different sizes while the cylindrical triple helix component in the upper part of the collar ensures improved sealing in the collar area, which is associated to 1/3 of the trauma normally caused by cylindrical implants alone. Complete manual insertion of the implant prevents compressive stress, as in the case of tapping, giving time to the bone to have elastic release for a considerable time; the use of a straight positioner, rather than a torque ratchet allows direct sensing of the degree of compression we are applying and, consequently, we can adjust the force to anatomical conditions. These peculiarities of Duravit method make it possible to eliminate one of the most frequent causes of failure in the use of conical implants, that is, the early loss (before loading) of the implants due to bone aseptic necrosis on the entire implant contact surface. Given the implant characteristics we will see the prosthetic accessories necessary to perform the “immediate aesthetic loading” and the advantages it offers.

AESTHETIC IMMEDIATE LOADING, CLINICAL METHODS

As mentioned earlier, in the upper maxillary bone the quality of the bone usually makes immediate functional loading more difficult and less predictable; also primary stability, which does not tend to vary in a compact bone, can be increased if the implant is not loaded functionally. Duravit implant method ensures the possibility of fitting a prosthesis to the implant with absolutely tolerable loading using fiber glass prosthetic abutments. After carefully selecting the patient (fig. 1) we carry out atraumatic surgery, as described above, taking care to position the implant in a manner favourable to prosthetic rehabilitation (fig. 2 and 4). The insertion of the implant in the correct position is indispensable for an immediate aesthetic rehabilitation also in order to reduce chair time. In a previous session we had made a temporary crown of the appropriate colour and an impression taking transparent resin mask. Impression taking by means of a mask is important to avoid contamination of the implant site by impression materials. First of all the fiber glass abutment is tried and adjusted (fig. 5).
2 The patient with a Maryland bridge replacing no. 22.

3 After soft tissue atraumatic surgery we prepare the surgical alveolus using manual tools.

4 The implant has been inserted.

5 The fiber glass abutment is adjusted to the arch.

6 The mask is adjusted and fixed to the abutment.

7 The plaster model is adjusted to the mask-abutment unit.
The fiber glass abutment is prepared on the model.

Then we apply the mask of thermoplastic material previously prepared in the laboratory and we fix the fiber glass abutment to the mask using a light-cured composite (fig. 6). In this way we obtain a precise abutment position without having to bring the implant site into contact with impression materials, which could compromise optimal tissue healing. Then we prepare the model adjusting it to the mask-abutment unit after positioning a laboratory analogue (fig. 7). In this way we have precise positioning of the analogue and the waiting time is reduced as it is not necessary to cast the plaster model and prepare the articulator. In fact, all of these steps have already been completed before the preparation of the implant. At this point the technician prepares and refines the fiber glass abutment adapting it properly to the anatomy of the patient (fig. 8).

He/she then uses the temporary crown previously prepared rebasing it on the prosthetic abutment. Also this operation is performed in the laboratory and not in the patient’s mouth, thus avoiding implant site contamination and providing us with a temporary crown very “natural” in appearance (fig. 9).

We now go back to the patient, who is in the chair with the healing screw inserted to prevent the collapse of the soft tissues, and we try the prosthesis making any necessary corrections. The fiber glass abutment is then screwed and the prosthesis is cemented; the patient may now be dismissed (fig. 10).

A check after ten days shows soft tissues with good adherence, so we can expect a proper healing process. (fig. 11)

The post-operative course is totally uneventful. Completely atraumatic soft tissue and hard tissue surgery allows the resumption of normal relationships and working life on the same day. The patient is obviously subjected to therapy with amoxicillin 1 g twice daily for a total of 5 days, starting from the day preceding treatment. In most cases, a pain relief therapy is not necessary, while it is advisable to use chlorhexidine gel to be applied for long periods in the surgical area. The patient is instructed to avoid excessive loading during chewing and he/she is subjected to monthly checks. The expectation of osseointegration at this point follows the general rules. The patient does not feel the need to reduce time because the aesthetic and functional solution provided is almost identical to the final solution. After six months, the crown and the fiber glass abutment are removed, we evaluate the soft tissues maturation and we proceed to impression taking (fig. 12).

Duravit method ensures the possibility of performing impression taking with a pull-off transfer (fig 13), which makes this operation...
**IMMEDIATE AESTHETIC LOADING ON DURAVIT CONICAL IMPLANT**

10 The prosthesis has been cemented.

11 Ten days after surgery proper soft tissue healing can be observed.

12 The excellent maturation of the soft tissues.

13 The pull-off transfer for impression taking.

14 Casting check.

15 Casting check.
extremely easy, even for the patient. The accuracy is comparable to impression taking with the transfer screwed, which is always an option of the method. The following steps are based on the procedures of every implant method up to the making of the crown. (fig.14-15).

CONCLUSIONS
The use of a completely atraumatic surgical technique achievable with Duravita method and specifically with the site preparation and implant placement by means of hand tools, provides excellent predictability of implant results. However, the possibility of obtaining immediate aesthetic and partially functional loading, which is also predictable even if made in the upper arch, is related to the presence of fiber glass abutments in this method, which can be used while placing the implant. The fiber glass abutments allow “elastic” loading on the implant, which in this way is not being stressed as with a titanium abutment. The masticatory load is partly absorbed by the resin temporary crown and in part by the abutment, but much more important is the fact that it is neutralised by the elasticity of the fiber glass abutment, especially transverse loading, which generally causes implant failure in immediate loading methods. The long-term results allow to classify the method described as one of the safest in fulfilling the aesthetic and functional needs of the edentulous patient even when we have to make a rehabilitation in the upper arch. The above also applies in the case of several teeth missing, and moreover in this situation the possibility of splinting the implants makes surgery even more predictable.

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