THE USE OF DOUBLE CROWNS IN CLINICAL PRACTICE

The use of double crowns allows a more comfortable prosthesis to be created for the patient and these results are obtained without great disadvantages in terms of time or costs.

Of the several alternatives for prosthetic work that are often taken into consideration in various levels of oral rehabilitation, the most infrequently used is that of double crowns: this may be related to the false opinion that this type of prosthesis requires exceptional technical and core build-up knowledge and skills. In fact, the use of prostheses that in some way involve double crowns requires only a slightly higher undertaking from the dental surgeon and the prosthodontist than the one commonly found. It also offers a series of advantages that repay both the dentist and the patient for the greater amount of work. Various types of prostheses involving double crowns will be looked at, to show how these types of prostheses are extremely flexible for daily use and how it is relatively simple to create them, allowing them to become routine interventions.

CLASSIFICATION
In common usage, the term telescopic is intended to indicate both actual telescopic crowns and conoscopic ones: it is necessary to clarify the differences that exist between these two types of double crowns, as they are used differently in clinical practice.

Telescopic (or conometric) crowns instead are only linked between primary and secondary crowns at the end part.

From a practical point of view, telescopic crowns are more complicated as they require preparation of the core that produces parallel abutments: this makes laboratory work simpler; in fact, the prosthodontist must produce crowns with parallel walls that have a tolerance of about 3°: this will then entail an obligatory insertion route between the primary and secondary, making it extremely precise. The careful preparation and reaming provide the possibility of creating fixed prostheses on double crowns with endless advantages that will become more apparent during the description of various clinical cases.
1-2 Treatment with telescopic crowns allowed a fixed prosthesis to be created.

3 The overdenture carries secondary crowns and the remaining teeth.

4 The additional grip (Pressomatic attachment).

5-6 The use of double crowns in a prosthesis with denture skeleton including hooks.
The use of double crowns combined with a front fixation.

CLINICAL CASES
The patient in question suffered from chronic periodontopathy with 2nd and 3rd degree mobility; the patient expressly wished to maintain his own teeth for as long as possible and did not want to resort to removable dentures. This was only possible by blocking after periodontal treatment. Creating a fixed prosthesis in the dental arch in question, however, created some risks. The first was having to entrust the patient with prosthesis maintenance, and consequently with his periodontium. Domestic hygiene work that can be carried out on a conventional fixed prosthesis is in fact rather limited. The second risk was having to consider the possibility of losing a bridge abutment, in spite of all possible precautions taken.

In the best scenario under these conditions, it would have been necessary to dismantle the block and recover a part of it, repairing it as far as possible. Treatment with telescopic crowns (figures 1 and 2) then eliminated this disadvantage, thus allowing a fixed prosthesis to be created. A double crown allows optimal control and maintenance of the prosthesis' abutments and even if one should disappear, the secondary structure would not suffer, as the rational redistribution of the masticatory load on the arch would allow the patient to continue to wear his prosthesis anchored to the still existing abutments. The review sessions also allow for any maintenance of the periodontium to be carried out, by simply removing the secondary structure and working on the cores covered only by the primary crowns.

The use of conoscopic crowns is instead advisable for the creation of removable prostheses. In this case too, the crowns allow for precise positioning of the overdenture in addition to excellent grip and stability due to the pairing of primary and secondary crowns.

Overdenture fixation can also be improved by fitting fixation attachments to the prostheses, such as the ones called Pressomatic.

With the help of clinical examples, we can see the advantages of overdentures on double crowns. In the first clinical case, the only two surviving elements in the arch were covered with primary crowns; the overdenture holds both secondary crowns and the remaining dental elements (figure 3). An additional fixation element has been placed on one of the secondary crowns (Pressomatic attachment, figure 4). The removable prosthesis is extremely stable and precise; proprioceptive sensitivity is
also maintained, which favours correct masticatory movements.
The second clinical example shows the use of double crowns in a case where, for solely financial reasons, the patient had opted for rehabilitation using a denture skeleton with hooks. The presence of one tooth to be treated endodontically and then covered brought about the idea of creating a prosthesis that combines simplicity with the low cost of a skeleton, stability, easy insertion and the anti-sinking action of double crowns (figures 5 and 6).
In addition there is almost no rotation of the skeleton, thanks to the presence of the conometric crown.
The third clinical case shows the use of a double crown combined with front fixation (figures 7 and 8). In this case, the advantages in using this type of solution can be summarised in the posterior stabilisation created by the skeleton, in the guide for inserting the latter, in the centring of anterior precision attachments (for this reason, a telescopic and not a conoscopic crown was used, figure 9), and in the anti-sinking function of the mobile part.
The last clinical example shows the use of a double posterior crown combined with button attachments in the front sectors (figure 10).
In the case in question one of these attachments is anchored to a core abutment cemented into the radicular canal of 1.3. The other is welded onto the prosthesis abutment of an osseointegrated implant (Duravit). In this case too, the double crown makes front anchor points easy to find and avoids posterior sinking of the mobile prosthesis, with consequent torque and traction loads on the sensitive anterior attachments, especially on the implant one.

CONCLUSIONS
The variety of clinical examples could be continued, which proves the extreme flexibility of the method, which would serve to support the statements made in the introduction.
The use of double crowns allows a more comfortable prosthesis to be created for the patient and these results are obtained without great disadvantages in terms of time or costs.
Naturally this research does not intend to be a technical treatment of how it is possible to create prostheses using double crowns, but simply an invitation to analyse rehabilitation treatment where double crowns are foreseen, with the certainty of obtaining extremely satisfactory clinical results.

KEY WORDS
Double crowns, conometric prosthesis, conoscopic prosthesis.
primary implant stability. The end part of the thread comprises two shaped milling cuts opposite each other and a flat base that increases the resistance capacity, lateral load distribution and compression. The mainly-square implant head was studied for correct implant positioning, for better stabilization and more efficient lateral load distribution. Most of the implant head comprises round pin-bevelling, at a 45° angle that fills a dual role: the lower part seals the implant site while the upper part provides a wider support for the core abutment, thus improving stabilisation of the prosthesis and its final aesthetic appearance. The healing cap, made from non-toxic material, can be modelled externally, in order to allow it to be adapted to the mucosa. The transfer abutment in the lower area negatively reproduces the upper part of the implant head structural shape, thus allowing the transfer to be positioned precisely, using the precision die, on the plaster model and obtaining perfectly parallel laboratory abutments.