

# Micro castable attachments:

Application on removable anchored bar prosthesis



Carlo Borromeo

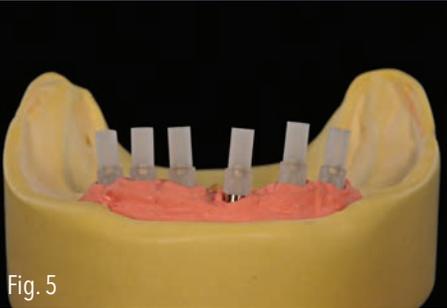
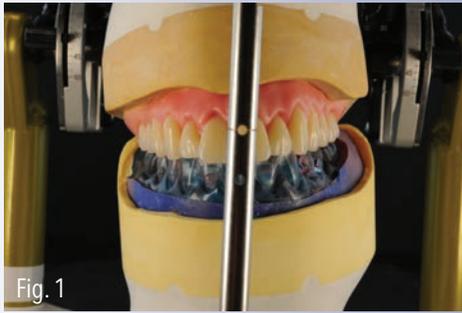


Fig. 1 — Set up model in position by using the articulator.

Fig. 2 — Vestibular and tongue silicone masks

Fig. 3 — Tongue mask vision

Fig. 4 — Vestibular tongue vision

Fig. 5 — Castable components screwed on the analogues



Fig. 6 — Bar construction by using acrylic resin. Connection of the castable parts

Fig. 7 — Vestibular mask used to verify spaces and bar position

Fig. 8 — Same procedure using the tongue mask.

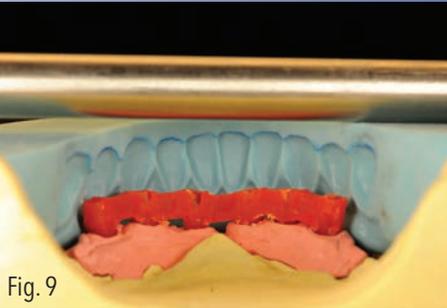
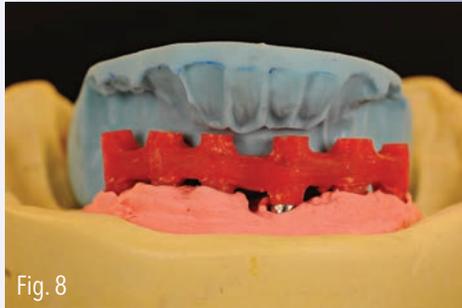


Fig. 9 — Model setting up after the structure regulation by using the masks. Insertion plans verification by using the parallelogram.

Nowadays dentists have to deal with patients having more and more detailed requests. Owing to the image of the traditional removable prosthesis, we know that patients increasingly ask for fixed prosthesis. But not always this could be the best solution. Some factors could affect the operational decisions of the dental team such as: implant positions, vertical dimensions, the type of bone to work on, previous prosthesis still present in the mouth

and some more. It's always important involving the patient explaining pro and cons of a given prosthetic project. Aesthetics and functionality are the two objectives to be fulfilled and only through a very good cooperation between dentist, dental technician and patient best results can be achieved. In this paper, the dental technician Carlo Borromeo will explain the procedure followed on a patient submitted to the insertion of 6 implants in the lower jaw. The proximity between implants

and their position leads to discard the Toronto option. So the solution is opting for a bar with superstructure and mobile denture anchored using low-dimensional castable attachments proceeding with the traditional casting technique.

## Work Phases

Patient aged 65 years wearing an upper removable prosthesis and an inferior Toronto. She travelled to remake

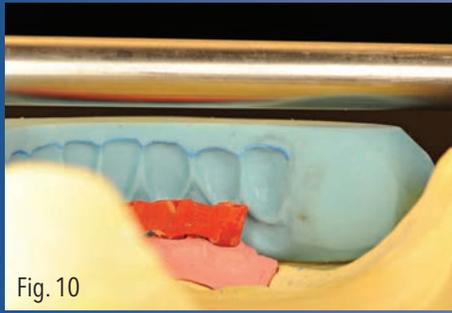


Fig. 10

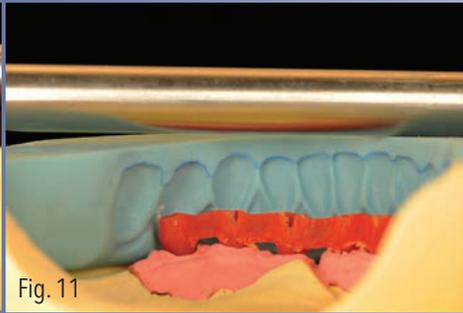


Fig. 11



Fig. 12



Fig. 13



Fig. 14

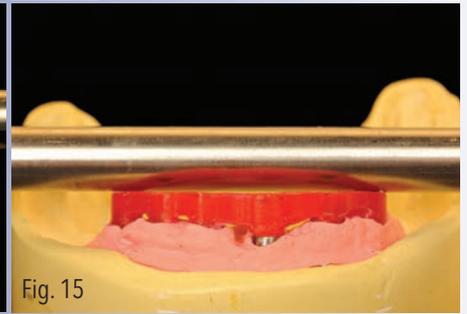


Fig. 15

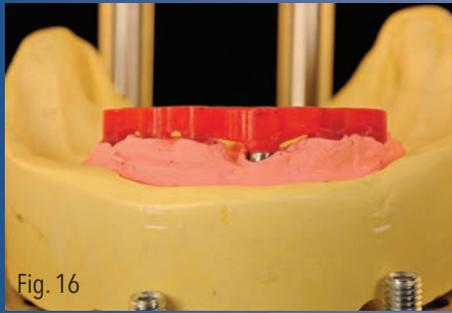


Fig. 16

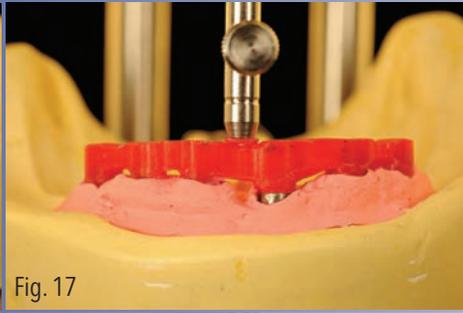


Fig. 17

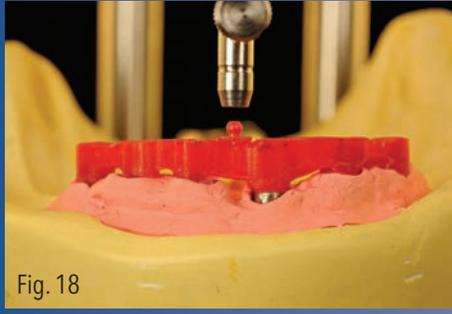


Fig. 18

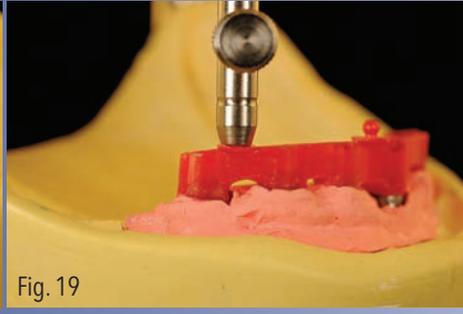


Fig. 19

Fig. 10 — Parallelism verification of the front and back teeth.

Fig. 11 — Verification of the parallelism by using the mask: area number 3.

Fig. 12 — Verification of the model position in area number 4

Fig. 13 — Anterior analysis

Fig. 14 — Posterior analysis

Fig. 15 — Following to the 2° milling procedure we regulate the structure and controlled the plans.

Fig. 16 — Model setting up on the parallelometer base

Fig. 17 — Attachments setting up in position

Fig. 18 — After connecting the castable OT CAP to the structure we elevate the parallelometer component.

Fig. 19 — We set the attachment in the right part of the structure following the same procedure

the prosthesis, complaining about all the problems observed (phonetic, reduced number of teeth in the upper quadrants).

The sample has come to the laboratory with implants already inserted and thus without the possibility of a pre-implant case evaluation. When the studying phase of the model has started, it has been

noticed that implants were placed very close together and all in the front area. The possibility of re-doing a Toronto with longer extensions was discarded in order to avoid a cantilever too long in posterior areas. It is considered more appropriate to opt for a bar over structure and an anchored removable prosthesis. After monitoring (by the colleague who works with him since many years) and after verifying esthetic

and functionality, the final tissue and implant-impression was taken over through an extra set up session. Then the model has been set up for the second time to verify centric dimension. Vestibular and lingual silicon masks are built with the analogue set on the model to guide the work until the end. As said before, the choice was producing a bar on 6 implants to anchor over a superstructure a total

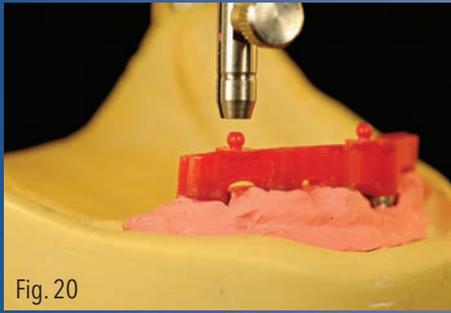


Fig. 20

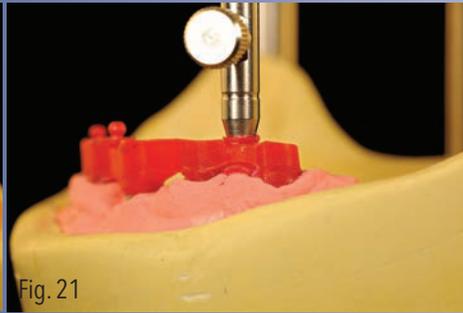


Fig. 21

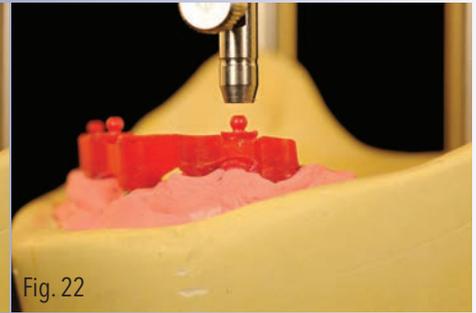


Fig. 22

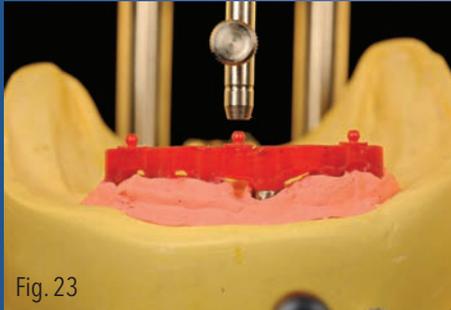


Fig. 23

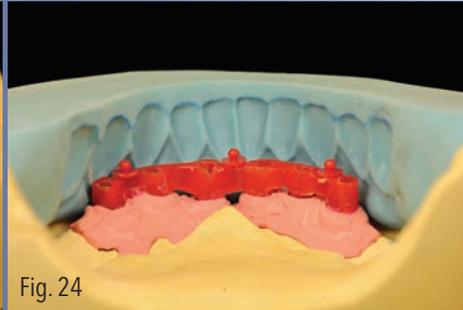


Fig. 24

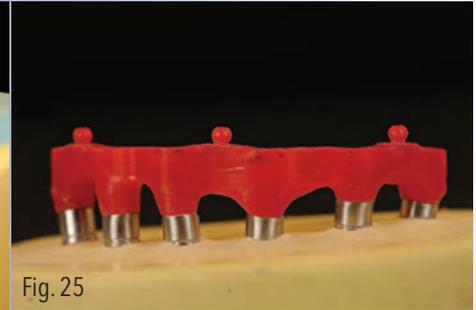


Fig. 25

Fig. 20 — Tool removal in the right part

Fig. 21 — Attachment setting up in the left part of the structure

Fig. 22 — Tool removal in the left part

Fig. 23 — Attachments set up verification

Fig. 24 — Attachment setting up and spaces control by using the masks

Fig. 25 — Structure modeling on the model and passive features testing

Fig. 26 — Pivot casting procedure

Fig. 27 — Pivot setting up

Fig. 28 — Fusion

Fig. 29 — Fusion



Fig. 26

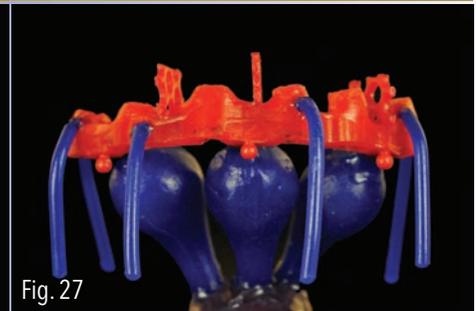


Fig. 27



Fig. 28



Fig. 29

removable prosthesis. The proximity between implants does not allow the insertion of connections such as bars or attachments of a certain dimension. We proceed with the insertion of 3 spherical attachments (1,8 mm OT CAP MICRO). The attachments are set in positions between the implants, 2 in the back and 1 in the front areas,

which resulted to be more indicative, compared to the previous setting up. The procedure is complete with a chrome cobalt fusion. Fig. 1 to 32 showing the step-by-step procedure.

## Conclusion

As we mentioned before today many

patients have precise requests, which are often difficult to realize considering the situation in the mouth. A valid dental team has to inform the patient regarding the most suitable prosthesis procedure. This particular protocol saw the application of a standard procedure with attachments obtaining a high quality chrome cobalt bar



Fig. 30



Fig. 31



Fig. 32

Fig. 30 — Structure after modeling and pivots removal. According to the quality of the fusion the sphere's attachments will be equally precise. Evaluating the covering expansion will be important in the procedure together with choosing the proper burs for modeling and polishing in order not lose the sphere's diameters.

Fig. 31 — Structure polishing and control on the master model

Fig. 32 — Final polishing. If the procedure was correct we will have a perfect result in terms of functionality and aesthetic by following precise and practical working phases.

for the lower prosthesis. The entire application was completed in a relevant short period of time with a considerable reduced price. 

**About the author:**

Carlo Borromeo started his dental laboratory in 1988 where he specialized in the construction of prosthesis for implants. He is an expert of

merchandise studies, ceramic and structures on implants. He takes part in lot of courses and conferences & authors numerous articles.

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