Edentulism is a condition which significantly affects not only the masticatory function, but also important aspects of the patients’ social life. Today, the edentulous patient’s rehabilitation can be tackled with different prosthetic solutions, and implants are a very effective tool in this sense, although the implant rehabilitation process is often complex and requires financial resources not available to everyone. In this respect, tissue conditioners may be useful to the clinician to improve the adjusting conditions to preexisting prostheses during the longer rehabilitation processes or for their functional restoration temporarily avoiding the construction of new rehabilitations. This case report describes the clinical and laboratory steps followed for the functional restoration of an edentulous patient who had two incongruous complete prosthetic rehabilitations.
CLINICAL CASE
A 74 years old patient edentulous in both arches presented to us complaining about many difficulties in managing his approx. 8 year old prostheses. During the interview in the first visit he complained about the need to use his dentures with a high amount of adhesive, without achieving a satisfactory stability level. The patient ruled out the possibility of implants, due to economic and general health reasons (diabetes and hypertension).

The Treatment plan was to restore the old dentures to give functionality back to the patient in a short time.
The occlusal plane looked parallel to the bipupillary plane and to the Camper’s plane, in occlusion the prosthesis maintained a stable and repeatable position in centric relation, although some anterior contacts were present.

Fig. 3  Centric evaluation or occlusal plane
The upper denture did not have an uniform contact on the mucosa and lacked a peripheral seal; the lower denture, previously relined with a soft material, left important support areas uncovered.

Fig. 4  Evaluation of adaptation of upper and lower denture
During the first session, preliminary panoramic impressions were recorded, which would allow to extend the dentures’ edges.

Fig. 5  Recording of preliminary impressions
After making the preliminary third class plaster models, a graph was carried out, covering the support areas.

Fig. 6a  Making of preliminary models

Fig. 6b  Carrying out the muscle insertions
For the upper denture, there was not enough coverage of the palate and the areas necessary for the peripheral seal, while both the front and lateral fraena needed to be released to allow mobility. The lower denture was underextended on both the lingual and vestibular side.

Fig. 7  Evaluation of the dentures’ extension
Using the preliminary models, the borders were adjusted with cold self-curing resin to properly cover the support areas.

Fig. 8  Denture extension with cold resin
The length and thickness of the prostheses were checked in the mouth asking the patient to make functional movements.

Fig. 9  Check on length and adaptation of the oral cavity bases
To eliminate front contacts and some interferences, a selective grinding was performed.
After appropriate checks, the dentures were relined with a direct technique using Tokuyama Rebase II (Tokuyama Dental Corporation Tokyo Japan) to enhance adaptation of the bases to the tissues. After applying the adhesive, the resin was mixed, strictly following the manufacturer’s instructions, and then placed inside the prostheses during the plastic phase. The patient was then asked to close his teeth a few times in order to centre the bases on the support areas and the peripheral border was modeled with functional movements, asking the patient to talk and swallow. Lastly, after the material was almost completely hardened, a slight trimming of the fraena was performed, making sure they were active. After the curing in water, excess resin has been finished and polished.

Fig. 10  Step by step procedure carried out for the relining with hard resin of the two arches
The dentures were reintroduced into the mouth and a check was performed to make sure there were no pressure points or occlusal interferences. It was then decided to rebase the dentures with a soft material to help the patient adjust to this new situation. An approx. 1 mm chamfer was performed on the outer peripheral border. The adhesive was then applied on the borders and on the whole surface of the denture base to facilitate the bond between the soft material and the resin.

Fig. 11  Trimming of excess resin and preparation of the peripheral border chamfer
The material Sofreliner Tough® S (Soft) (Tokuyama Dental Corporation Tokyo Japan) was then evenly distributed inside the dentures.

Fig. 12  Application of adhesive and soft material

Fig. 13  Steps of soft relining
Once relined and properly finished, the dentures were handed over to the patient, who used them for a few weeks with a good adaptation.

Fig. 14  Handing over of the relined dentures
Given the positive outcome achieved in this phase, it was decided to perform an indirect relining of the dentures to provide a more stable and long lasting solution to the patient. Two impressions were take using the dentures, and the centric relation and transfer facial bow were recorded.

Fig. 15  Data collection for the lab
Indirect relining
The models were developed with fourth class plaster and mounted on an articulator and before removing the dentures they were placed on a verticulator to keep the exact position of the denture body.

Fig. 16  Models preparation and articulator mounting
After being removed from the models, the dentures were prepared for indirect relining, cleaning the bases surface from the materials previously used. In this way, the space was created for the new material to be injected. After repositioning the dentures on the verticulator, they were sealed on the wax model so as to keep the exact position.

Fig. 17  Steps for the preparation to indirect relining
The models were positioned on the Transformer muffle (Pagnacco, Italy) by locking mould and countermould with the recommended silicone. Different countermoulds were used depending on the size of the arches.

Fig. 18  Positioning of the modes in the muffle
After removing the lower denture from the model, it was cleaned from the wax and degreased, and the input and output channels were prepared in the countermould for the injection technique. The model was isolated and at the same time the surface of the denture base was treated with the specific adhesive. The muffle was closed and Sofreliner Tough® M (Medium) (Tokuyama Dental Corporation Hard Tokyo Japan) was injected.

Fig. 19a-19b  Steps of resin injection for lower prosthesis
The same method was used for the upper denture, but this time two further output channels were prepared because, given the extent of the surface, an adequate distribution of the material would be allowed during injection.
CONCLUSIONS
As described in this case, the use of specific materials for direct and indirect relining techniques is extremely useful in case of deficient support and adaptation to the prosthetic bases. These techniques are also very effective in the post extraction and post implant dentures and they can allow a patient with a low budget to improve the functionality of their dentures without having to immediately start a new rehabilitation process.