

The importance of a proper emergence profile impression on the implant supported prosthesis

about **TEETH** and **IMPLANTS**



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In the previous section, we understood how to obtain a prosthetic emergence profile in cases of post-extraction immediate implantation. We have settled that the steps for implant placement in right position, preservation or alveolar reconstruction, and the making of a provisional crown with the right emergence profile design are key.^{1,2} Well, it is not time to relax during restoration and put everything we have done at risk! The moment to mold both implant and prosthetic emergence profile must never be neglected. On the contrary, this is a fundamental step in the rehabilitation of missing teeth.³ The prosthesis laboratory will develop the final ceramic crown project, whether screwed or abutment-supported, based on models obtained from impression taking of dental arch, as well as of the opposing arch. Therefore, they need to be very precise. There are essentially four methods aimed at impression taking: #1 - By standard impression transfer; #2 - By using patient's own provisional crown; #3 - By using a customized impression transfer; and #4 - By means of digital resource through direct scanning of the mouth.

The pros and cons of the aforementioned techniques will be discussed as follows. When a conventional impression transfer is used, there might be soft tissue collapse at some point between

removal of provisional crown, impression transfer placement, and radiographic confirmation of satisfactory fitting.

If no material is used around the impression transfer in order to provide support for soft tissue architecture, molding will certainly not be precise, thus leading to future adjustments in final restoration. With a view to achieving greater precision, we can use patient's own provisional crown for impression taking. After total arch impression, patient's provisional crown is removed. It is then screwed to an implant analogue and the crown is fitted into the niche available for its copy in the impression material. Thereafter, artificial gingiva is applied. Subsequently, plaster is poured. Immediately after the model has been developed, the provisional crown is removed and the emergence profile is precisely transferred. It is necessary to remember to place a healing cap attached to the implant in patient's mouth after provisional tooth removal.

Flowable composite resin should be applied around the healing cap to promote maintenance of emergence profile soft tissue, since the patient will have to wait at the office until the model is ready and the provisional tooth can be reinstalled in patient's mouth. If the clinician is not able to manufacture the model at his/her

dental office, the customized impression transfer technique can be used. Should that be the case, the provisional crown is removed from patient's mouth, gently screwed to an implant analogue, and the cervical third of the provisional tooth is copied by inserting implant analogue + provisional tooth into a high-pressure molding material. The implant analogue is entirely submerged in the pvs material, while the provisional crown has only its third cervical copied. Once the pvs material has set, the provisional crown is removed, and the customized transfer platform, as well as an empty area left by the emergence profile of the provisional crown are evident. Now, a standard impression transfer is coupled to the implant analogue and flowable composite resin is applied around it, filling the space left by the provisional crown. After flowable resin light-curing, the implant analogue is removed from the molding material and taken to patient's mouth for complete molding of the arch. After molding is complete, the provisional tooth can be reinstalled and the patient can go home.

The most significant difference of this technique from the conventional one is that now the customized transfer carries provisional crown emergence profile information with it, thus

allowing for greater precision of information. In addition to the aforementioned techniques, we have the option of carrying impression taking out digitally. In order to work digitally, it is necessary that the implant system used have, in its set of components, a digital positioner known as scan body. Should that be the case, when we perform digital impression taking, we must scan the arch first, beginning with the implanted region, immediately after provisional crown removal. This is done aiming at non-collapse of soft tissue. After obtaining the image, scan body is installed and the arch is rescanned. By overlapping both images, we will have both profile and implant position captured digitally. In order to get a better final result, it is also important to scan the provisional crown in place and outside the mouth, so that the prosthetic emergence profile ideal design given by the machine can be obtained. Oposite arch and occluded arches scanning is key to obtain right articulation of digital models and to have the digital project of final restoration. No matter the impression taking technique chosen, you should always remember this crucial detail: final restoration, whether personalized abutment, screwed crown or even a standard abutment-supported crown, corresponding to the transmucosal region, must have a design which is identical to that of the provisional crown profile. This will make the final prosthetic dental piece to have an ideal fitting in peri-implant bed, thus avoiding potential problems to both clinician and patient. If the design is not identical, we wonder whether the ideal impression taking technique was used or the laboratory technician neglected using the artificial gingiva. Should anything similar happen, stop, breathe in and reconsider your protocol. Take the hint! See you soon.

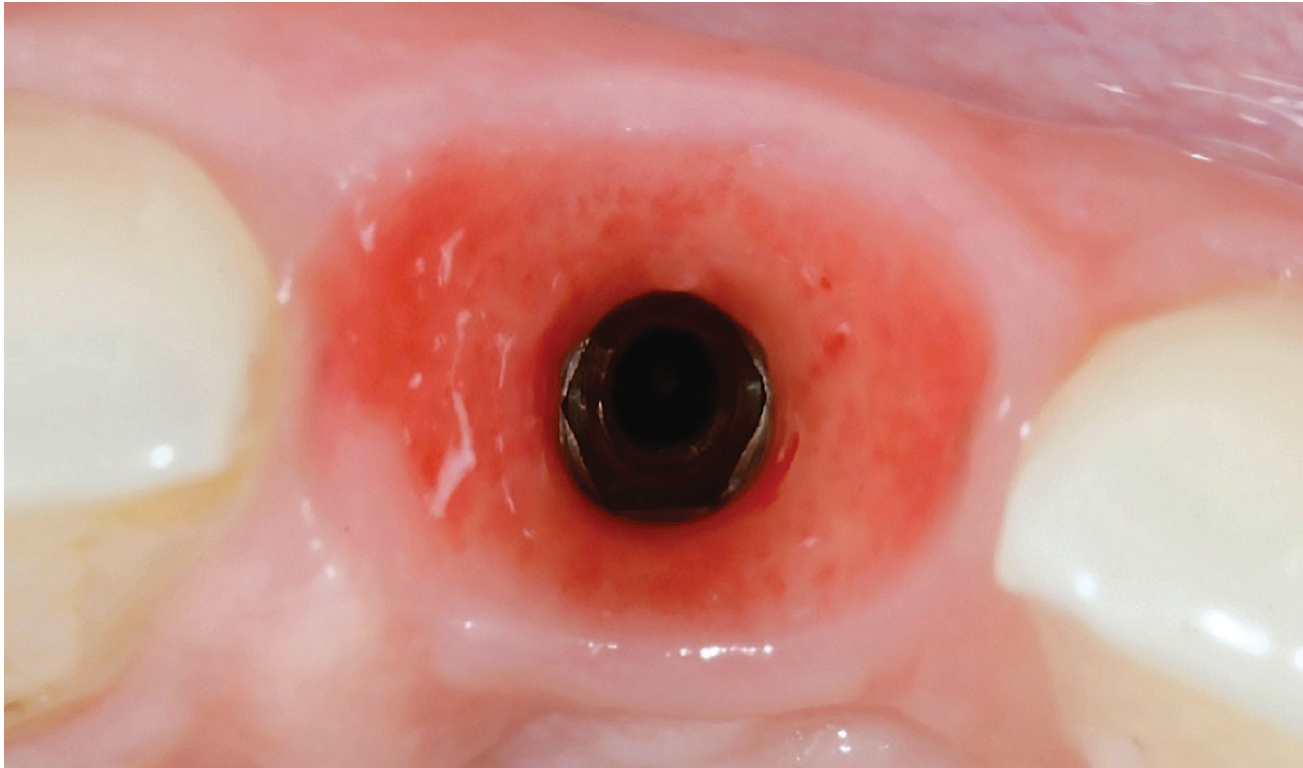


Figure 1:

Prosthetic emergence profile ready to be molded.



Figure 2:

Sequence used to manufacture a customized impression transfer.



Figure 3:

The customized impression transfer has exactly the same design of the provisional crown transmucosal region.



Figure 4:

customized impression transfer in place.

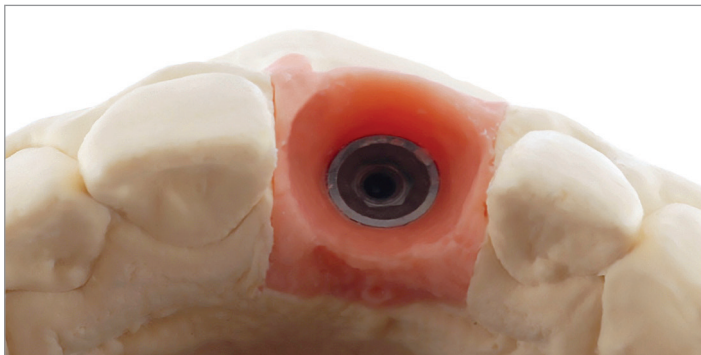
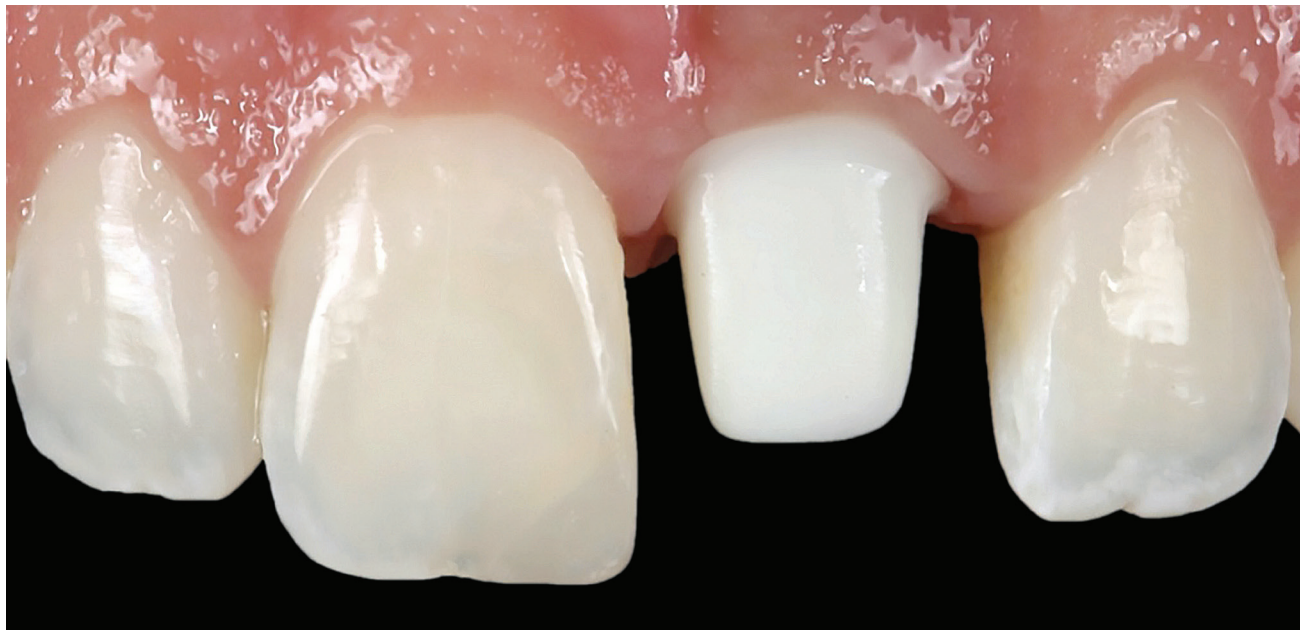


Figure 5:

Model for final restoration.



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Figure 6 and 7:

Abutment in place in both the model and mouth, showing the same behavior when placed in both places.

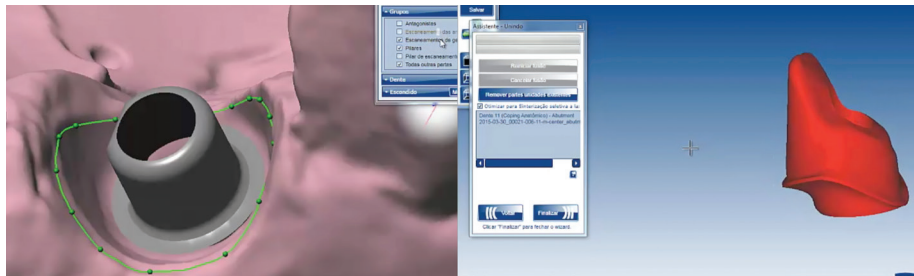


Figure 8:

Digital project under progress. Note the delimitation of the final line of the personalized abutment in green is superficially in place in relation to gingival contour.

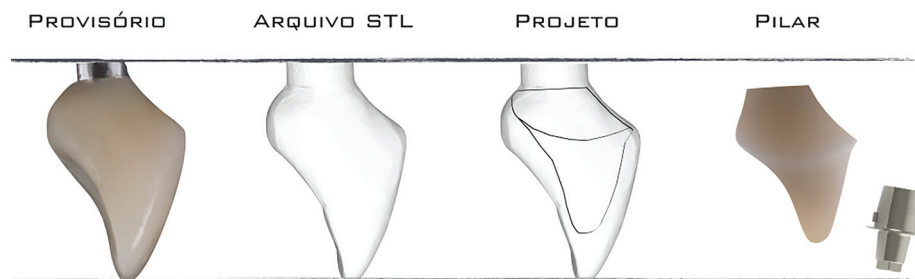


Figure 9:

When impression taking is completely digital, it is important to scan the provisional crown, so that the transmucosal region have an identical design of that presented by the provisional crown profile.

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