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Dental Implant CASE REPORT

Correcting Implant Angulation Using New Stern Snap Angled Attachment in an Implant Overdenture Situation



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Figure 1a-b. a) Final restoration, b) Overdenture on patient's mouth

Abstract

The objective of this patient case presentation is to present a simple, cost-effective technique to achieve enhance retention and stability of the overdenture prosthesis on non-parallel implants utilizing a new attachment Stern Snap Angled attachment. A case report is presented that illustrates the use of a new 2-piece Stern Snap Angled overdenture abutment to accommodate non-parallel implants.

Background and Aim

Implant overdenture treatment has become a popular treatment modality with considerable patient's acceptance and has good impact on patient's quality of life.¹ When individual implants and retentive mechanisms will be used, placing the implants so they are parallel to each other or have their long axes nearly aligned with each other facilitates the prosthodontic phase of treatment by allowing the use of standardized components.^{2,3}

Most implant overdenture abutments and related components require parallelism within approximately 10 degrees to function properly.



This may preclude the use of conventional implant overdenture abutment and corresponding attachment.⁴ Custom abutments then may be used to correct for implant angulation variations.

Malalignment of individual implants with abutments can make prosthesis placement more difficult and the plastic retentive element are pinched more often during placement and removal, producing excessive wear and earlier loss of retention. A common complication (30% of the prostheses) is the need for activation or replacement of the mechanical retention.⁵ The purpose of the article is to demonstrate how to use a newly designed attachment, Stern Snap angled, made to correct the angulation of mis-aligned implants. The features and the benefits of this attachment are as follow:

It is used to retain overdentures on most of the popular implants. It has a very low profile and takes up only 2.5mm of height in the denture. Its plastic retention cap comes in three retention levels (1lb., 2lbs., 3lbs.) and are extremely long lasting.

No metal housing is needed, making it more economical.

Case Report of an Overdenture on Non-aligned DENTIS™ Implants

- The overdenture is placed and fitted over the healing abutments and the soft tissues; the balanced occlusion is refined.
- The healing abutments are then removed and the gingival cuff height of the attachment abutment is measured with a periodontal probe.
- Select the implant(s) that is (are) well situated under the denture teeth. Place the selected straight Stern Snap(s) over the implant and tighten to 20Ncm using 1.25 hex driver. (Fig.2)



Figure 2. The Stern straight Snap abutment is placed first and tighten with 1.25 hex driver to 20Ncm.

- Screw the appropriate tissue cuff height Stern Snap SFI Abutments into each implant. The abutments are tightened to 30 Ncm. (Fig.3,4)

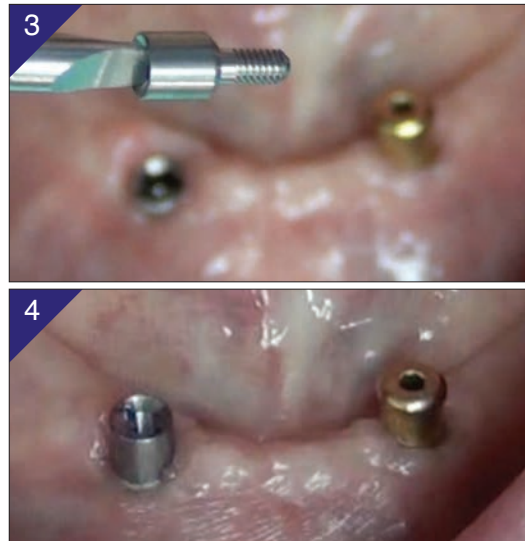


Figure 3, 4. The gingival cuff piece of the Stern angled abutment (SFI abutment) is place first with slotted driver and tighten to 30Ncm

- While holding the Stern Snap Handle of Stern Snap Angled attachment, insert the 1.25 hex driver through the slot in the Stern Snap white plastic Alignment Post and engage the head of the screw. Position the attachment onto the hemispherical occlusal surface of the abutment and begin to turn the screw into the abutment. (Fig. 5)

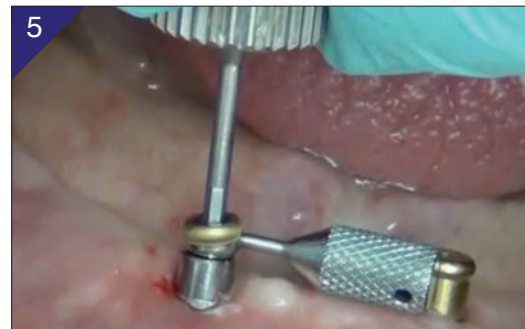


Figure 5. Placement of the second piece that looks like a ball over the SFI abutment.

Series of Clinical Views



Figure 8. Prepare a recesses in the intaglio surface over each retention cap.



Figure 9. Make a hole with a #8 round carbide bur for the escape of the excess acrylic pick-up material.

- Using the Stern Snap Handle, move the attachment until the alignment white plastic post aligns with the desired path of insertion of the prosthesis or aligned it with the straight snap abutment. Hand tighten the screw. (Fig. 6, 7)

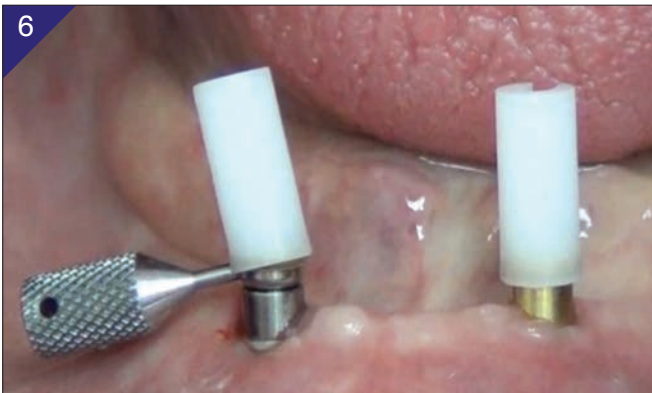


Figure 6. Using the Stern Snap Handle, move the attachment until the alignment white plastic post aligns with the desired path of insertion of the prosthesis.

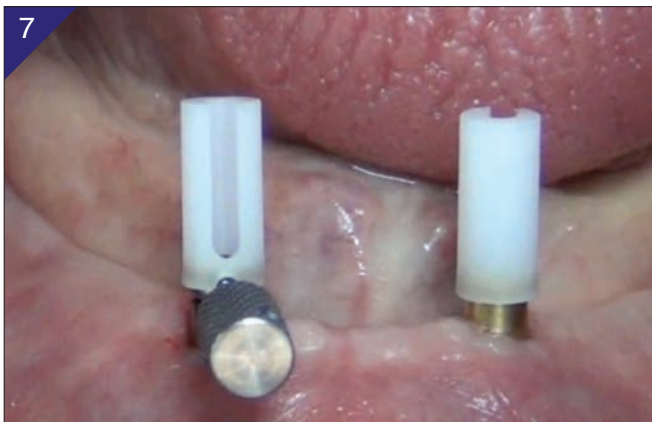


Figure 7. When both attachments are aligned tighten the screw of the Stern angled to 20Ncm with the hex driver.

- Remove the Alignment Post. While holding the handle to prevent movement, torque the screw to 20 Ncm using 1.25 hex driver. Unscrew the Stern Snap Handle.
- Place a retention cap onto each attachment, any

exposed parts of the abutment are blocked out, and the cap is processed into the denture. Pick up one at a time, and clean the excess resin before attaching the next one. (Fig. 8-13)

- The retention caps can easily be changed when necessary. The Stern Snap Insertion/Removal Tool is a double ended tool.
- The removal end has the longer neck and has sharp edges. The removal tool is pushed straight into the retention cap. Pull straight back to remove the cap from the denture. The cap may be removed from the tool by bending the tool sideways.
- Place a new cap onto the insertion end of the tool, (Fig. 14) which is shorter and smooth. Push the new cap firmly into the recess in the denture and pull the tool back out. The cap will remain in the denture.



Figure 14. The double ended Stern Snap insertion / removal tool

Cleaning and Maintenance

In the Office :

Place in an ultrasonic cleaner with an enzymatic detergent diluted with tap water per the manufacture's guidelines. Sonicate for 10 minutes. Rinse with tap water for three minutes.

At Home :

Brush gently the overdenture inside out and soak overnight using a denture cleansing tablet in water. Brush the implant abutment and the gingiva with soft brush.

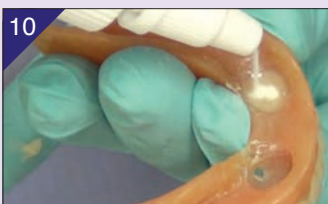


Figure 10. Add 2-3 drops of monomer in the recess after obliterating the escape hole with your finger. Then saturate the monomer with tooth colored auto-polymerizing resin.



Figure 11. The retention caps are in place with the with white nylon ring that prevents the resin to be in contact with the gingival cuff.



Figure 12. Showing a view of the intaglio surface with picked up retention caps.



Figure 13. Frontal view of the abutments in the mouth.

Conclusion

A technique has been presented to attach an implant overdenture with non-aligned implants using new commercially available Stern Snap Angled attachment. (Fig. 15,16)



Figure 15. The Stern Snap straight attachment complex.



Figure 16. The Stern Snap angled attachment complex.

This technique minimizes laboratory expense and is a viable alternative to costlier bar-fabricated overdenture.



Figure 17. Frontal view of the finished dentures.



Figure 18. Frontal view of the pleasing smile.

Presented at the ICOI meeting in San Diego, August 25-27, 2016.

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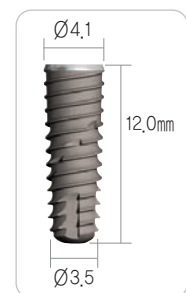
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