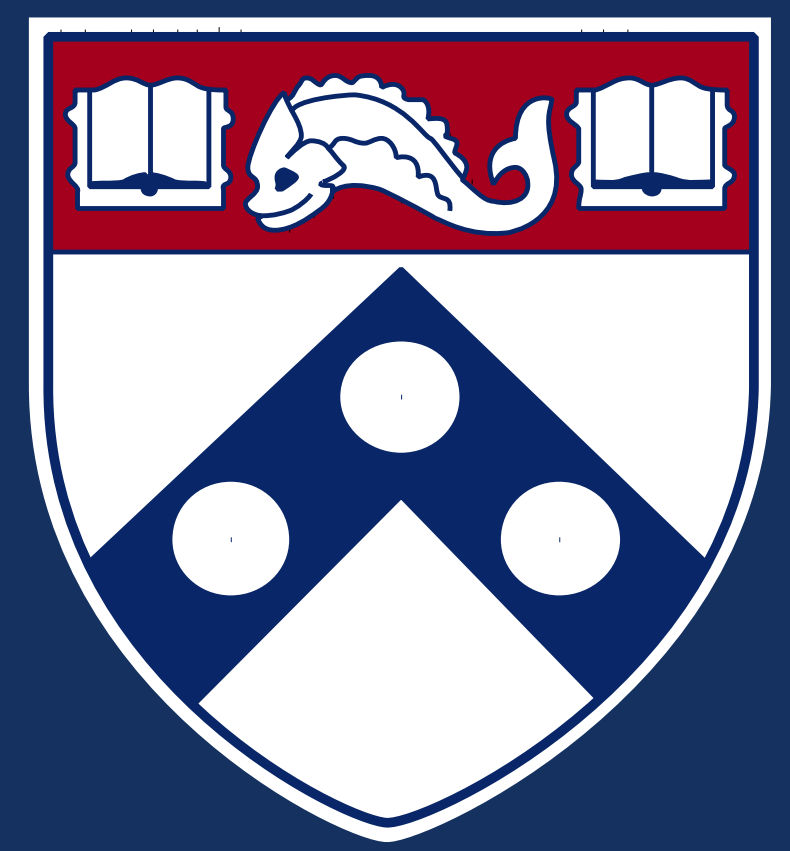




Treatment considerations for prosthetic rehabilitation with conometric connection – a case report

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AIM - The purpose of this study is to evaluate the biomechanical and esthetic considerations of conometric retention. Conometric retention can be used to give fixed retention to removable complete prosthesis supported by four implants.

METHOD -A case report of a 55 year old male with severe gag reflex describes the treatment sequence for treatment planning a terminal dentition from fabrication of immediate dentures to implant placement designed for rigid attachment using conometric connection.

DISCUSSION

The concept of conometric retention is similar to the concept described by Yalisove for crown sleeve coping in 1966.

Conometric retention is achieved by means of a conical connector called Syncone caps (Dentsply Sirona) which allow for parallelism and friction grip. They are 4 degree and 6-degree conicity. Ankylos Syncone prefabricated abutments are compatible with syncone caps within Dentsply. Atlantis conus concept allows for syncone compatibility with other implant systems.

Eccellente et al reported that the conical cap acts a male component and is part of the prosthesis. This provides secondary splinting by means of the prosthesis framework that helps reduce micromotion. Friction fit implant prosthesis have demonstrated an implant survival rate of 99.17% and prosthesis survival rate of 98.73% in follow up prospective studies upto 60 months.

Conometric retention can be used for complete or partial dental restorations however the applications in maxillofacial prosthetics are yet to be explored.

A. At Presentation



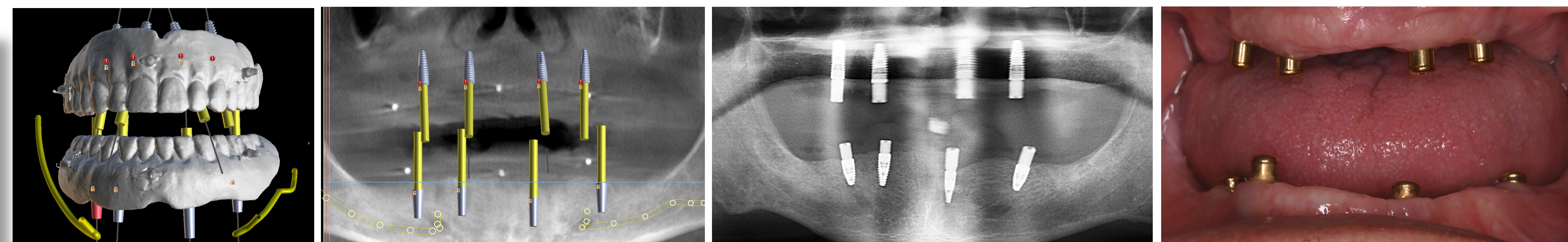
B. Immediate Dentures



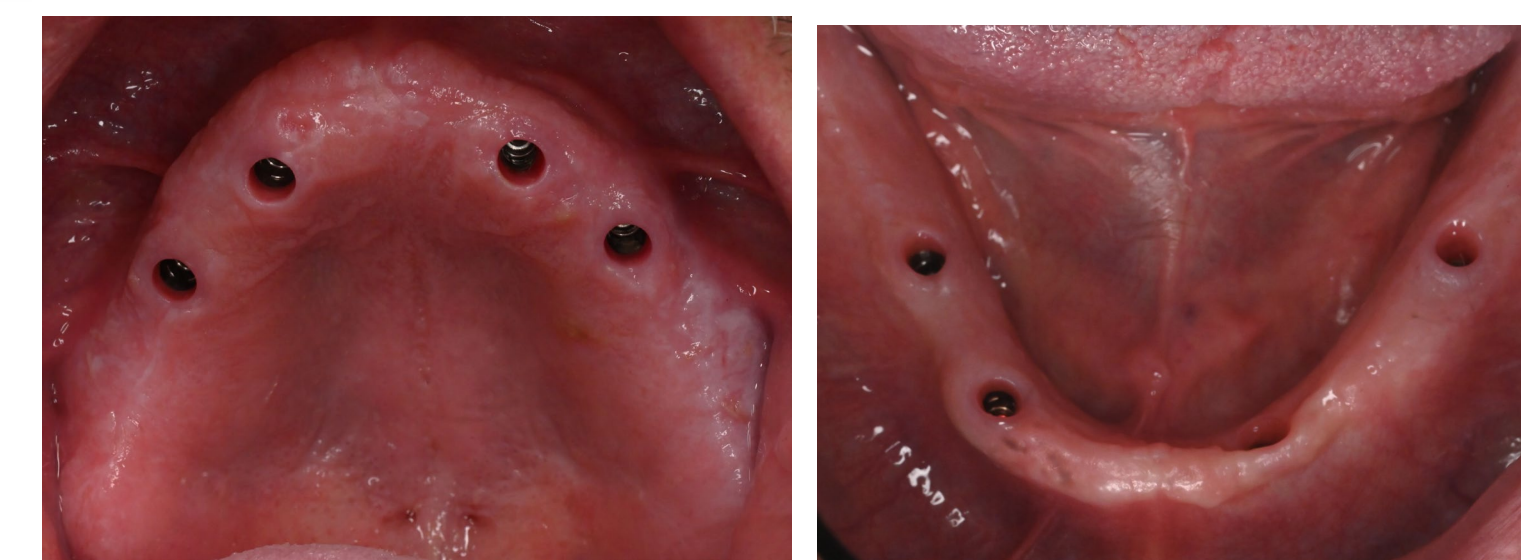
C. Definitive Prosthesis



1. Implant Planning and Surgery



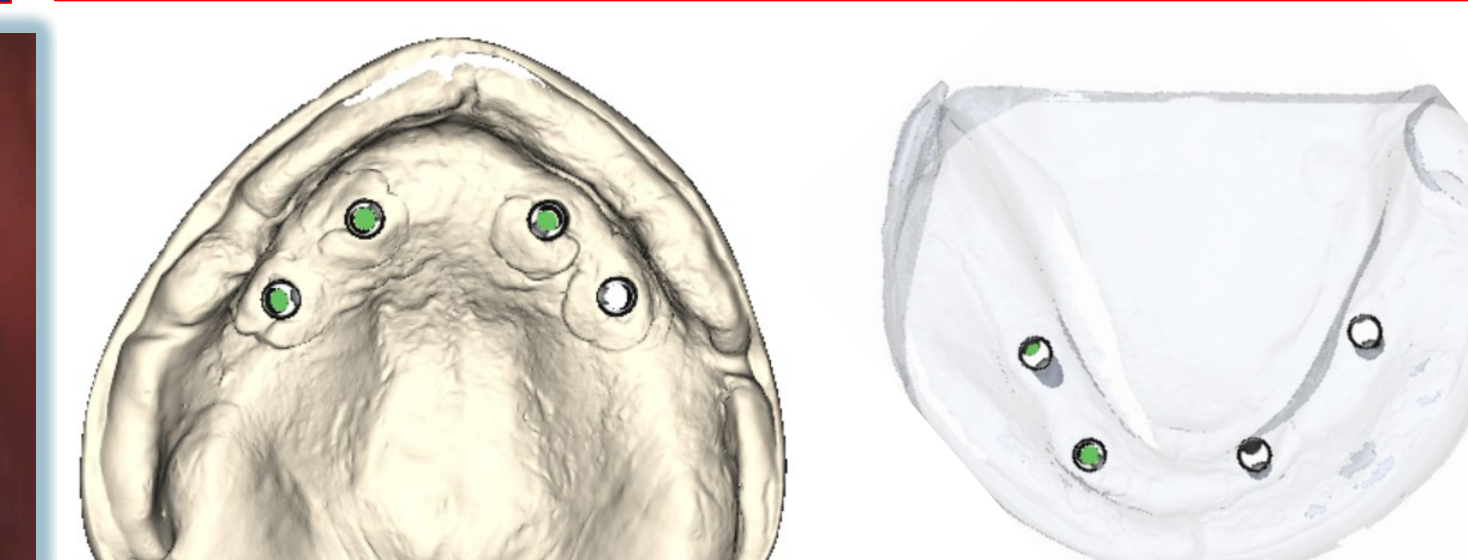
2. Occlusal View



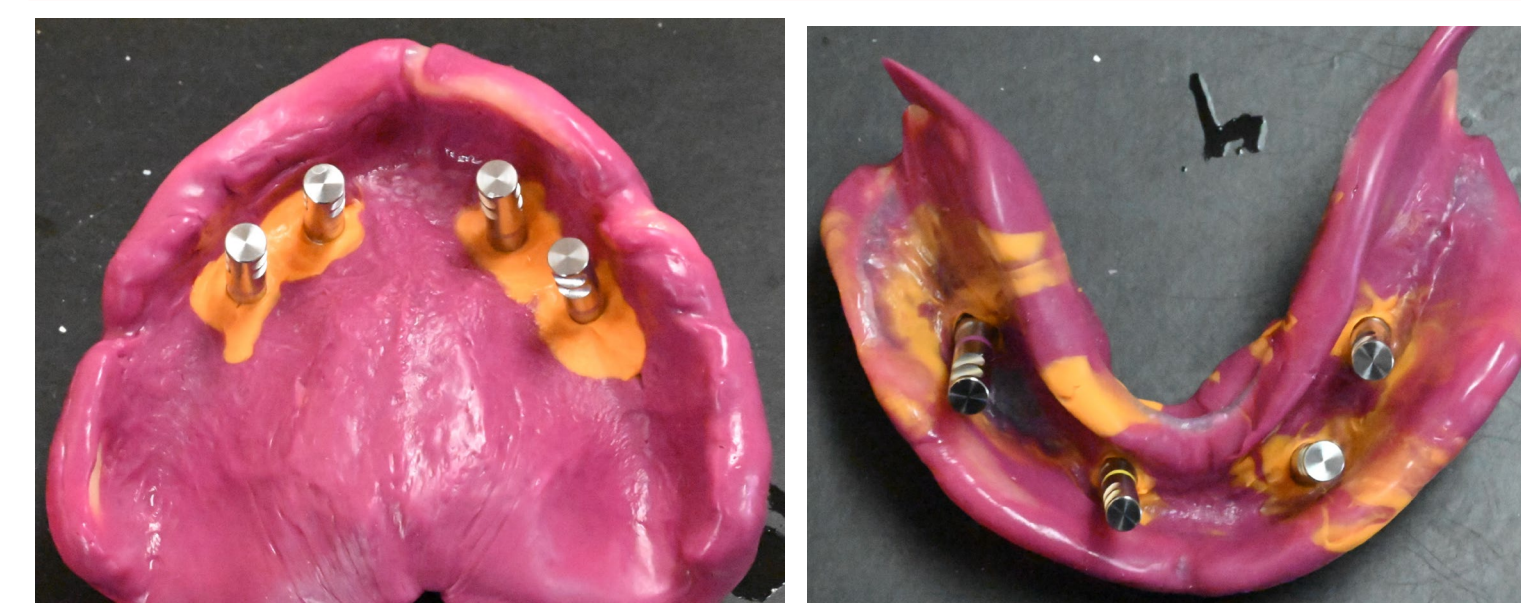
5. Trial Dentures



6. Digital Modelation



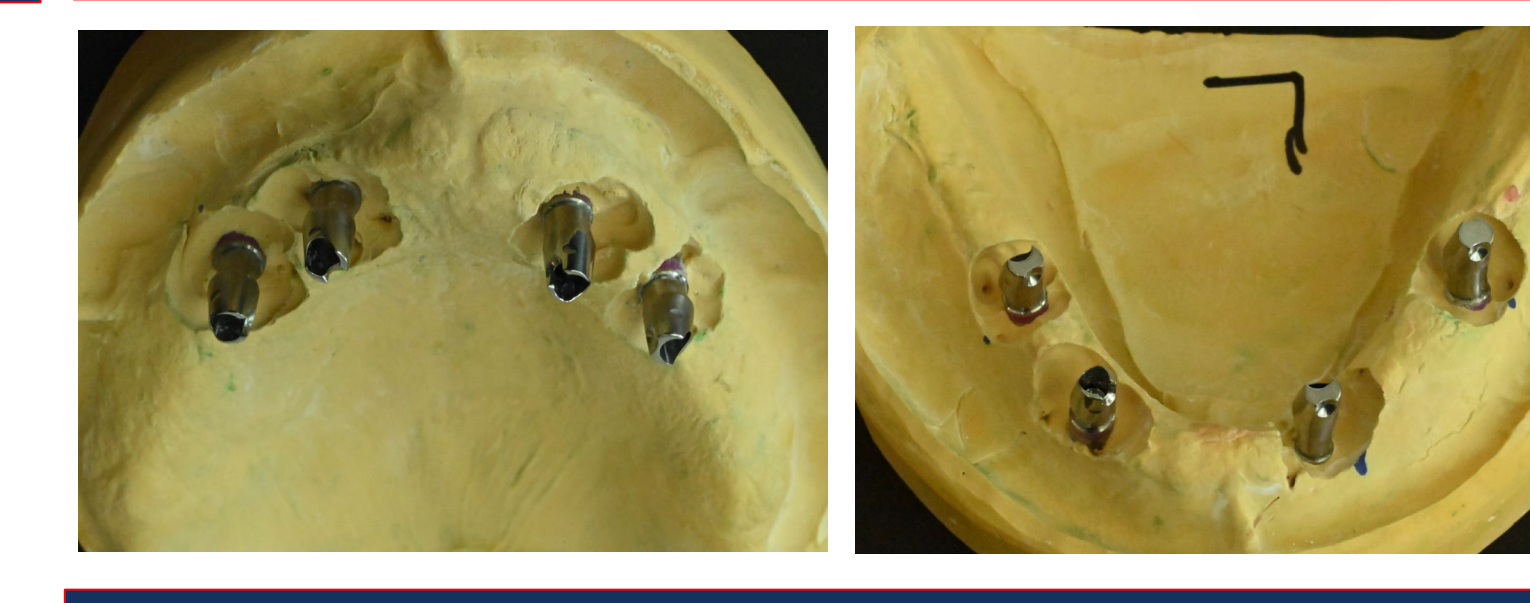
3. Implant Level Impression



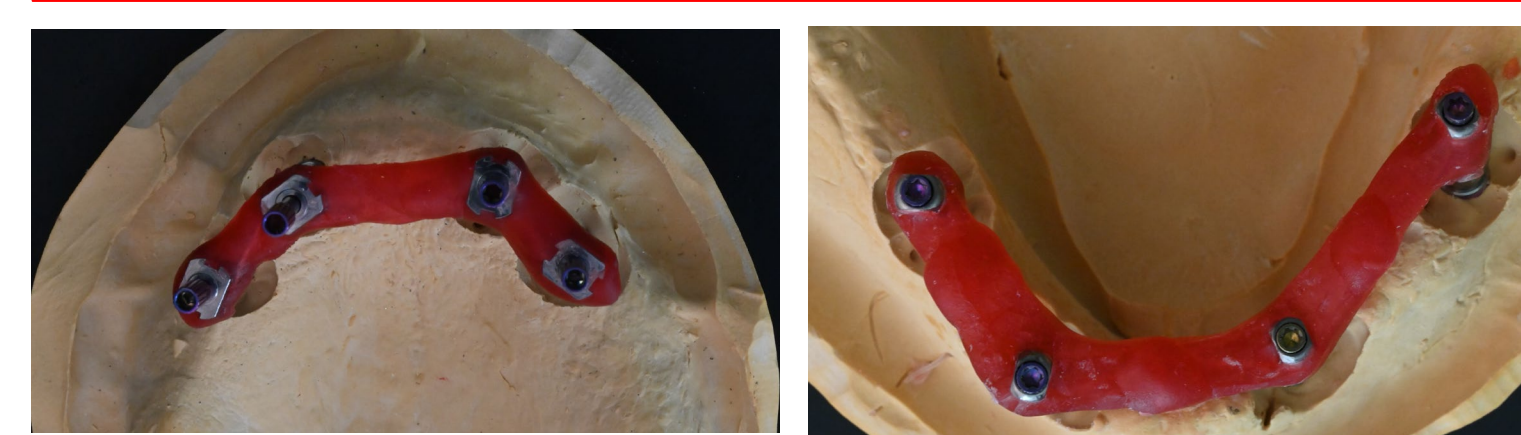
7. Abutment Fabrication



8. Abutment Fabrication



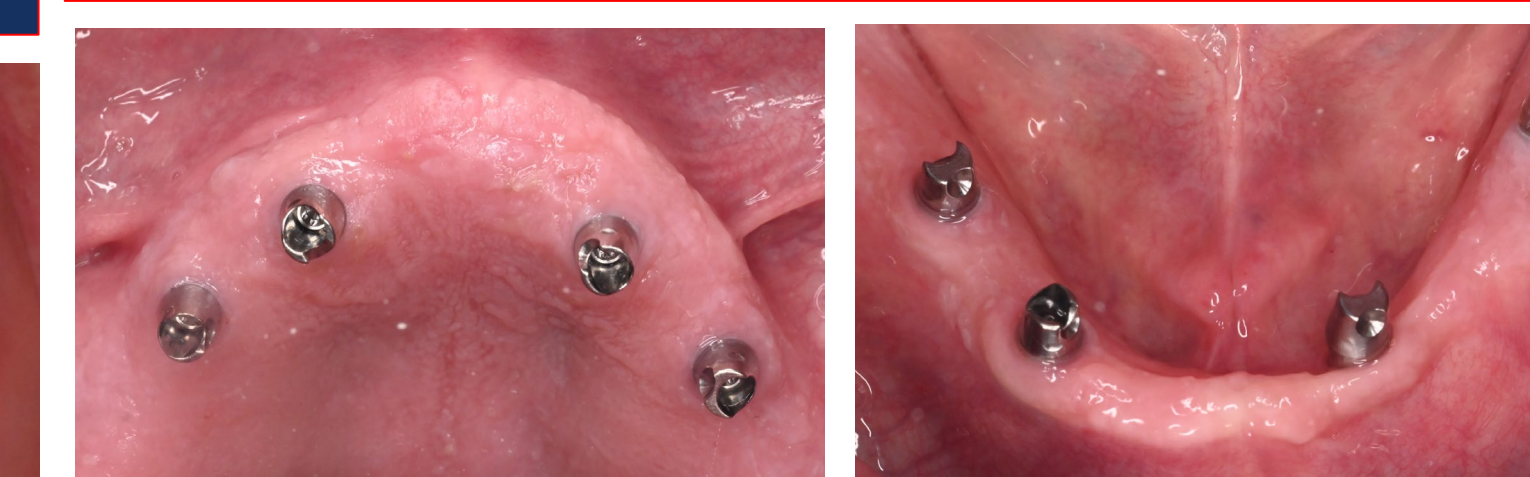
4. Fabrication of Master Model



9. Insertion Guide



10. Abutment Installation



REFERENCES - :

1. Degidi, Marco, et al. "Immediate rehabilitation of the edentulous mandible using Ankylos SynCone telescopic copings and intraoral welding: a pilot study." International Journal of Periodontics and Restorative Dentistry 32.6 (2012): 687.
2. De Angelis, Paolo, et al. "Clinical outcomes of conometric retention for implant-supported fixed prostheses: A systematic review and meta-analysis." The Journal of Prosthetic Dentistry(2023).
3. Mori G, Oda Y, Sakamoto K, Ito T, Yajima Y. Clinical evaluation of full-arch screw-retained implant-supported fixed prostheses and full-arch telescopic-retained implant-supported fixed prostheses: A 5–12 year follow-up retrospective study. Clinical oral implants research. 2019 Mar;30(3):197-205.
4. Eccellente, Tammaro, et al. "A new treatment concept for immediate loading of implants inserted in the edentulous mandible." Quintessence International 41.6 (2010).

CONCLUSIONS

Conometric retention is a cost-effective alternative to fixed implant restorations.

The lack of cement allows for less incidence of bacterial infiltration.

There are decreased complications associated with screw loosening.

There is no consensus statement from atlantis conus concept for number of implants; they advocate a minimum of 4 implants per arch with the aim of achieving favorable biomechanics for cross arch full restorations.

It allows for better cleansability and patient acceptance.

It is important to guide implant placement to ensure parallelism, syncone caps can accommodate angle correction upto 30 degrees.

The retentive force for syncone abutment was reported to be between 5 to 10N when tested for 5000 insertion-separation cycles.

Initial recommended activation force is 30N to achieve maximum retention.

Abutment surface area plays a major role in retention, hence narrow platform and shorter implants can lead to decreased retention.

Diagnosis and treatment planning should involve evaluation of space, to ensure the availability of adequate interocclusal space for material thickness. (Conus concept requires atleast 10.5mm)