SYNCONE- A NEW DIMENSION IN IMPLANT OVERDENTURE: A CASE REPORT

Dr. Chethan Hegde[1]*, Dr. Padhye Apurva Atul[2]

[1]Professor & HOD, Department of Prosthodontics, A B Shetty Memorial Institute of Dental Sciences, NITTE (Deemed to be University), Mangaluru, 575018, India

[2]Post Graduate Student, Department of Prosthodontics, A B Shetty Memorial Institute of Dental Sciences, NITTE (Deemed to be University), Mangaluru, 575018, India

Corresponding Author *
Dr. Chethan Hegde
Email: drchethanhegde@nitte.edu.in

Abstract:
Ankylos SynCone concept has become an emerging trend among implantologists inorder to provide rehabilitation of edentulous ridges. With the luxury of friction fit telescoping crowns and the immediate loading concept, SynCone concept thrives to be the next big thing in the implant world.here is a case report on mandibular edentulous rehabilitation with SynCone concept.The telescopic crown technique has benefits such as excellent three dimensional immobilization of the restoration , flexibility of design and optimum access for oral hygiene with cost effective procedures.With these features ,we can foresee a new dimension in rehabilitation of missing natural teeth.
Keywords: SynCone, degunorms, immediate loading, telescopic copings.

INTRODUCTION:

Implants have now become the forefront of modern day dentistry when it comes to rehabilitation of the missing tooth or teeth. Various implant concepts provided by various implant systems gives us a wide range of options for treatment planning.

One such newly trending concept is the SynCone concept used for rehabilitating edentulous ridges. This concept attributes to the placement of implants and immediately loading the prosthesis.

The benefit of SynCone concept is its versatility. They provide fast and cost efficient restorations of edentulous ridges. Minimally invasive treatment makes it possible to load the prosthesis under local anaesthesia on the same day. For delayed restorations it serves as a prefabricated retaining element for the maxillary and mandibular ridge. New abutment angulations provide improved parallelization.[1]

Here is a case report on rehabilitation of the edentulous mandible with implant placements interforaminally using the SynCone concept.

Case report:

A 45 year old female patient(fig 1) reported at the out patient department of Prosthodontics and Implantology ,with periodontally damaged lower teeth(fig 2a) and maxillary ridge was rehabilitated with fixed restorations.(Fig 2b)

Patients chief complaint was poor esthetics and difficulty in chewing due to missing lower back teeth. Patient was in a good health condition. Blood picture showed normal values for the surgical treatment.Intra oral clinical

examination revealed grade II mobility with respect to all the teeth of the mandibular arch. The trabecular pattern was identified using intra oral periapical radiograph. Bone height was analysed using the orthopantomograph (fig 3). Implant selection was done accordingly.

Material and methods:

Treatment plan:

- Extraction of teeth with respect to 43,42,41,31,32 and immediate placement of implants.
- Placement of 4 implants in the mandibular region (44,42,32,34)with-Ankylos SynCone Concept.

The treatment plan was explained to the patient and the consent was taken.

Anti microbial prophylaxis was obtained with the use of Amoxicillin (thrice daily (500mg) for 5 days starting with 1g amoxicillin one hour before surgery).[2]

The Surgical phase:

The patient was prepared and the surgical instruments were sterilized.(fig 4) Atraumatic extraction was carried out with respect to mandibular teeth (43,42,41,31,32) under local anaesthesia.(fig 5)

Implant osteotomies were carried out with recommended sequence of drills. Saline irrigation reduced the heat generated caused due to friction during the preparation of the site. Linderman drill(2mm) was used to perform the osteotomy (Fig 6a). Trispade drill(3.5mm) was used to prepare the osteotomy site for the implant placement(fig 6b) . Paralleling pins were placed in each osteotomy site to indicate their parallelism.(fig 7)Bone reamer was used to modify the implant osteotomy site for the assigned implant size. Ankylos implants (size A9.5,A11,A11,A9.5 with respect to(34,32,42,44) were placed avoiding the mental foramen. (fig 8)

Prefabricated 4^{o} SynCone abutments were then placed.(fig 9) The correct positions of the implant and the SynCone abutments were then checked with four paralleling pins. Vicryl 3.0 sutures were then placed.(fig 10)

The prosthetic phase:

The abutments were then isolated with rubberdam.(fig 11) .Petroleum jelly was applied to the mandibular ridge inorder to protect the mucosa.

SynCone gold degunorms were then inserted (fig 12)

A window was prepared in the mandibular denture(fig 13)that involved the areas with the degunorms which was later picked up by self cure acrylic resin making sure the acrylic avoids contact with the mucosa. (fig14) The denture was then trimmed of the excess material and polished. The fit in of the finished implant supported prosthesis was done immediately.(fig 15)

The post operative radiograph confirmed ideal placement of the implants.(fig 16)

Patient was given instructions on maintenance of oral hygiene and recalled after one week, one month and three months.(fig 17)

Discussion:

SynCone Concept has become an emerging trend in implant dentistry. Mostly because of its unique abutment retainer system. In this system , pre machined titanium abutment is used which is available in a 4 ,5˚or a 6˚ taper. The abutments are also fabricated in a 15 and 22.5˚ and 30˚ angulations when correction of angulations is needed especially in the maxillary arch. The SynCone abutments are available with sulcus heights of 1.5mm , 3 mm, 4.5mm to accommodate variability in sulcus heights and also to sub crestally place implants .[1] Since the implants have Morse taper connection the SynCone abutment retains a full degree of rotational movement, so multiple

units can be easily placed in parallel using different abutment angulations. Marco et al in his studies showed a 98.9 % success rate of implant supported overdenture using SynCone concept.[3]

The long term retentive characteristics of the abutments was assessed by Zhang et al .Authors concluded that inspite of the removal and cleaning of the denture, a constant retentive force was expected for 5yrs. [4] Huan and jhu reported no adverse effects on 12 -24 month follow up of immediately replaced mandibular overdenture .[5]

The precision fit provided by the gold copings and the SynCone abutments in the denture , prevents excessive horizontal forces on the implant which may alter the course of an otherwise uneventful osseointegration. This treatment concept can be applied in significantly non parallel divergent implant placement due to 4 and 6 degree SynCone abutment taper and the use of angled abutments

The Ankylos Syncone provides an immediately functional overdenture , chair side, while the patient is still anesthetized. This is one of the most important characteristics of using Syncone abutments, that the patient can leave the clinic with a fully functional and esthetically pleasing prosthesis .

The Ankylos Syncone Concept is gaining popularity because of the possibility of immediately loading and a new system of telescopic crown technique. The friction fit of the degunorms and the abutments gives it a high end retention. The telescopic design of the coping and its ability to be attached to the SynCone abutment without the use of any cement or a screw gives it a cutting edge among other treatments. These two features enable the prosthodontist to fabricate a restoration that is extremely stable and performs as well as a fixed restoration yet at the same time can be removed by the patient for daily maintenance.

The co operation of patient is of high importance for the success of this treatment, patient has to maintain good oral hygiene and cleanliness of the denture. Patient might have to revisit the clinic for reline appointments of the denture.[2] Although there are some limitations ,the immediate loading concept and the telescopic crown technique has benefits such as excellent three dimensional immobilization of the restoration , flexibility of design and optimum access for oral hygiene with cost effective procedures. With these features ,we can foresee a new dimension in rehabilitation of missing natural teeth.

Conclusion :

The rapid technological advances in the field of dentistry have resulted in the wide use of implants to support and retain fixed and removable prosthesis .One of the options in implant –supported removable prosthesis within the Ankylos Dental Implant system is the Syncone overdenture concept.The excellent immediate functional and esthetic result of SynCone concept marks a turning point in the future of implant dentisty.

References

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Fig 1 : Pre operative photograph

Fig 2a: fig 2b

Fig 2a: pre operative view of the mandibular teeth

Fig 2b: preoperative view of the maxillary fixed restorations.

PFig 3 :Pre operative OPG

Fig 4: Sterilized armamentarium.

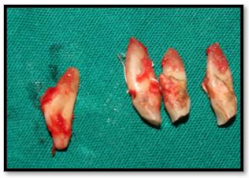

Fig 5a Fig 5b

Fig 5a: extraction site with respect to 43,42,41,31 32

Fig 5b: extracted teeth

fig 6a

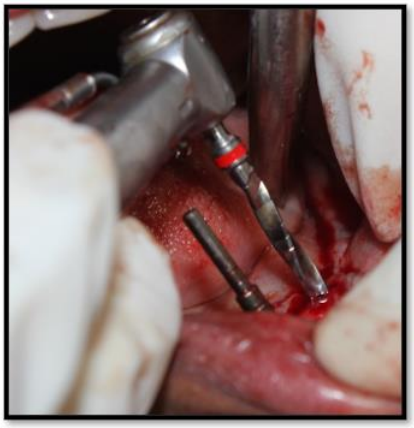

fig 6b

Fig 6a : osteotomy done with linderman drill(2mm)

Fig 6b: osteotomy site prepared with trispade drill(3.5mm)

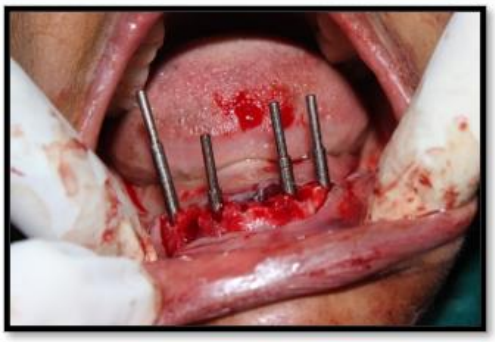

Fig 7:placement of paralleling pins.

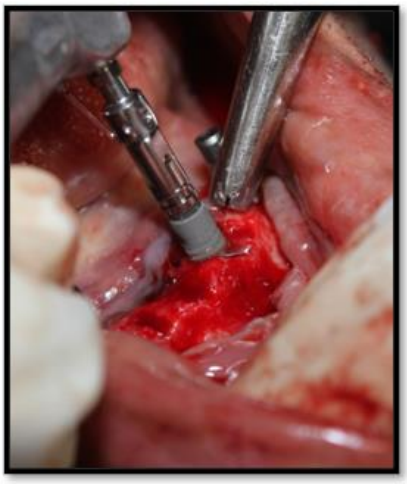

Fig 8 :implants placed with saline irrigation

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Fig 9:syncone abutments placed

Fig 10 :3.0 vicryl sutures placed

Fig 11: rubber dam applied .

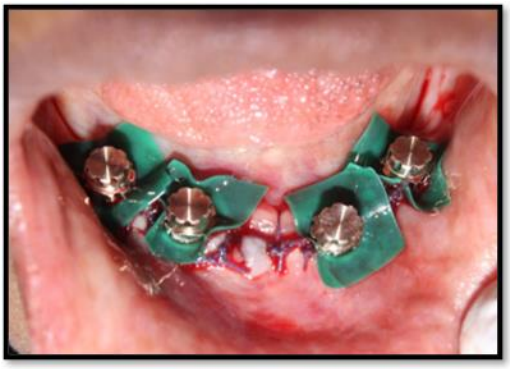

Fig 12: gold degunomes inserted.

Fig 13 : window preparation done in the mandibular denture for the pick up impression.

Fig 14:pick up impression made with self cure acrylic

fig 15 intaglio surface of the finished and polished overdenture.

Fig 16: post operative radiograph depicting the fit of the abutments and degunomes

Fig 17: post operative photograph