AN APPROACH FOR A LONG SPAN PARTIAL EDENTULOUS AREA, BY A FLEXIBLE PARTIAL REMOVABLE DENTAL PROSTHESIS (RDP)

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A long span edentulous case demands a more biological and functional approach in rehabilitation. A Lucitone FRS material is used in long span edentulous area for RDP, as it has certain advantages over a conventional denture base material. A 75-years-old male patient with a long span edentulous lower jaw with only three teeth two canines and a last molar on right side having deep undercuts rehabilitated with FRS is reported. The patient is quiet happy and ratified with the flexible resin system RDP.

A lucitone FRS material is used in long span edentulous area for RDP1. Current material is nylon based thermoplastic polyamide. It is composed of monomer free Nylon – generic name for certain type thermoplastics resin polymer, Kujosns as polyamides. It is different from PMMA (Poly methyl metha acrylate) which exhibits high porosity, high water absorption, volumetric changes and residual monomer.2 These type material came in use, since 1950. Acetyl (Trade name Dentaplast) resin for flexible resin is good for clasp frame work. The Clasp thickness ranges from .3 to .5 m.m.3 It is light weight, heat resistant and ductile. Mold shrinkage is less (•014%) so it requires minimum clinical adjustment4.

INDICATION OF FRS - AS A RDP[7].

- In Presence of bilateral bony and soft under cuts.
- Severely absorbed ridge with few abutment teeth.
- In patient with complain of metal feeling of claspo and poor esthetic.
- Geriatrics patient where osterioporatic residual arch and alveolar bone is present.
- Long span partial edentulous ridges.
- Periodontally weakened teeth and pericemental area – crown/root ration is not 1/1.
- Medically compromised patient where pre-prosthetic and implant surgery is contra- indicated.
- Philosophical type patient.
- Could be used in combination with metal framework as combo dentures where clasp and saddle (denture base) is flexible and rest of the components are in metal.

In challenging cases as in cancerous and cleft palate patient. It is also the material of choice in Patient allergic to acrylic or when protuberant bony formation restricts the insertion of acrylic teeth.

Other indications: Mouth guards in sports, Positioners, Bruxism splints/night guards (flexite), Bite splints, Gum veneers and TMJ splints, Space maintainers and Obturators, Speech therapy, sleep apnea therapy and orthodontic retainer appliances and for patient prone to breaking dentures as psychiatric and epileptic patient.

CASE REPORT

A 75 yrs old geriatric patient visited department of prosthodontics with chief complaint of inability in mastication, speech, esthetics and metal feeling of retainers with the existing RDP.

Intra-oral examination revealed poorly designed and loose fitting acrylic RPD. Maxillary arch was more or less in acceptable condition. In mandiblar arch only three teeth left and right canines and right

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last molars were present. At present three teeth are having deep proximal under cuts. Periodontally involved teeth are weak but non-mobile. Class-2 horizontal and vertical overlap is present.

Medical history revealed that patient is hypertensive and diabetic but both were controlled.

The cast were thoroughly evaluated. Studying over molar is tilted approximately 24° and both canines showed very prominent under cuts on mesial and distal sides. Residual rest ridge was knife edge and severely absorbed.

Radiological examination: OPG and IOPA radiographs showed a crown to root ration 1/0.75 (Fig.1). Biological width is disturbed. Furcation involvement is present.

It was confirmed as a compromised long span partial edentulous mandibular lower ridge. Category is Kennedy's class II modification-A P6. Patient was Philosophical type. Inter occlusal distance was normal; therefore, no encroachment in the edentulous space by opposing arch teeth was noticed.

Patient could have following treatment options like Conventional heat cure acrylic resin RDP furnished with wrought clasp, Cast partial prosthesis, Implant retained fixed partial denture and Metal free flexible partial RDP.

Patient already had conventional RPD but it gives metal feeling of retentive clasps, un-esthetic in appearance and difficulty in chewing. Implant retained fixed prosthesis is contra-indicated because of age, medical status and economy. Cast partial was also contra-indicated due to incapability of occlusal rest location on present teeth on periodontally compromised teeth. FPD is also contra-indicated in a state of long span edentulous areas.

Mouth preparation was done for the clasps location and also for path of insertion and removal of prosthesis by creating guiding planes. Existing under cut will be useful for the retention of RPD. It is accomplished by 1.6m.m. Head parallel wall straight cylindrical bur. Finishing of enrmeloplasty teeth is done by robot diamonds of SF – superfine grit. Polishing of teeth is completed by green (fine) and red (supra-fine) Super- snap discs.

Lower Special tray was adjusted for border extension. Border molding was done by green stick tracing compound for proper shape of borders. It was extending in post mylohyoid region and lying under cut for recording seal area. Border molded lower special tray was used for recording final impression in irreversible hydrocolloids for both U/L arch and store caste were prepared (Fig. 3).

Tripod configuration6 of designing is considered i.e. three clasps on three teeth. Cast mounted on mean value articulator with bite registration record (Fig 4).

After trial and wax up the work polymerized with FRS material in special injecting system8. Finishing of RDP was accomplished with the help of carbide burs and polishing was completed with pumice (Fig. 7). Patient is happy and satisfied with performance of prosthesis. This is because of excellent retention, stability and esthetics (Fig. 8).

DISCUSSION

FRS denture material is good for long edentulous span and excellent for periodontally compromised teeth, provided where patient is not eager for extraction of his teeth. Flexibility of material acts as stress breaker which acts around vertical and horizontal axis which disengages on individual tooth and other undercuts to prevent the transfers of forces to remaining natural teeth and other side of arch. Existing teeth works as an implant abutment. This prosthesis is un-breakable, gives wrong information among the population. It fractures, if applied forces increases to modulous elasticity of the material. Occlusal rest is not fabricated due to flexibility of the resin system therefore less mouth preparation is needed.

CONCLUSION

FRS material is beneficial and suitable for older and geriatric patient. It could be contra-indicated in short spanned spaces and good oral state. The metal base RPD design is complex and it has to adapt

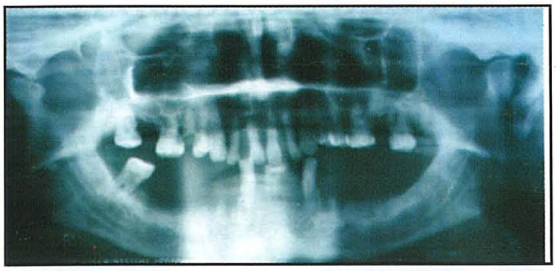


Fig. 1 O.P.G.

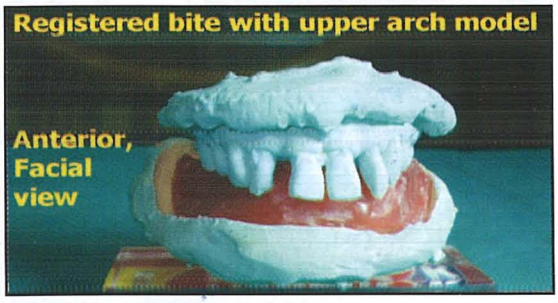


Fig. 3

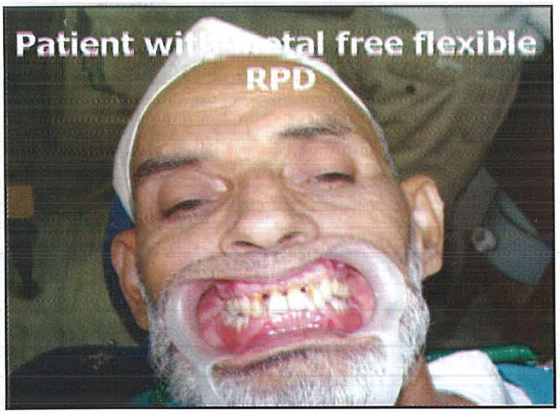


Fig. 5

a rigid material to flexible oral environment Treatment with metal free denture is cost effective and superior option among present modalities. Patient feels more natural, comfortable and confident.

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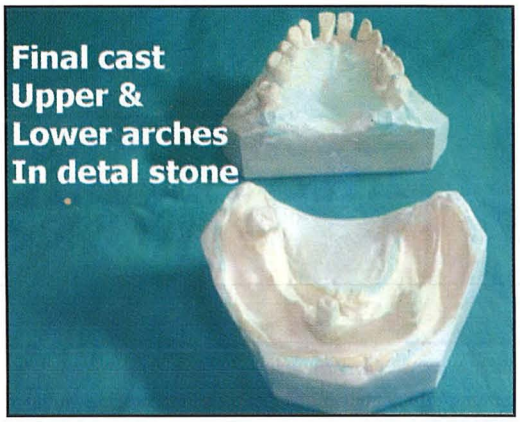


Fig. 2

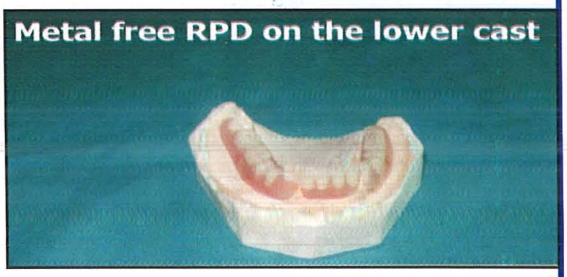


Fig. 4

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