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FIBER REINFORCED BRIDGE: CONSERVATIVE TREATMENT OPTION FOR SINGLE TOOTH REPLACEMENT.

Dental Science

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ABSTRACT

Abstract: The loss of anterior tooth can be hurtful to the patient both psychologically and socially. Fiber reinforced FPD can be a clinical alternative to conventional metal ceramic restoration as it advocates conservative preparation of tooth. It is especially useful for patients who cannot afford high cost of FPD, require it immediately or are periodontally not indicated for conventional FPD.

This is a case report of a patient who reported with missing anterior teeth. Use of conventional FPD in such a situation criticized because modern dental practice revolves around the principles of tooth preservation. So, in such cases it is regarded as best treatment option.

KEYWORDS

Ribbond Fiber, Conservative Bridge, Esthetics, Flowable Composite

Introduction:

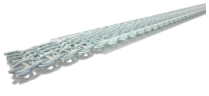
vThe loss of anterior tooth can be hurtful to the patient both psychologically and socially. Patients presenting with traumatised or lost anterior teeth require immediate attention for restoration of aesthetics and function.

vIn the 1970s and 1980s the concept of an acid etch bonded fixed partial denture was introduced.

v Conservative bridge preparation as the name suggests requires the minimal preparation of the abutment teeth and the fabricated bridge can be fixed to the adjacent natural teeth.

vConservative bridges can be classified according to the type of pontic as –

1. Natural tooth Pontic.
2. Acrylic tooth Pontic.
3. Composite tooth Pontic
4. Porcelain fused to metal Pontic.
5. All porcelain Pontic.



All these five (5) types share a common major advantage of conservation of the natural tooth structure in a single visit and patient can choose for a better treatment option in a future.

In addition, they can be viable alternatives to conventional fixed bridges in circumstances when age, expense & clinical impracticality like compromised periodontal conditions of abutments are considerations.

vThe Ribbond fibers, light curable flowable composite resins and micro filled light curable normal consistency composite resins were used to fabricate such kind of conservative bridges.

vRibbond fibers are basically a reinforced ribbon made of ultra-high molecular weight polyethylene fibers having a very high coefficient of elasticity and resistance to traction as a result of their closed stitched configuration.

vThese fibers improve the impact strength, modulus of elasticity and flexure strength of the composite material.

Case Report 1:

- A 34 years old male patient reported to the department of Prosthodontics and Crown & Bridge of Buddha Institute of Dental Sciences and Hospital with a missing maxillary lateral incisor.
- Patient was not willing to have a removable prosthesis and demanded a fixed prosthesis urgently for some social obligations.
- On examination it was found that the periodontal condition was not favourable and the central Incisor also had mobility approaching grade - II even after a complete periodontal prophylaxis.
- Patient was recommended a removable prosthesis, as a conventional fixed partial denture could not be fabricated because of his poor periodontal condition.
- He opted for a more conservative fiber reinforced bridge replacement.

- **Clinical Steps:**
- An acrylic tooth pontic of appropriate size was selected and was

trimmed and adjusted so that it fits properly in the edentulous space.
- Minimal preparation, almost like a dovetail was made in the palato-proximal aspect of the abutments.

- An approximately 3mm wide lingual channel on the pontic to fit the Ribbond fiber was prepared on the Acrylic tooth pontic.

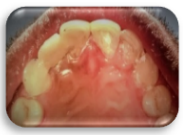
- Impression of the pontic along with the channel was made with elastomeric impression material.

- The pontic was then duplicated with composite after proper shade selection.

- The length of the "Ribbond fiber" was measured, cut and bonded with light curable flowable composite resin.

- The etchant was applied for 30 secs on the lingual channel of the teeth.
- Bonding agent was applied and cured.

- After this flowable composite was applied and premeasured fiber band was placed in the channel. Proper adaptation was achieved and light curing was done.
- Additional reinforcement was provided by topping of the flowable with nano filled composite.t was then carved and polished to give the final finish.
- The patient was informed about the importance of proper oral hygiene and was followed up periodically.



Discussion:
- Single tooth replacement options include conventional fixed partial dentures, a removable partial denture and a single tooth implant.

A resin bonded fixed partial denture allows for a more conservative tooth preparation. This case report describes a simple, economical and quick method to improve the esthetics of patient.

- **Case Report 2:**
- A 56 years old female patient reported with left lateral diastema between periodontally compromised maxillary left central and lateral incisors.

The patient was very particular about the cost and time of the treatment and opted for the economic Fiber Reinforced Conservative bridge options.
- A conservative bridge was planned and done using Ribbond fiber.

Discussion:
- In this case also we can see that fiber reinforced bridge replacement provides a good option to fulfil the patient's demand of having a fixed prosthesis within her economic limits.

Conclusion:
- In conclusion, these reports describe a simple, economical, rapid and conservative chairside technique for restoring a single anterior tooth having weak abutments using Ribbond fiber. This chairside technique does not require any laboratory procedure. Patient gets immediate benefit and the patient leaves the clinic happier and more confident.

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