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RESEARCH ARTICLE

MARGINAL SEAL IMPROVING TECHNIQUE IN ALL CERAMIC CROWNS.

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Abstract

Good marginal adaptation is the most important characteristic for the long-term success of complete coverage restorations. Marginal adaptation is essential for the prevention of microleakage. Improper fit can affect the fracture strength of silica-based ceramic crowns, reducing the strength and longevity of the restoration. Thus, a technique of seal improvement is described.

Introduction:-

The successful clinical longevity of the all ceramic crown is dependent upon its proper marginal seal that avoids complications like plaque retention, periodontal injury or recurrent caries[1,2]. The chances of secondary caries and periodontal disease in a well fitting crown are less as compared to poorly fitting crown. Marginal integrity is necessary for prevention of microleakage[3, 4]. Sealing discrepancy enhances plaque accumulation[5].Although the intaglio surface of a cast restoration may be modified to improve the fit and seating of metal or metal-ceramic restorations, internal fit modifications of all-ceramic restorations are not recommended[6].Numerous studies proved that such adjustments induce undetectable radial cracks on the intaglio surface resulting in restoration crack and failure during clinical use[7,8]. This article describes a technique that modifies the abutment tooth preparation/ core without intaglio surface modifications of the ceramic restoration to improve the sealing and seating of the all ceramic crown.

Procedure:

1. Evaluate the internal fit, margins, occlusion and interproximal contact of the ceramic restoration on the articulated cast.
2. Place the restoration on the tooth preparation/core and evaluate the marginal seal with explorer.
3. Air dry the intaglio surface of all ceramic crown and apply lubricating material to the intaglio surface of the crown with the help of a small brush.
4. The light body (President, ColteneWhaledent Pvt. Ltd. Switzerland) is extruded from automixing and dispensing gun onto the intaglio surface of the restoration.
5. Place the restoration on the abutment preparation/core and apply pressure.
6. Notice the binding spots of the restoration with tooth preparation/abutment core.
7. Mark the binding spots with red pencil.
8. Now, reduce the binding spots.
9. Repeat the procedure until the desired marginal seal is achieved.

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Fig 1:-Abutment preparation with gingival retraction

Fig 2:-Evaluation of marginal seal of all ceramic crown.

Fig 3:-Light body Impression of cement space

Fig 4:-Light body replica of cement space

Fig 5:-Binding sites of internal surface of all ceramic crown

Fig 6:-Sealing discrepancy improved

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