

A CONSERVATIVE APPROACH TO THE MANAGEMENT OF SEVERE EROSIVE TOOTH WEAR

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INTRODUCTION

- A 51 year old male presented from his GDP regarding concerns of the extensive erosive wear. The patient was assessed and treated at the Royal London Dental Hospital.
- **Presenting Complaint:** No complaints reported by patient, attendance was due to concern from GDP. No issues with function or aesthetics of his current dentition.
- **Social History:** Mr X works as a Warehouse Manager, working long hours and therefore consumes meals late at night. Smokes approximately 80 cigarettes per week for the past 18 years but does not consume alcohol. Consumes fizzy drinks 1-2 per week.
- **Relevant Medical History:** Suffers from Acid Reflux, managed by Ranitidine OD. Also suffers from Seasonal Asthma, which requires the use of Salbutamol PRN. No allergies were reported.

DIAGNOSES

1. Mild Localised Chronic Periodontitis potentiated by smoking
2. Caries LR7 (Occlusal)
3. Severe Tooth Surface Loss UR5 to UL5
4. Mild Tooth Surface Loss UR6, UL6, LR5, LL4, LL5 and LL7

PRE-OPERATIVE CLINICAL PHOTOGRAPHS



- Figures 1a-1c shows erosive tooth surface loss localised to the palatal surfaces of UL5-UR5
- Figure 1a shows minimal tooth surface loss affecting the labial surface
- Figure 1c portrays the intact enamel ring which is beneficial in adhesive resin bonding

TREATMENT OPTIONS

Restoration of palatal wear to restore function and aesthetics using:

- Direct composite resin
- No preparation Indirect composite veneers
- Indirect metal shims
- Combination of no preparation Indirect composite veneers on premolars and direct composite restorations canine to canine

TREATMENT PLAN

1. Oral Health Education, Smoking Cessation & Diet Advice (including Diet Diary)
2. Non-surgical Periodontal Therapy with Pocket Probing Depths
3. Restoration of LR7 (Occlusal) - with GDP
4. Indirect Composite Palatal Veneers UR5 - UL5 (No Preparation)

CLINICAL STAGES

Following completion of stages 1 to 3 of the treatment plan the following were undertaken:

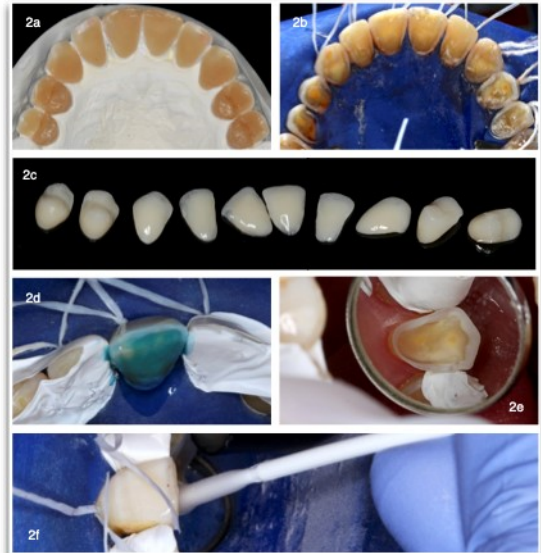
1. Impressions and facebow record for articulated study models and diagnostic wax up
2. Once we were happy with the diagnostic wax up, upper and lower heavy and light bodied silicone impressions were taken to create the master casts.
3. Master casts were articulated using a facebow and an interocclusal record at taken at an increased OVD in the returned arc of closure

LABORATORY TECHNICAL STAGES

1. Placement of Rubber-Sep™ (Kerr, Dental Lab Products, Orange, CA. 92867) to prevent the adhesion of the composite to the master cast
2. Build up of the veneer using DB3 Composite (Gradia, GC Corporation, Tokyo, Japan) just short of incisal edge and light cure for 5 minutes
3. Addition of E2 Enamel composite (Gradia, GC Corporation, Tokyo, Japan) and light cure for 5 minutes
4. Composite finishing using a selection of diamond burs, rubber discs
5. Surface application of Optiglaze™ (GC Corporation, Tokyo, Japan)



CEMENTATION OF INDIRECT COMPOSITE VENEERS



- Figures 2a-2f portrays the clinical stages of cementing the indirect composite veneers.
- Isolation using rubber dam and floss ligatures of individual teeth, to facilitate moisture control, was undertaken (Figure 2b).
- Micro-mechanical retention was increased by intra-oral sandblasting with aluminium oxide coated silica particles (30 µm) (CoJet™ 3M ESPE, Germany).
- Each tooth was treated with 37% Email Preparator Blue Etchant™ (Ivoclar Vivadent Limited, UK) (Figure 2d) and OptiBond FL™ (Kerr Corporations, Orange, CA. 92867) were applied as per manufactures instructions.
- The composite veneers were cemented with Nexus NX3™ (Kerr, Orange, CA. 92867) (Figure 2f) to maximise aesthetics and bonding.

POST-OPERATIVE CLINICAL PHOTOGRAPHS



- Post-operative clinical photographs following veneer cementation (Figure 3a to 3d)
- Veneer incisal overlap undertaken to maximise bonding area and aesthetics (Fig 3a).
- Hygienic supra-gingival veneer margins placed to aid effective plaque removal (Fig. 3b)

DISCUSSION

- The growing concern with respect to tooth wear, in all cohorts, poses restorative management challenges¹.
- The difficulty in restoring teeth with tooth surface loss localised to the palatal surfaces, challenges in adhesion to dentine affected by erosion and the presence of an intact enamel ring were factors for the decision to manage with indirect composite veneers. Moreover the resulting occlusion can be closely controlled with indirect restorations.
- Despite the higher laboratory costs with the use of indirect composite veneers; restoring with direct resin composite requires greater clinical time to ensure a predictable outcome, greater polymerisation shrinkage and challenges in achieving good contact points with the neighbouring teeth due to indirect vision and limited access.
- Despite an inferior life-span of composite restorations in the management of the worn dentition when compared to cast restorations; the ease of refurbishment and repair of composite and the use of a conservative approach to prevent further tooth tissue loss, whilst preserving the remaining tooth structure is imperative in such cases².

REFERENCES

Please email the author for a full list of references: Dr Sumeet Champaneri; sumeet.champaneri1@gmail.com