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A Conservative direct approach for management of a Generalised Tooth Wear patient

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INTRODUCTION

60 yr-old male, Registered with Apollonia House Dental Practice since 2011 as NHS patient; Regular attender

Presenting Complaint: On-going sensitivity with cold drinks

Functional concerns: **Reduce sensitivity. Had upper Co/Cr made 3yrs ago but uncomfortable now due to biting on claps from wear.**

Aesthetic concerns:. **Improve his smile as teeth look 'stubby' and restored to correct shape and height.**

- **Medical Hx**: on statins for high cholesterol
- **Social Hx:** high alcohol intake leading to hospitalization, non-smoker
- **Family Hx:** lives with son, self-employed

OH- Fair, brush 2x daily, no mouthwash or interdental cleaning, high MBFS

BPE- 111/121

Occlusion- Class 3 incisor relationship, loss of OVD, no dento-aveolar compensation

Dentition- shortened upper arch (SDA), minimally restored, generalised wear

INVESTIGATIONS

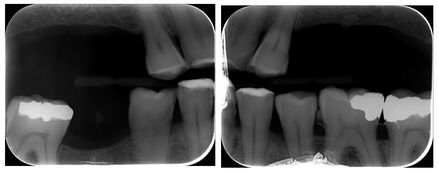


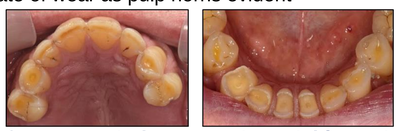
Fig 1. R+L BWs, no pathology evident, generalised bone levels 90%

DIET ANALYSIS- Excessive consumption of alcohol- >40 units/wk over 2yrs. Spoonful of cider vinegar in the morning and brushing afterwards

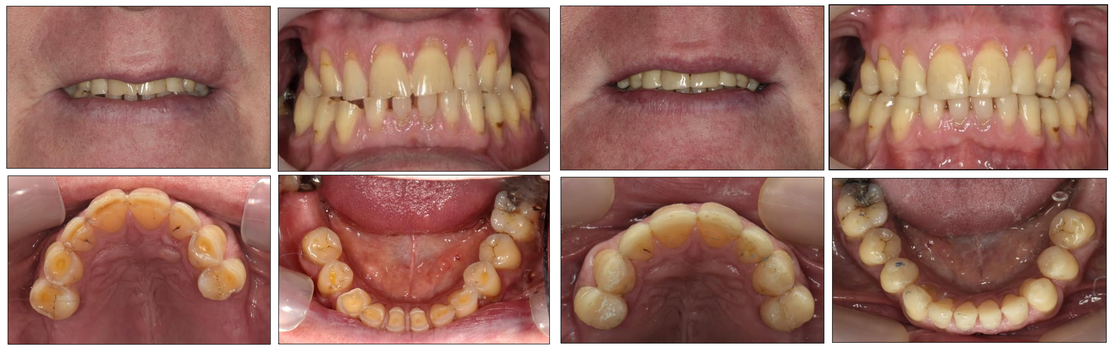
BEWE- 222/222 (MEDIUM RISK)

DIAGNOSES

- **Upper generalised and lower anterior moderate non-carious TSL**
- Erosion+ attrition occlusal, abrasion cervical
- Increase alcohol intake & Night time grinding
- Fast rate of wear as pulp horns evident

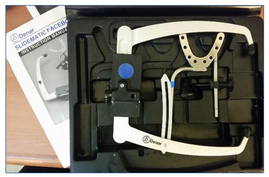


- **Lack of upper posterior support- unstable posterior occlusion**
- **Localised mild gingivitis**
- **Dentine hypersensitivity**– active wear
- **Generalised gingival recession both buccal and palatal surfaces**
- **Low caries risk**

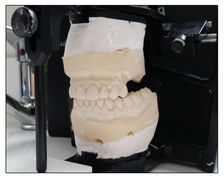


PRE-OPERATIVE **POST-OPERATIVE**

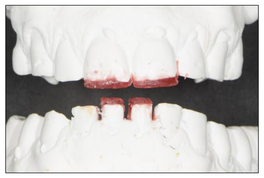
ARTICTULATION & INCREASING OVD & COMPOSITE BUILD UPS



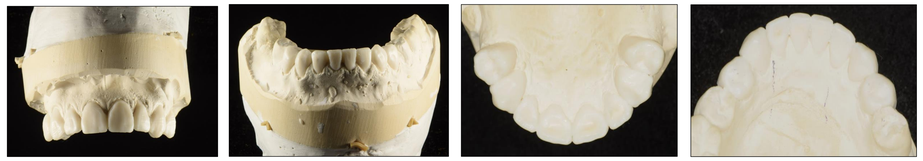
Denar facebow was used to record the occlusion



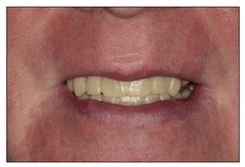
Articulated models on Denar (semi-adjustable) in centric relation



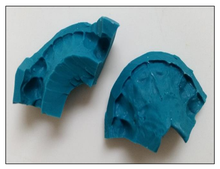
1.5mm guide for incisal tip for lab using ribbon wax



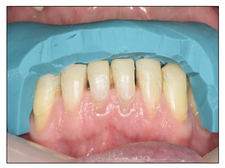
Lab made Diagnostic Wax-ups



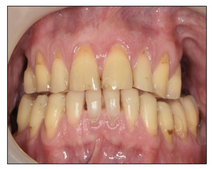
Temporised with UnoTemp for 2 days



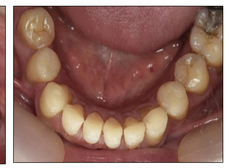
Putty index of the wax-ups in silicone



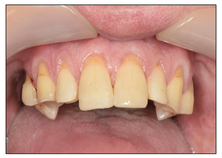
Lower teeth were built up first. LL1,LR1 was built up to the correct height initially



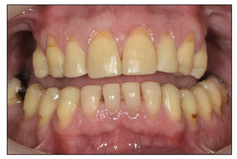
Occlusion was re-assessed as each tooth was built up

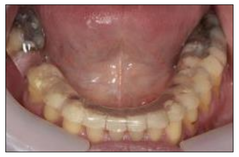


Lower 4-4 was built up with even occlusion



2 weeks later, UL1,UR1 were built up to the correct height using the index





Lower hard splints were made for protection

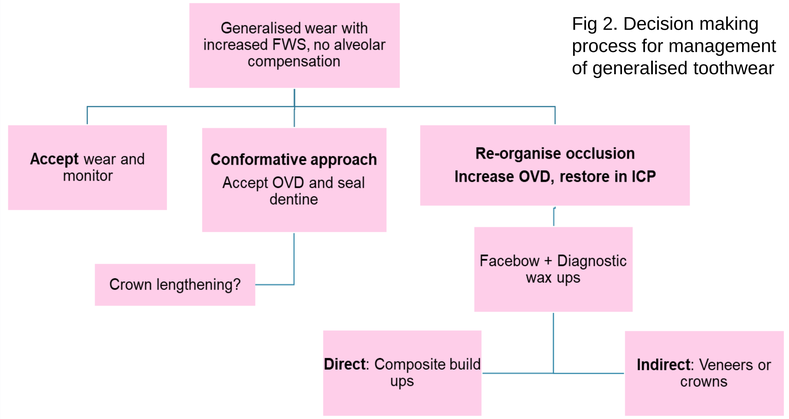


Fig 2. Decision making process for management of generalised toothwear

TREATMENT PLAN	
Immediate	Temporise UR3,4, UL3,4, LR1,2,3, LL1,2 with GIC, F- varnish
Stabilisation phase	Simple targeted scale and OHI (interdental aids, Sensodyne t/p). Diet analysis and alcohol cessation advice
Reconstructive	Facebow record and semi-adjustable articulation. Diagnostic Wax-ups. Direct restoration of upper and lower 4-4 using composite (CBU) Lab made hard occlusal acrylic splint
Review	1 month review to assess pt's tolerance to new occlusion
Maintenance	6-monthly recall (NICE, 2014) Review diet, OHI (2800ppm F- t/p, interdental aids), recession & early cervical lesions with F- varnish (2.2% NaF), occlusal splint. Maintenance of CBU

DISCUSSION

- **During 3 wk r/v- pt had adjusted well to new occlusion and was pleased with the overall outcome.**
- **Treatment planning & decision making-** OVD was increased by 3mm in total. Facebow + semi-adjustable was used as the occlusion was being re-organised. Diagnostic wax ups was preferred over free hand to ensure even incisal level and occlusal plane.
- **Success- Moderate to long term survival**, 6 occluding unit achieved to give stable occlusion (Poyser et. al., 2005). Increase in FWS cases- **Turner classification category 1** (Turner and Missirlian, 1984)
- **Control of wear rate-** monitor wear facets every 6/12, use SM to directly compare the rate of wear.
- **Preventative measures-** Review diet, alcohol intake and parafunctional habit. Reduce perio & caries risk with Duraphat 2800ppm.
- **Technical skills-** Dependent on reliable bonding to dentine. Partial use of rubber dam. 9 appts, over 6 hours in-surgery time. Use of putty index to achieve correct tooth height.
- **Long term tx** - Replace composite restorations. RCT if pulpal involvement (Redman et al., 2003) + conventional indirect restorations (veneers or crowns) could be considered if there is insufficient tooth remaining.

1.Poyser N., Briggs P., Chana H., Kelleher M., Porter, R. and Patel M., 2007. The evaluation of direct composite restorations for the worn mandibular anterior dentition–clinical performance and patient satisfaction. *Journal of Oral Rehabilitation*, *34*(**5**), pp.361-376.
2.Redman C., Hemmings K. and Good, J., 2003. The survival and clinical performance of resin-based composite restorations used to treat localised anterior tooth wear. *British Dental Journal*, *194*(**10**), p.566.
3.Turner K. and Missirlian D.,1984, Restoration of the extremely worn dentition. *The Journal of prosthetic dentistry*, *52*(**4**), pp.467-474.
4.Carlsson G. and Ingervall B., 1979, Effect of increasing vertical dimension on the masticatory system in subjects with natural teeth. *The Journal of prosthetic dentistry*, *41*(**3**), pp.284-289.
5.Gulamali A., Hemmings K., Tredwin C.and Petrie A., 2011, Survival analysis of composite Dahl restorations provided to manage localised anterior tooth wear (ten year follow-up). *British Dental Journal*, 211(**4**), pp.29-35.