

SCD

# Case Study

March 2018

Patient treated by Dr Joanne Gracey – 1082150

## Introduction:



The patient presented with heavily restored, discoloured and worn upper incisors. The patient requested an improvement in the shape and colour of the upper anterior teeth.

Options for treatment:

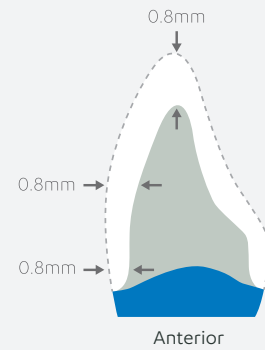
- 1) Direct composite restorations – this would include the replacement of large existing composites and secondly the provision of direct composite veneers.
- 2) Ceramic veneers.
- 3) Full coverage restorations/crowns.

The preferred option was the provision of crowns on the upper incisors. It was felt that the provision of direct composite restorations would be a short to medium term solution due to staining and failure due to lack of retention of the large composites.

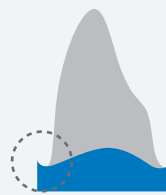
Veneers were considered inappropriate owing to the size of the composite restorations and therefore the lack of enamel to achieve sufficient bonding of the veneers to tooth substrate.

## Clinical Stages:

Teeth were prepared as per the Ultra-Translucent Zirconia (UZir) preparation guide above and taking into consideration the following:



**No!**



**"J"-Shaped Margin**



**Square Shoulder**

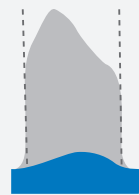


**Rough Margin**



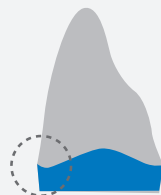
**Irregular Grooves**

**Avoid**



**Parallel Sides**

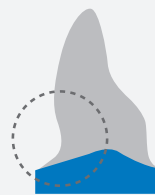
A proper cement space cannot be milled. The coping will be either too tight or too loose.



**Knife Edge**

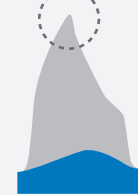
Procera®  
– mildly knife-edged margin is possible but will increase the risk of coping failure.

Lava™/PFZ  
– either a thin line of zirconia will be visible at the margin or alternatively, the emergence profile will have to be overbuilt.



**Undercut**

Undercuts and sharp edges are undesirable and need to be blocked out during production.

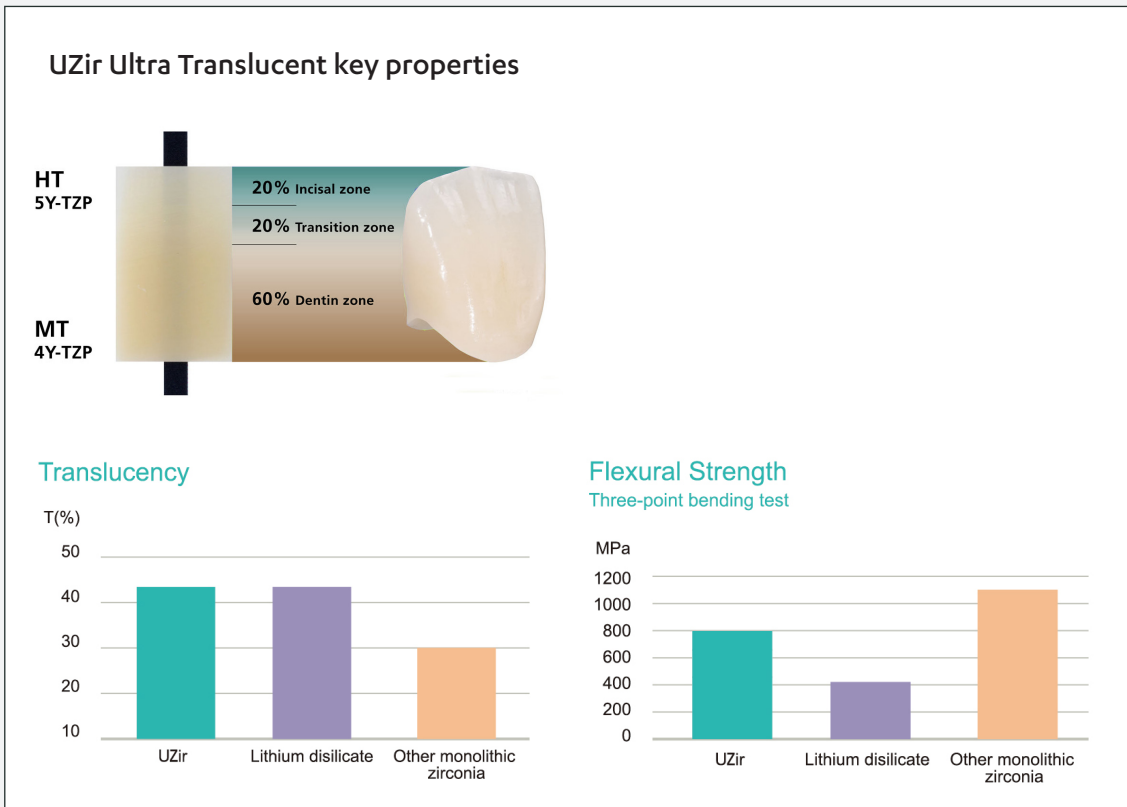


**Sharp Edge**

Impressions were taken using the PVS heavy body/light body impression material in a rigid tray – a double cord technique was used for gingival retraction. Silicon bite registration was taken in the intercuspal position and bis-acryl temporary crowns provided. Furthermore, shade was taken under good lighting conditions and approved by the patient.

## Techniques and materials used:

UZir was chosen in this case because the teeth were not heavily discoloured and there were no metal posts in place. This material requires less tooth reduction than traditional Porcelain-Fused-to-Metal (PFM) restorations and offers a desirable combination of aesthetics and flexural strength.



The restorations were designed and manufactured by Southern Cross Dental using CAD/CAM techniques which ensured accuracy of fit through the application of cutting edge milling technology.

The crowns were fabricated to the bisque stage, with their morphology being approved by the dentist, before they were glazed to finish.



The fitting surface of the UZir restorations was also sand blasted with a 50µm aluminium oxide grit to enhance surface adhesion to resin cement.

Finally, the occlusion was checked and oral hygiene instruction was provided to the patient.

#### Dentist feedback:



“I was delighted with the fit, margins and aesthetics of the UZir crowns. The need for less tooth preparation, especially in a case like this, is particularly advantageous. The patient was equally delighted with the result.”