

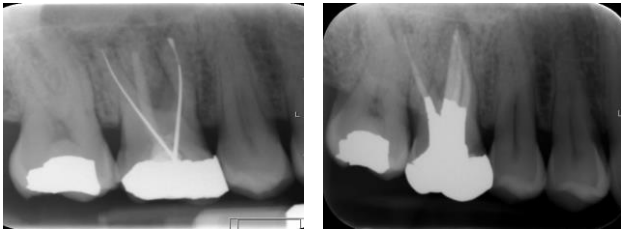
Preparation of a Full Gold Crown



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Foundations



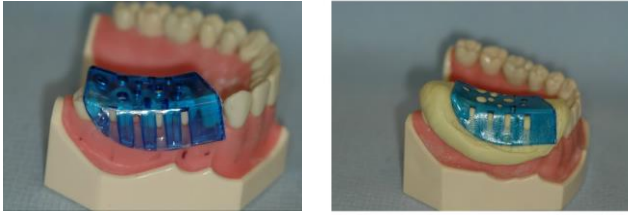
A healthy pulp or good endodontic treatment is a prerequisite for successful posterior crowns. The same applies to a good foundation restoration

Anatomy



Observe the anatomy of the tooth. In an upper first molar the biggest cusp is the mesio-palatal, followed by the disto-buccal, mesio-buccal and finally the disto-palatal. This should be maintained at the end of the crown preparation

The matrix



An accurate matrix is essential for creating a predictable interim restoration

A sectioned impression tray is created using a hot wax knife. No adhesive is required

Addition silicone putty is used to create a localised impression

NB: Do not push the tray towards the teeth as firmly as when you take a normal impression of the tooth

The matrix



This leaves a significant thickness of impression material.

Carefully remove the putty when set

Trim the putty to include $\frac{1}{2}$ of the tooth in front and $\frac{1}{2}$ of the tooth behind

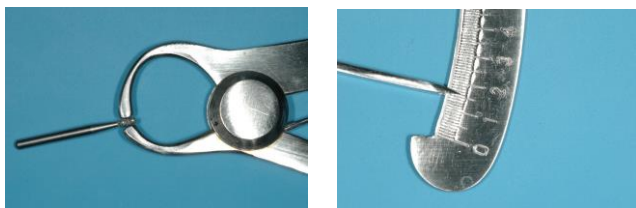
Trim the gingival areas so that only 2mm of gingival tissue is left on the matrix putty

The bur



Know the thickness of your burs!

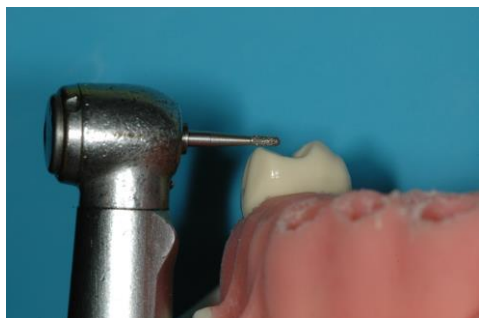
The bur



The shank is always 1.6mm and can be used to assess the depths of margins



Occlusal reduction



Follow the cusp angles of the tooth when preparing the occlusal surface

Reduction should be with a parallel diamond bur of 1mm thickness



Occlusal reduction



If you do not, as illustrated above, you will flatten the occlusal form

Thus excessive reduction will occur on the cusps and little/no reduction in the fossae/grooves



Occlusal reduction



Occlusal view of the occlusal surface after occlusal reduction

Occlusal reduction



Buccal view of the occlusal surface after occlusal reduction

Cusp bevels



There needs to be separate functional and non-functional cusp bevels.

The fossae often need to be reduced separately to the cusps

The total occlusal reduction is 1 ½ mm over the functional cusp and 1mm everywhere else

Cusp bevels



Occlusal view of the occlusal surface after occlusal reduction and cusp bevels

Cusp bevels



Occlusal view of the occlusal surface comparing occlusal reduction (left) versus occlusal reduction and cusp bevels (right)

Buccal reduction



Buccal reduction with a tapered diamond bur held parallel to the long axis of the tooth.

The tip of the bur is 1mm and will leave a 1/2mm chamfer margin cervico-buccally

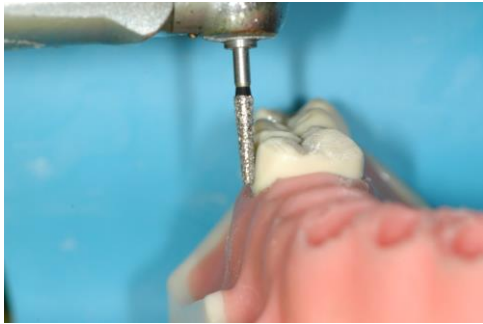
A second plane of buccal reduction is needed between the cervico-buccal plane and the non-functional cusp bevel

Buccal reduction



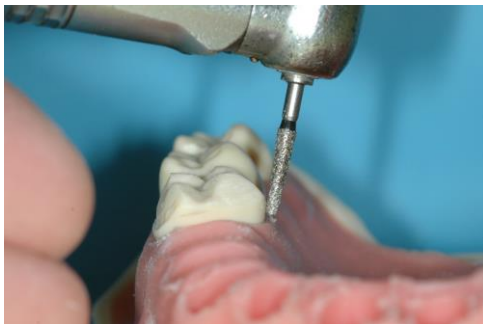
Occlusal view after buccal chamfer

Palatal reduction



Prior to preparation of the palatal surface the bur is held parallel to the buccal reduction and then moved to the palatal surface

Palatal reduction



If this is not done correctly the buccal and palatal surfaces will be undercut in comparison to each other

Palatal reduction



Occlusal view after palatal chamfer

Palatal reduction



A second plane of palatal reduction is needed between the cervico-palatal plane and the functional cusp bevel

Buccal/Palatal check



If performed correctly, both the buccal and palatal chamfers may be visualized simultaneously (with one eye closed)

This can be confirmed using the tip of 2 probes

Buccal/Palatal check



The total occlusal convergence can also be checked with 2 probes

Proximal reduction



Proximal reduction with a needle bur leaving a sliver of tissue to protect the proximal aspects of the adjacent teeth

Proximal check



The tapered diamond is used to complete the proximal reduction

Polishing



Advanced Restorative Care

Polishing stones can be modified using a diamond bur as illustrated

The end



Advanced Restorative Care

The buccal view after polishing

The end



Advanced Restorative Care

The occlusal view after polishing

Anatomy



The anatomy drawn on illustrating 2 separate palatal planes of reduction and the palatal chamfer margin

Anatomy



The anatomy drawn on to the occlusal surface illustrating that the cusp morphology and proportions have been maintained

Any questions?



Email me if you have any questions

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Good luck!