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Complete Ceramic Crown (porcelain Jacket Crown) :

The most esthetically pleasing fixed restoration, because there is no metal understructure to block light transmission. It can resemble natural tooth in terms of color and translucency than any other restoration.

Since it is made entirely from ceramic substance, it is the weakest type of crown. Most of the time it is used as single restoration on upper or lower incisors.

Indication :

- High esthetic requirement
- Considerable proximal caries
- Endodontically treated teeth with post & core
- Incisal edge reasonably intact
- Favorable distribution of occlusal load.

Contraindication :

- When superior strength is required
- Thin teeth facio-lingually
- Unfavorable distribution of occlusal load
- Insufficient coronal tooth structure for support (very short teeth)
- Edge to edge occlusion
- Bruxism

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Advantages:

- Superior esthetic
- Good tissue response even with subgingival margins (biocompatible)
- High retention since it can be attached and bonded.

Disadvantages:

- Reduced strength compared to metal crowns.
- Proper preparation is extremely critical
- Among the least conservative preparation
- Brittle nature of the material
- Recommended as single restoration.

Tool Preparation (PTC).

Preparation requirement:

- 1) A shoulder of uniform width (1.5 mm) is used as gingival fl to provide a flat seat to resist the force directed from incisal.
- 2) Incisal edge should be flat and prepared with slight inclination lingually.
- 3) All sharp angles of preparation should be slightly rounded to reduce the danger of stress concentration and fracture.
- 4) It should be avoided on teeth with edge to edge occlusal relation.

Step in preparation:

(A) Incisal Reduction:

The aim of this step is the complete reduction of incisal edge that should provide 1.5 - 2 mm of clearance for porcelain in all masticatory movement. This step is extremely important to get cosmetically pleasing restoration with adequate strength.

- Flat end taper diamond bur is used, placed parallel to the incisal inclination (for post. teeth 2 mm occlusal clearance is needed for all cusps).

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- DOG 2-3 mm in depth or made on the incisal edge using a flat-end tapered fissure bur, parallel to the incisal inclination of the prepared incisal edge.
- Any tooth structure between D.O.G. should be removed using the same bur at the same angle (1.5 mm)
- Occlude in centric & eccentric occlusal relation.

B. Labial (facial) Reduction:

Two planes reduction:

Whenever needed, reduction should be done in 2 planes corresponding to the 2 geometric planes of the surface. Incisal plane and gingival plane.

Incisal plane:

- Three DOG (1mm) are placed, these grooves should be parallel to the inclination of this area.
- Any tooth structure between D.O.G. should be removed using flat-end tapered fissure bur to create shoulder FL

Gingival plane:

- DOG (1mm) are placed in gingival part of lingual surface parallel to the long axis of the tooth.
- Any tooth structure below D.O.G. should be removed using flat-end tapered fissure bur to create shoulder FL.

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(C) Lingual reduction:

As for PFM but with deeper reduction (1mm).

(a) Cingulum area reduction:

- D.O.G of 0.2mm placed in the center.
- Small wheel or pear shaped diamond bur is used (following the inclination of the tooth) to reduce this area.

(B) Lingual axial reduction:

- D.O.G of 0.8mm placed parallel to the long axis of the tooth.
- Flat-end T.F.B is used to reduce this area using the same angle (to create shoulder F.L)

Recommended as single restoration.

Acrylic Jacket Crown:

Acrylic Jacket Crown is totally made from tooth colored acrylic resin, it can be near perfect in appearance when fitted, but it suffers from discoloration and loss of contour later on. The poor adaptation is great disadvantages of acrylic crown.

Acrylic jacket crown is used in treatment of carefully selected patient such as young patient as a temporary crown until the final restoration made.

The preparation of the tooth is basically the same as that for porcelain jacket crown.

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Disadvantages:

- 1) poor marginal fitment
- 2) poor tissue response
- 3) Discoloration with time
- 4) Loss of contour (wax cavity)
- 5) Unhygienic.

Partial Veneer Crown (3/4 Crown, 7/8 Crown):

It is a cast metal crown restoration that covers only a part of the clinical crown.

Three quarter (3/4) Crown: It is most commonly used partial veneer crown restoration. Generally it covers all the tooth surfaces except the buccal or the labial surface. Since it doesn't cover the entire axial coronal surfaces, it tend to be less retentive and resistance than full veneer crown. It can be used for anterior or posterior teeth, as single restoration or as a retainer for short span bridge.

Uses:

- A retainer for short span bridge.
- A single restoration.