

SUBMITTED BY ✦ AYESHA ILYAS.

SUBMITTED TO ✦ SIR. USMAN.

ID NO ✦ 13758.

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Date: _____

(1)

❖ TOOTH PREPARATION FOR PORCELAIN CROWN JACKET (PJC) ❖

❖ PORCELAIN JACKET CROWN ❖

A jacket crown is a full porcelain ceramic covered crown which is used to protect the entire surfaces of a tooth. Crown are fitted over the remaining part of the tooth. Which make it strong and give it shape and contour of a natural tooth.

Full Coverage restoration: It is artificial non-metallic restoration used to cover the all surfaces of clinical crown. It is made only from porcelain.

❖ TOOTH PREPARATION FOR PJC ❖

The tooth preparation for porcelain jacket crown has a template for all ceramic crowns with one notable exception.



Date: _____

(2)

Some of the latest all-ceramic crowns now have sufficient strength with an axial tooth reduction of as little as 0.6 mm.

The PJC remained a very popular and widely used restoration for many years. There was concern over the bulk of tooth tissue reduction and the inability to withstand occlusal loading.

To address these concerns, research concentrated on:

- * Decreasing the bulk of tooth tissue reduction required to place an all ceramic crown.

- * To use of computer aided design and computer aided manufacture (CAD-CAM) and developed of glass ceramic metals with significantly increased strength.

There is now scope to use all ceramic crown on any tooth & increasingly challenging occlusal environments.

Date: _____

(3)

DEPTH ORIENTATION GROOVES :

A flat end tapered diamond is first aligned with the incisal portion of facial surface and two vertical cuts are made of full diameter of the diamonds, fading out at the "break" where the curvature of facial surfaces is greatest. Three similar grooves are made maintaining same instruments parallel to the gingival segments of the facial surfaces.

Two incisal edges orientation grooves 2.0 mm deep are made.

USES :

The porcelain jacket crown (PJC) are used for a tooth shaped protective cap which is used as a covering over a tooth that is chipped, broken or otherwise damaged to create a permanently restored functional & aesthetic natural look to the tooth.

Date: _____

(4)

CLASSIFICATION ❖

They are classified according to their materials used in their construction:

(i) Metal Crown (restoration)

(ii) Non-metal Crown.

(iii) Combination of both metal and non-metal crown (constructed as a thin metal shell covered by layers of porcelain).

INDICATIONS ❖

(i) For anterior teeth (especially incisors)

(ii) For severely discolored anterior teeth.

(iii) For over an existing post and core substructure.

CONTRAINDICATIONS ❖

(i) In posterior teeth (when maximum resistance and retention is needed).

(ii) In case of edge to edge or overbite occlusion (overbite: is the vertical overlap of the upper incisors teeth over the lower ones).

(iii) As a retainers for FPD.

Date: _____

(5)

(iv) In case of tooth with short clinical crown (no enough tooth structure to support the porcelain).

ADVANTAGES ❖

The porcelain jacket crown advantages are:

- (i) They are best for use on the incisors.
- (ii) They are very strong.
- (iii) They have the best cosmetic effects of all their dental restorations.

DISADVANTAGES ❖

There disadvantages are:

- (i) They have high risk of fracture (b/c they are brittle).
- (ii) Ceramic crowns may be cemented with zinc phosphate, glass ionomers or dual polymerizing resin cement such as enforce with fluoride.

Ceramic crowns that have etched initially & bonded with composite resin cement

Date: _____

(6)

with Composite resin Cement are 50% stronger than similar Crowns cemented with Zinc phosphate cements.

TECHNICAL CONSIDERATIONS ❖

The porcelain jacket crown are made using the platinum foil matrix technique.

platinum foil matrix ::

The porcelain jacket crowns are constructed with high fusing Feldspathic porcelains.

A platinum foil is first adapted to the die. The platinum foil function as matrix. It support the porcelain during condensation and firing.

After the completion of restoration the platinum foil matrix is discarded.

Condensation and firing ::

The platinum foil matrix is carefully removed from the die and core porcelain is carefully condensed on to it.

Date: _____

(7)

it is then placed in the furnace and fired. After cooling the resting of the body is build up using dentin, enamel and other porcelains.

Removing the foil.

After completion the restoration the platinum foil is gently teased out and discarded. This can be quite difficult.

PROCEDURES :

- * Consultation and Take x-rays.
- * preparation of tooth by removing a small amount of tooth structure.
- * Taking impression of your tooth. This is done by a mould filled with dental putty which will asked to bite into. then we sent impression to lab where crown are fabricated in a few days.
- * Then placement of a temporary crown until your jacket crown will be ready.
- * Fitting & Bonding of permanent crown when it is ready. The Dentist will give a final cleaning & polishing.

