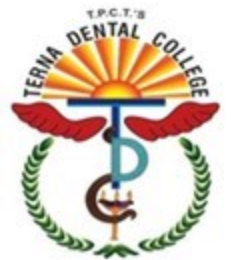


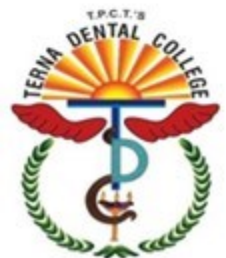
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**CLASS III AND CLASS V
RESTORATION.**



Objectives

- **To restore distal surface of maxillary and mandibular canines when moisture control is difficult.**
- **to restore the cavity involving Cervical third area of teeth using Amagam and Composite restorative material**



Contents

Introduction

indication

contraindication

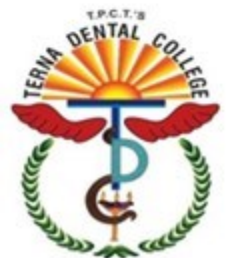
advantages

disadvantages

Clinical technique for Class 3 amalgam restorations

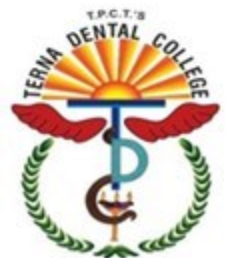
Clinical technique for Class 5 amalgam restorations

Clinical technique for Class 3 & class 5 Direct composite restorations



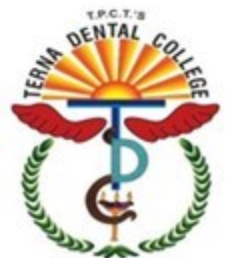
INDICATIONS:

- For esthetic reasons, amalgam is rarely used for class III. It is only indicated for distal surface of maxillary and mandibular canines if:
 - (1) the preparation is extensive with only minimal facial involvement,
 - (2) the gingival margin involves primarily cementum, or
 - (3) moisture control is difficult.

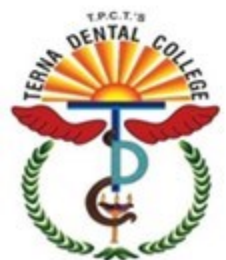
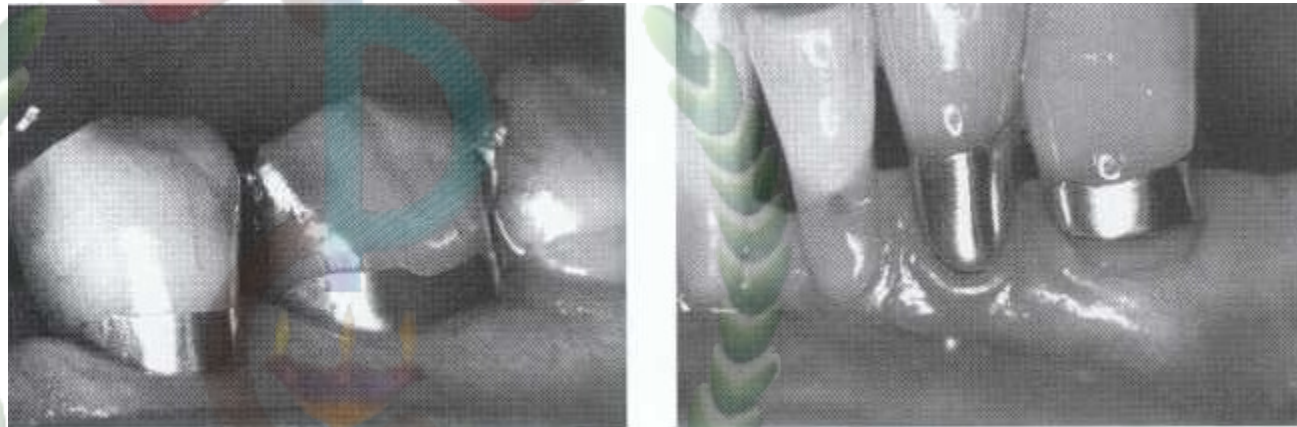
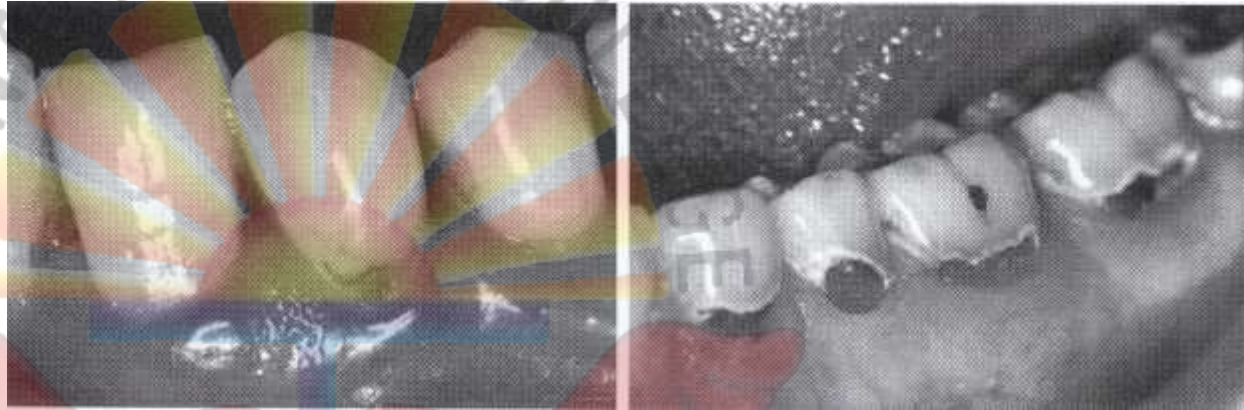


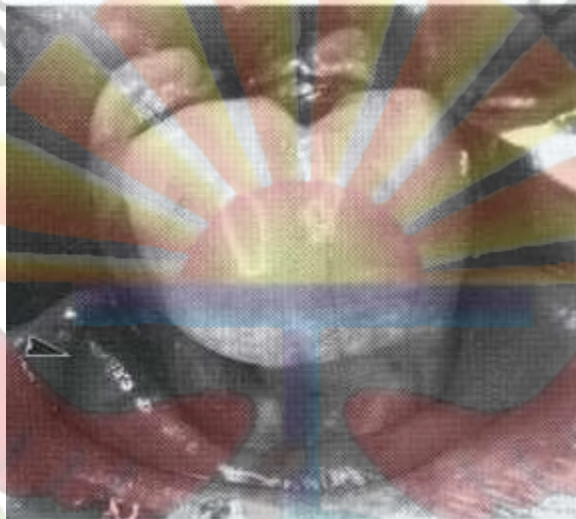
For Class V

- Indications are same as for class III, and also for
- Restoration on partial denture abutment teeth, because amalgam is more resistant to wear as clasps move over the restoration.
- When the carious lesion extends gingivally enough that a soft-tissue flap must be reflected for adequate access and visibility

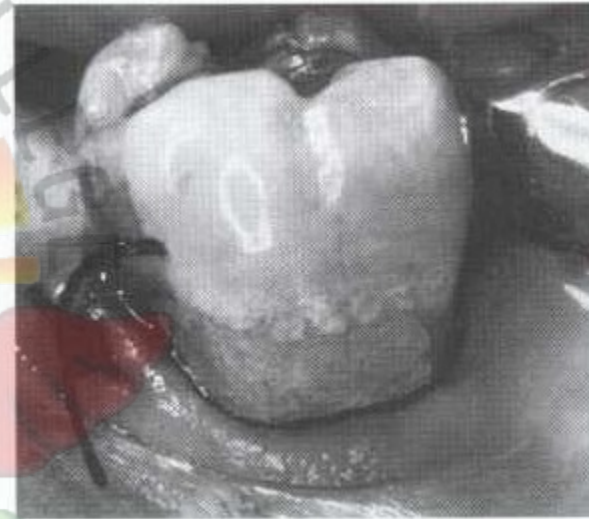


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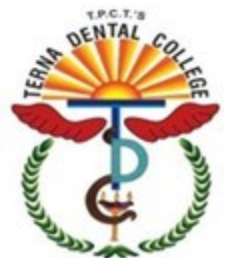
**A . class V preparation
requiring flap
procedure
(arrow).**

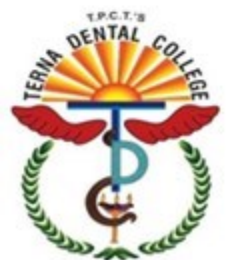
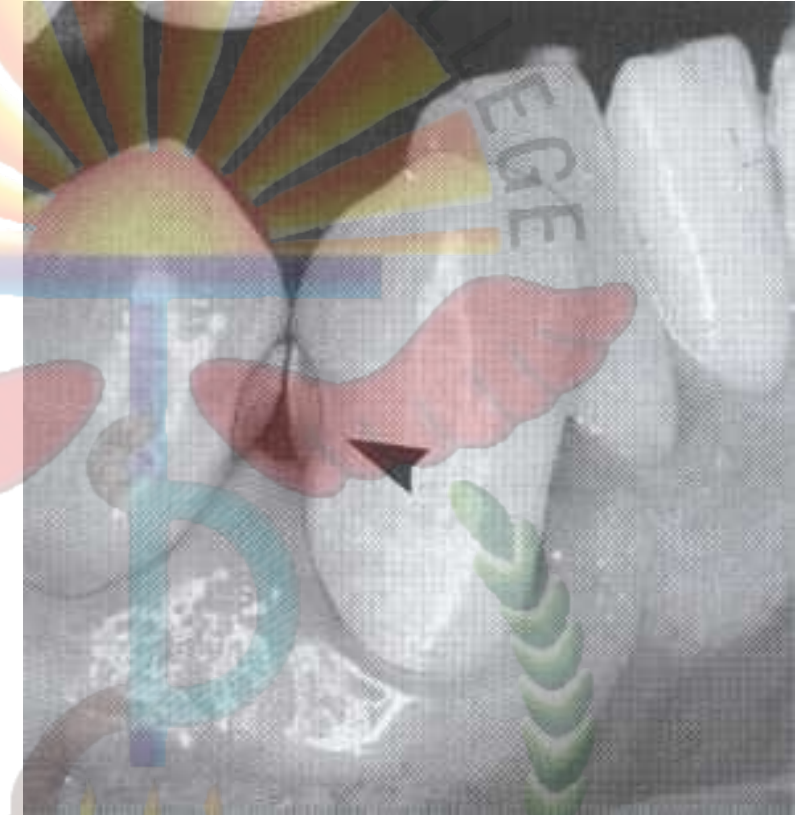


**B, Completed
restoration with
suture in place**

CONTRAINDICATIONS

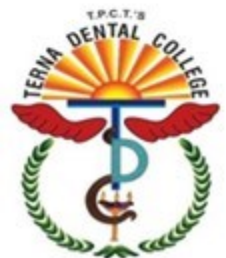
- Classes III and V amalgam restorations are usually contraindicated in esthetically important areas





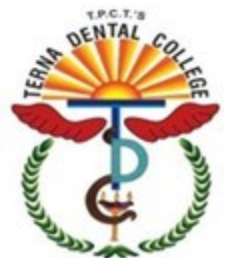
ADVANTAGES

- stronger
- Generally easier to place
- less expensive
- Because of its metallic color, easily distinguished from the surrounding tooth structure. Therefore easier to finish and polish without damage to the adjacent surfaces.



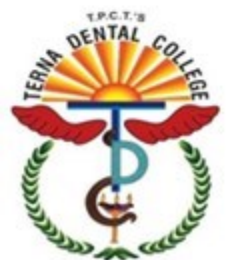
Disadvantages

- Metallic and anesthetic.
- less conservative preparation than that for most esthetic restorative materials.
- The potential for mercury contamination.



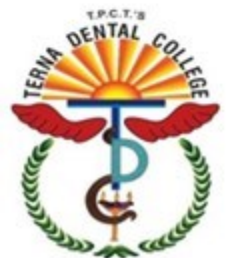


CLINICAL TECHNIQUE FOR CLASS III AMALGAM RESTORATIONS



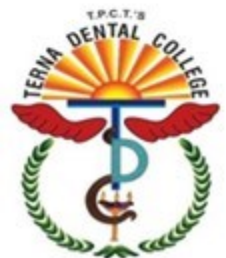
INITIAL PROCEDURES

- 1. Treatment plan
- 2. Radiographs,
- 3. Anticipation of gingival extension of the preparation.
- 4. Anesthesia
- 5. Prewedging



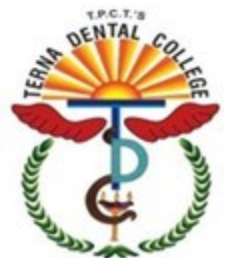
Prewedging in the gingival embrasure of the proximal site to be restored for:

- (a) protection of the soft tissue and rubber dam,
- (b) access because of slight separation of teeth,
- (c) reestablishment of the proximal contact.
- 6. Rubber dam or cotton roll isolation



Tooth Preparation (for the Distal Surface of the Maxillary canine)

- **A lingual access preparation of the distal surface**
- of the maxillary canine is recommended because
- the use of amalgam in that location is more likely. However,
- a facial approach for a mandibular canine may be
- indicated if the lesion is more facial than lingual.



Outline form

Entry point:



. A, Bur position is perpendicular to enamel surface at point of entry and directed toward cavitated, carious lesion

B, Initial entry should isolate proximal enamel, while preserving as much of the marginal ridge as possible.

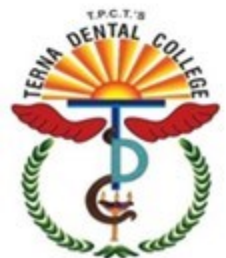
C, Initial cutting reveals DEJ (arrow).

Initial axial depth

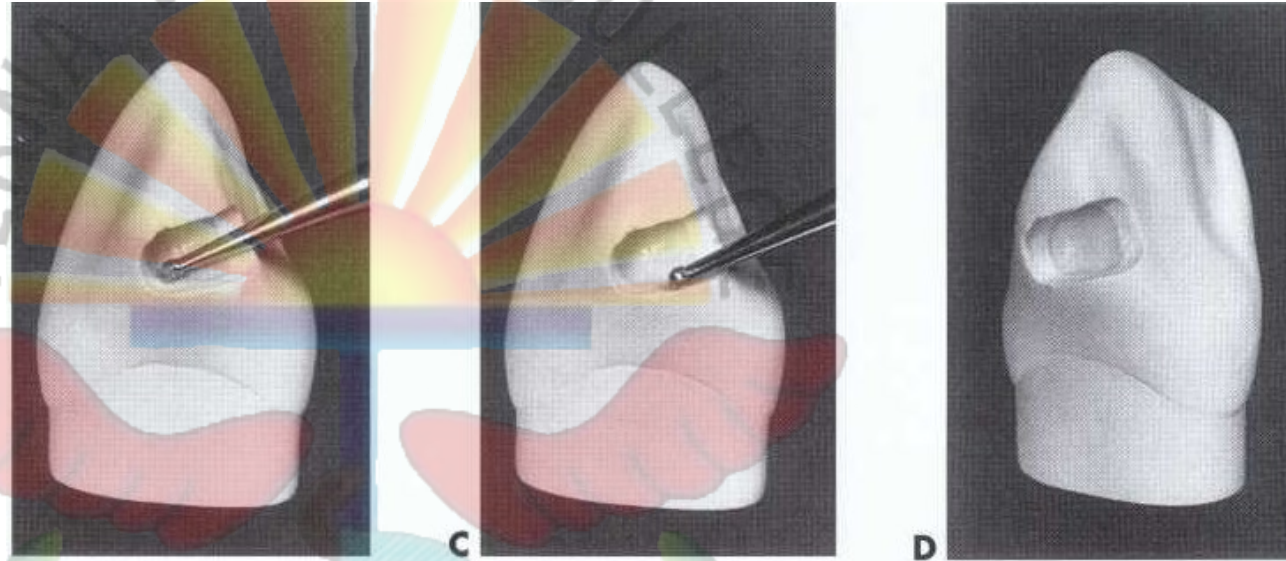
- 0.5 to 0.6 mm inside the DEJ

or

At a 0.75- to 0.8- mm axial depth when the gingival margin will be on the root surface (in cementum)



Refining proximal portion

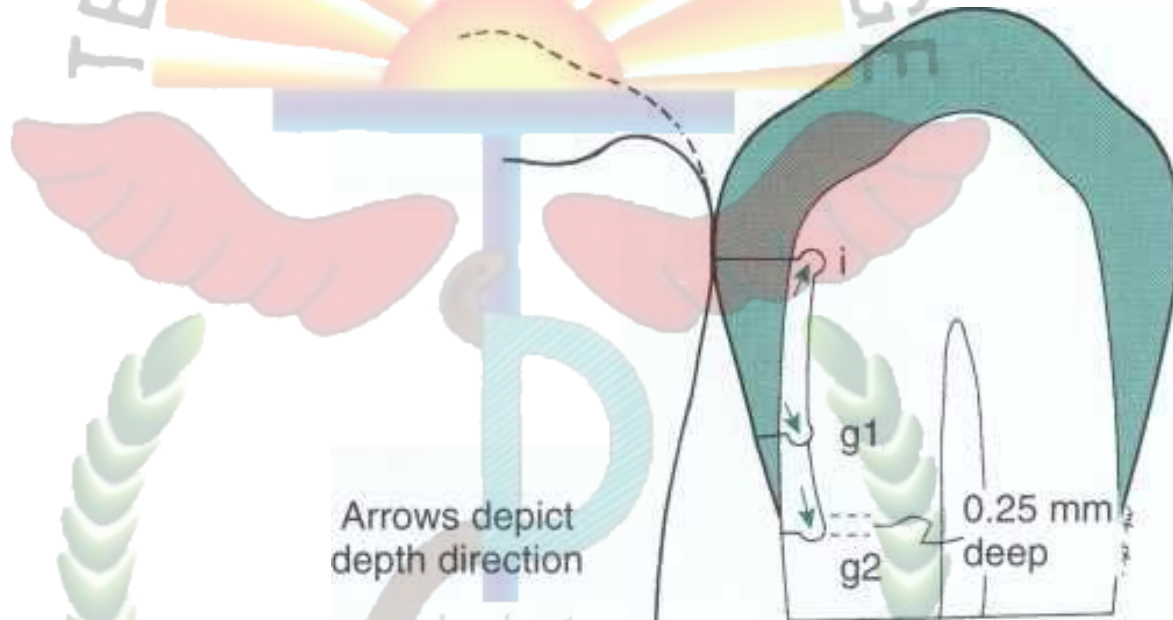


Round bur is used to shape preparation walls, define line angle, and initiate removal of any undermined enamel along gingival and facial margins.

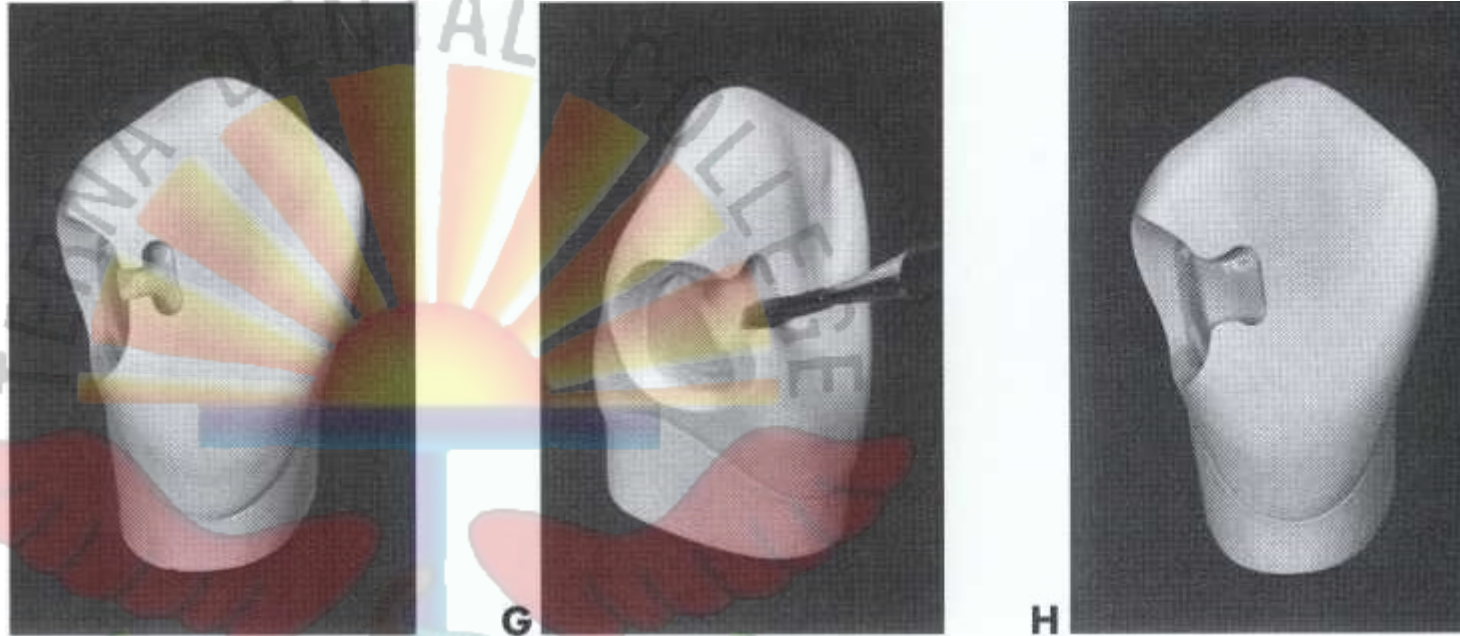
Tooth preparation completed except for final finishing of enamel margins and placing retention form.

RETENTION FORM

Mesiodistal vertical section showing location, Depth & direction (arrows), of retention form



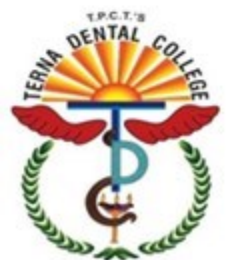
i, Incisal cove;
g1, gingival groove, enamel margin;
g2, gingival groove, root surface margin



Lingual dovetail providing additional retention for extensive amalgam restoration

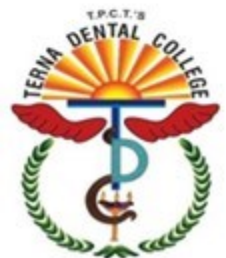
RESISTANCE FORM

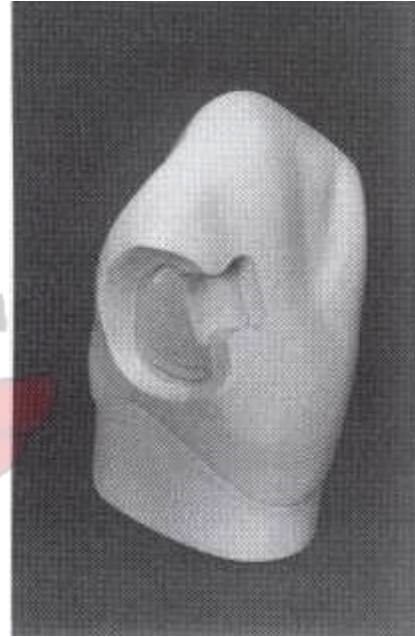
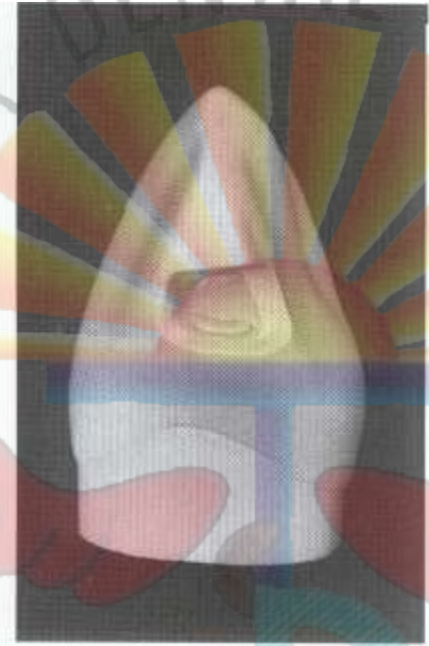
- Axio-pulpal line angle (i.e., the junction of the proximal and dovetail preparation) is beveled with the help of GMT or bur to increase the strength of the restoration by providing bulk and reducing stress concentration



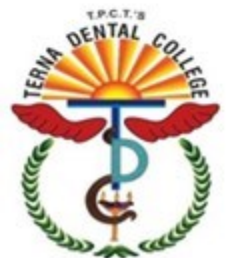
The completed tooth preparation should be cleaned & carefully inspected for:

- All caries has been removed,
- Depths are proper,
- Proper cavosurface margins
- Distinct & rounded internal line angles
- Adequate retentive features.





Completed Class III tooth preparation for amalgam restoration



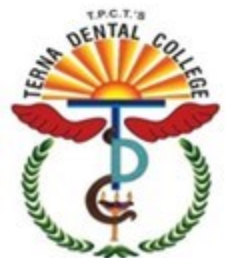
RESTORATIVE TECHNIQUE

- **Matrix Placement.**

The wedged, compound-supported matrix may be used for the Class III amalgam restoration.

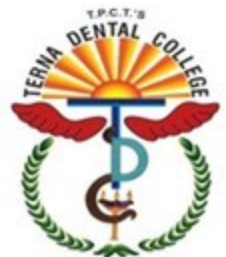
- *Condensation and Carving.*

- *Finishing and Polishing.*



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CLINICAL TECHNIQUE FOR CLASS V AMALGAM RESTORATIONS



Starting Class V tooth preparation

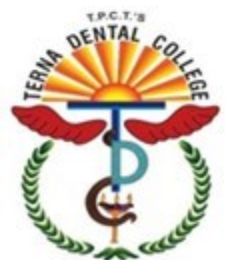


. A, Bur positioned for entry into carious lesion. B, Entry cut is the beginning of outline form having a limited axial depth (1.0 to 1.25 mm).

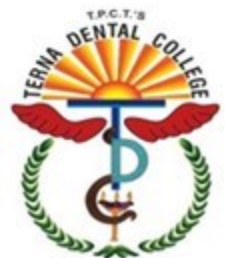
B. Once the entry is made, the bur is maintained to ensure that all external walls are perpendicular to the external tooth surface and thereby parallel to the enamel rods

Axial wall

- Should be in sound dentin, unless there is remaining infected caries or old restorative material.
- axial wall depth 0.5 mm inside the DEJ.
- axial wall follows the mesiodistal and incisogingival (i.e., occlusogingival) contours of the facial surface of the tooth, so it will usually be convex in both directions.
- axial wall will be slightly deeper at the incisal wall, where there is more enamel (i.e., approximately 1 to 1.25 mm in depth) than at the gingival wall, where there may be little or no enamel (0.75 to 1 mm in depth).

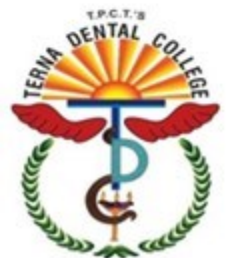


- The mesial, distal, gingival, and incisal walls of the tooth preparation are perpendicular to the external tooth surface, they usually diverge facially.

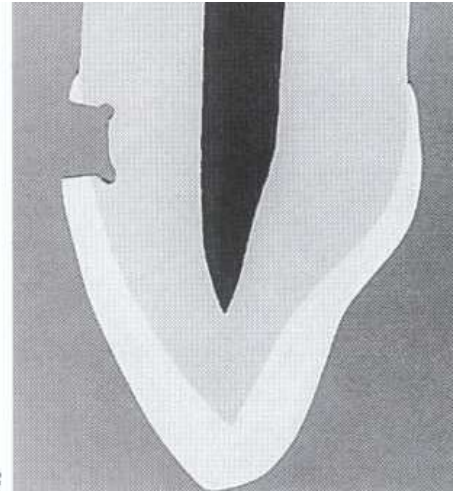
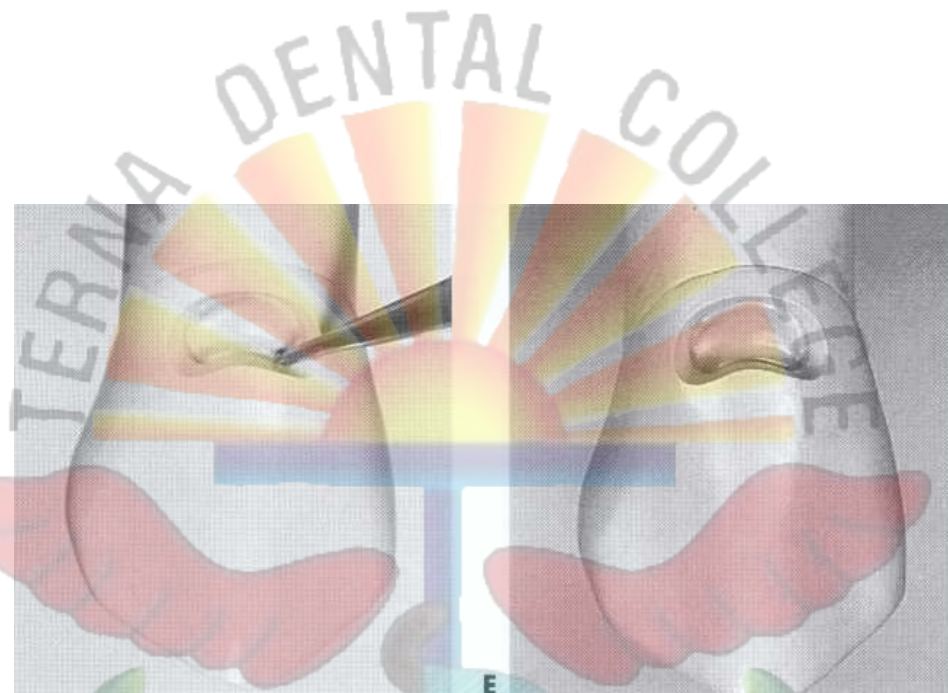


Retention form.

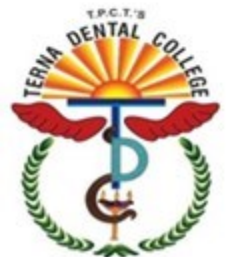
- Two retention grooves, one along the incisoaxial line angle and the other along the gingivoaxial line angle



T.P.C.T.'S

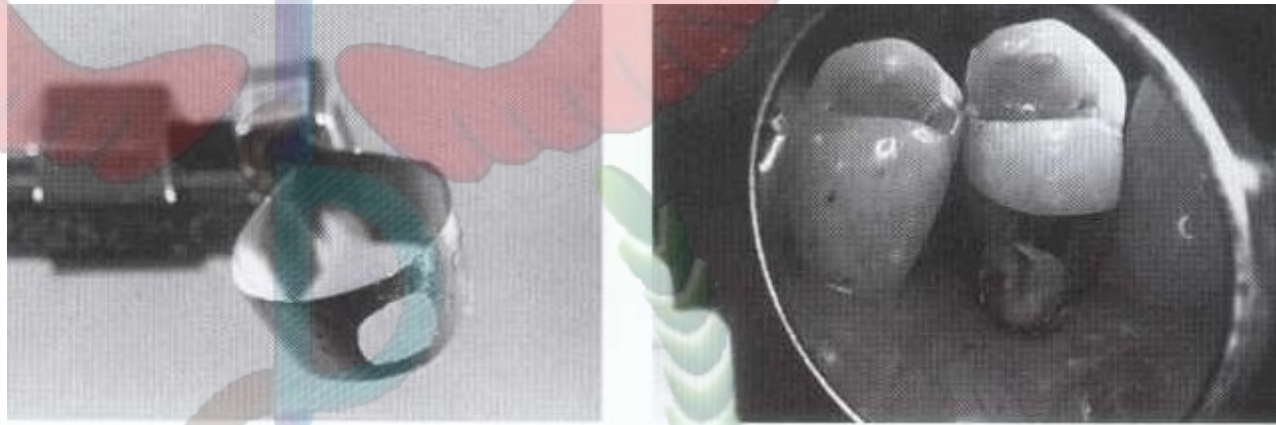


0.25 deep Retention grooves in gingivoaxial and incisioaxial line angles & convex axial walls.

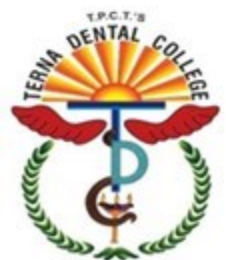


RESTORATIVE TECHNIQUE

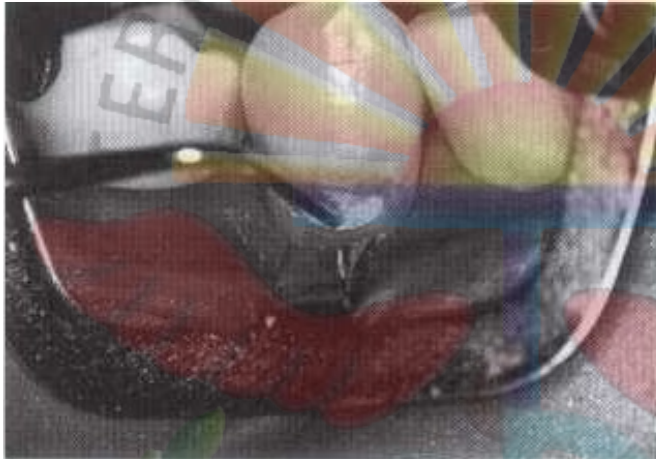
Matrix Placement



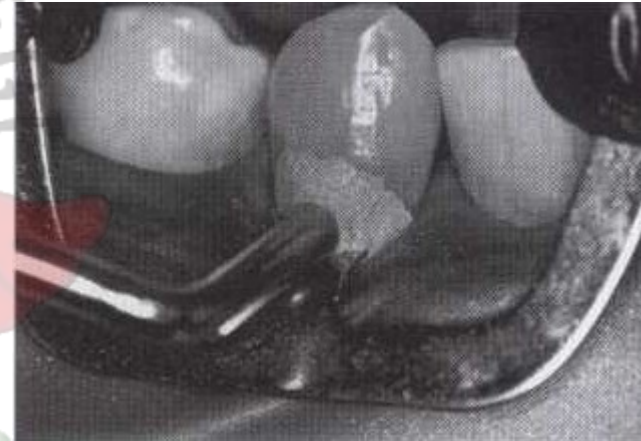
Conventional Tofflemire matrix with window cut into band to allow access for condensation



AMAIGAM CONDENSATION

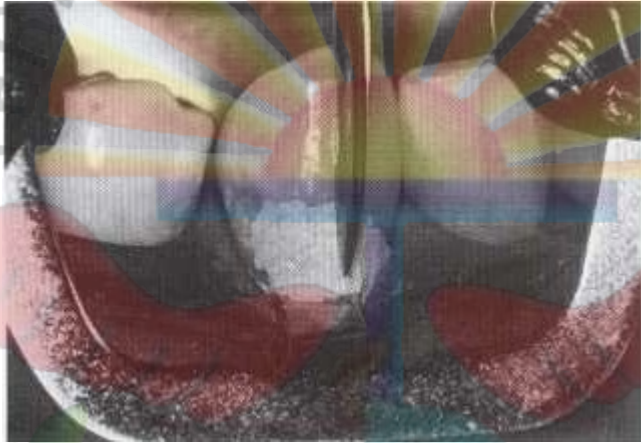


Condense first into retention grooves with small condenser.



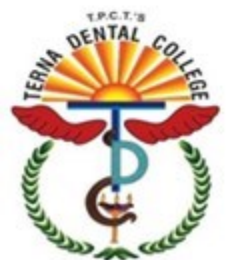
Next condense against mesial and distal walls. & Overfill to provide sufficient bulk to allow for carving.

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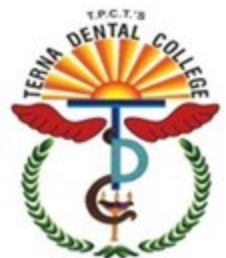
CARVING

CONTOURING

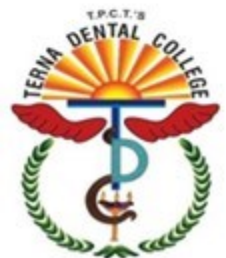


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CLINICAL TECHNIQUE FOR DIRECT CLASS III & V COMPOSITE RESTORATIONS

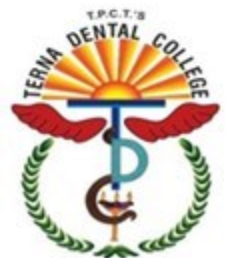


- Indication, contraindication, advantages and disadvantages are relative to amalgam.



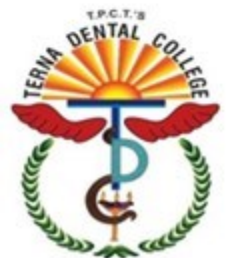
TOOTH PREPARATION

- The shade of composite must be selected before the tooth preparation started.
- For class III there are two Approaches ---
 - a.lingual
 - b.Facial



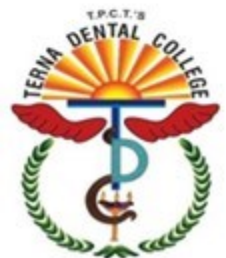
Advantages of lingual approach:

- 1. The facial enamel is conserved for enhanced esthetics.
- 2. Some unsupported, but not friable, enamel may be left on the facial wall.
- 3. Color matching of the composite is not as critical.
- 4. Discoloration or deterioration of the restoration is less visible.



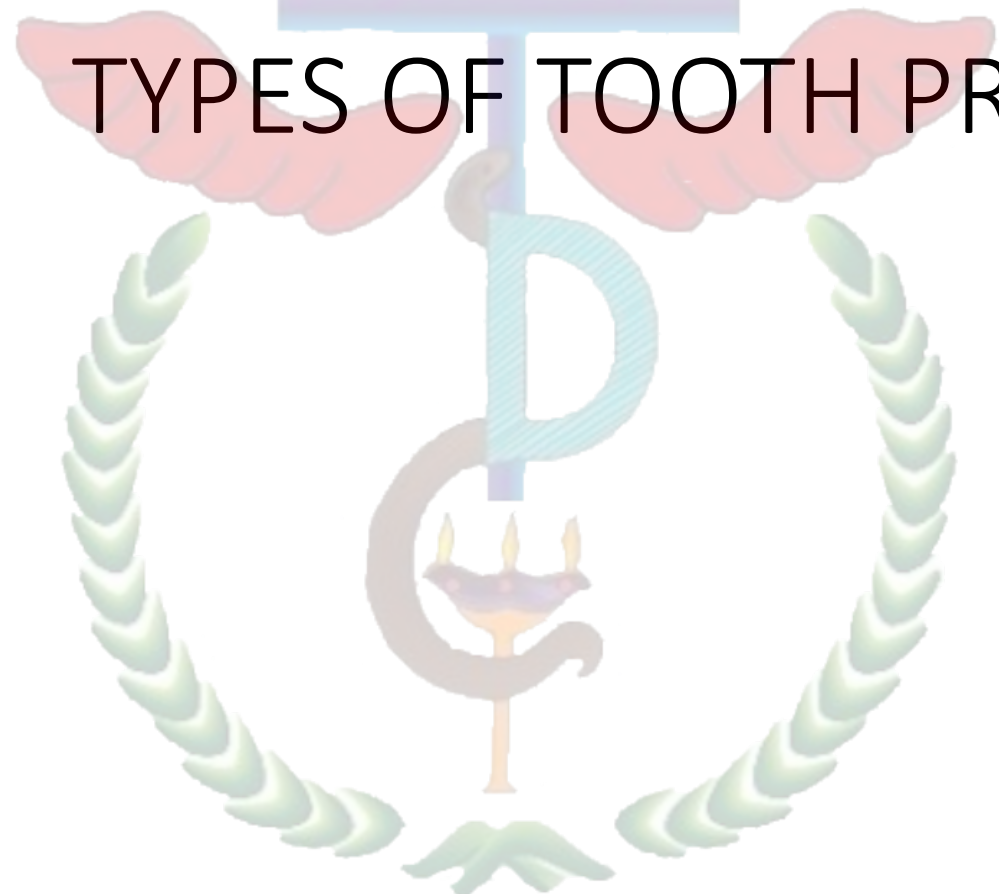
Indications for a facial approach

- The carious lesion is positioned facially such that facial access would significantly conserve tooth structure.
- 2. The teeth are irregularly aligned, making lingual access undesirable.
- 3. Extensive caries extend onto the facial surface.
- 4. A faulty restoration that was originally placed from facial approach needs to be replaced.



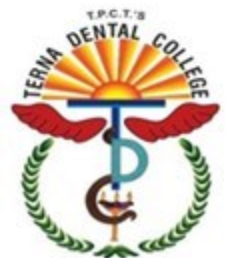
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TYPES OF TOOTH PREPARATION

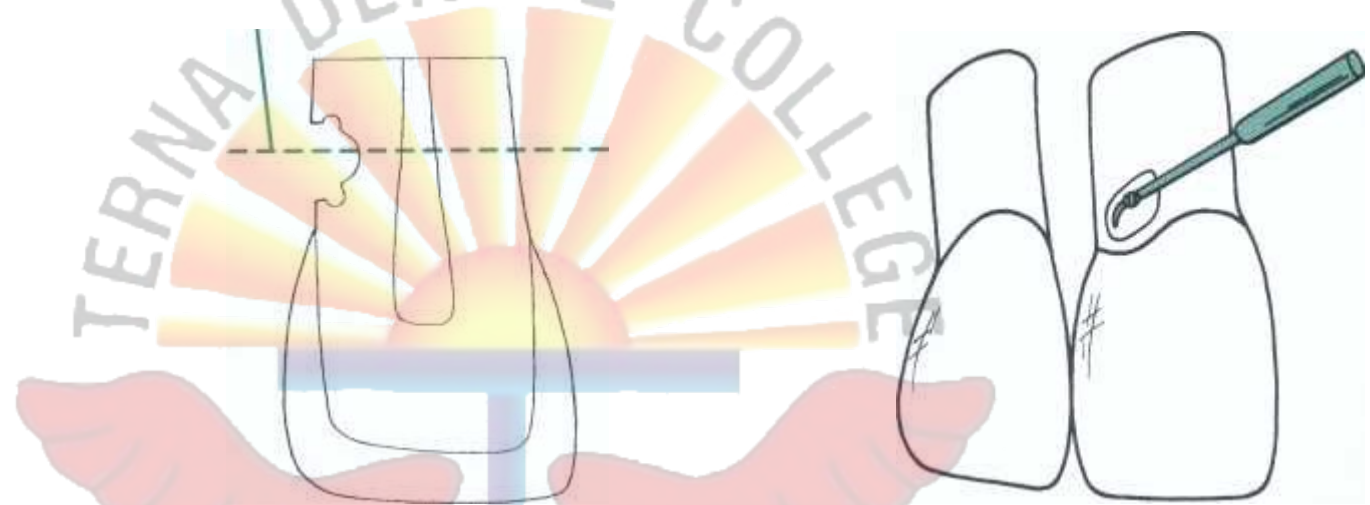


1. Conventional Class III & V Tooth Preparation

- **Indication**
- Restoration of root surfaces
- the form of the preparation walls is the same as that of an amalgam preparation

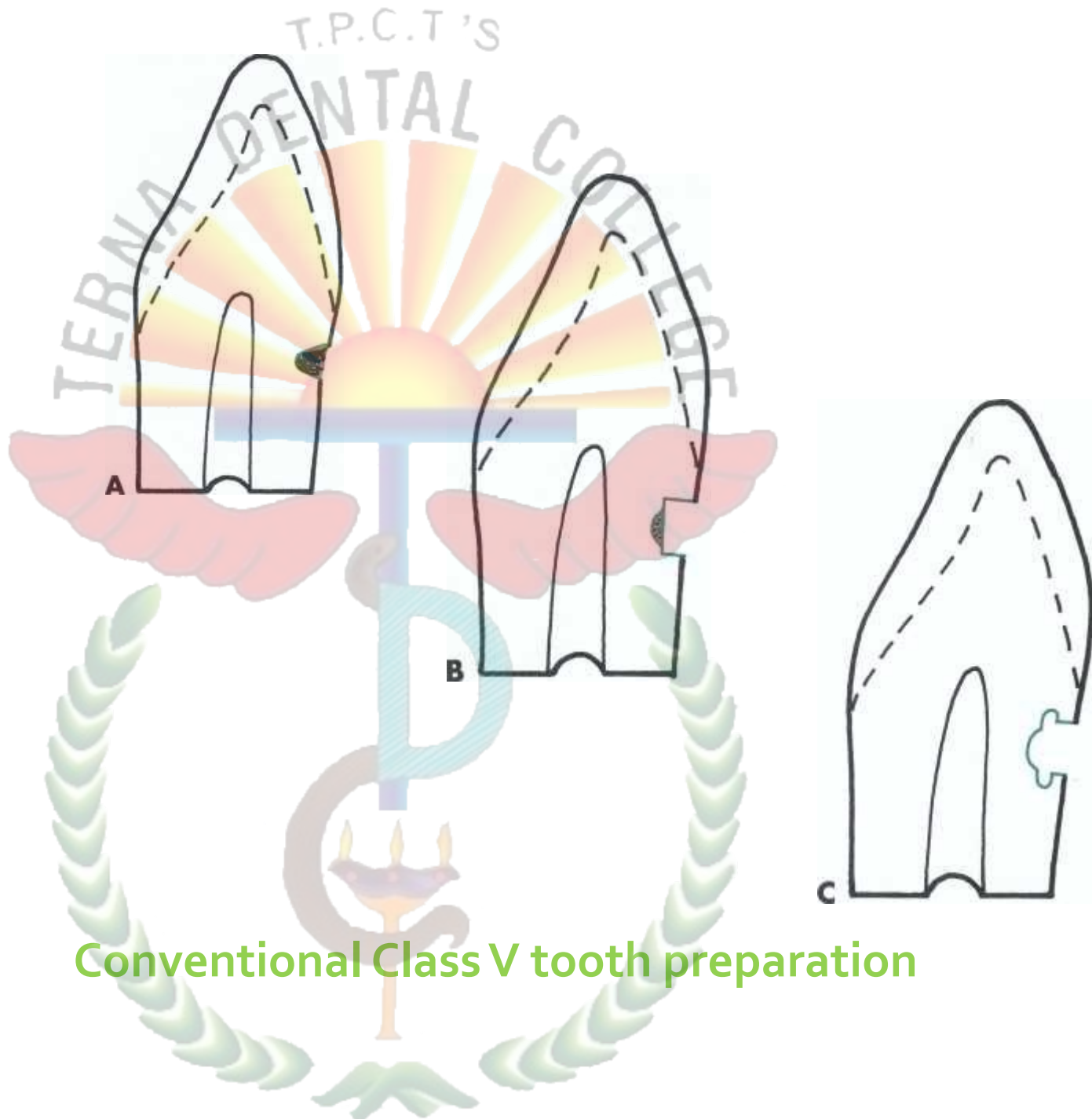


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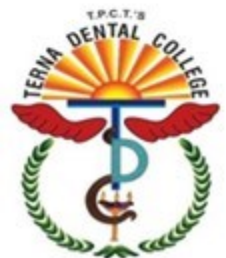


Conventional Class V tooth preparation



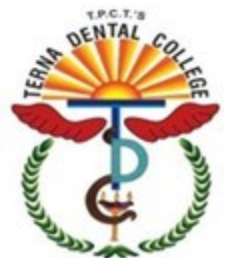


Conventional Class V tooth preparation



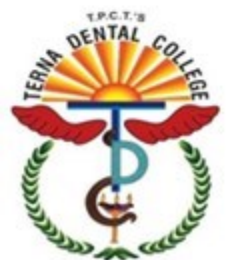
2. Beveled Conventional Class III & V Tooth Preparation

- **Indication:**
 - 1. Replacing an existing defective restoration in the crown portion of the tooth.
 - 2. A large carious lesion for which the need for increased retention and/or resistance form is anticipated



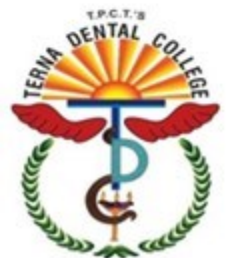
FEATURES:

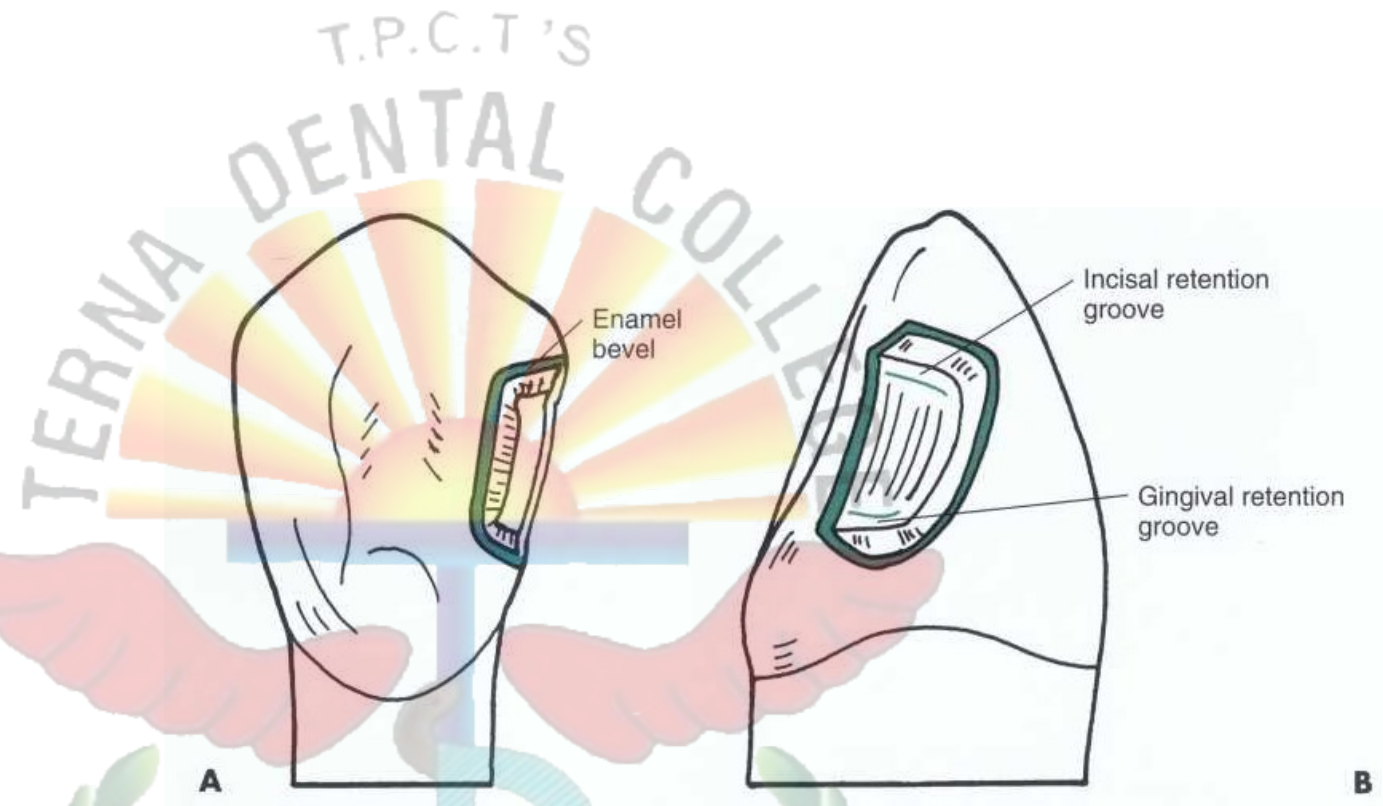
- External walls are perpendicular to the enamel surface, with the enamel margin beveled.
- The axial line angles may or may not be of uniform pulpal depth, varying as the thickness of the enamel portion of the external walls varies.
-
- If part of the tooth to be restored is located on the root surface, a conventional cavosurface configuration should be used in this area



RETENTION:

- Usually retention is obtained by bonding to the enamel and dentin.
- However, when replacing a large restoration or restoring a large Class III or V lesion retention grooves are required.



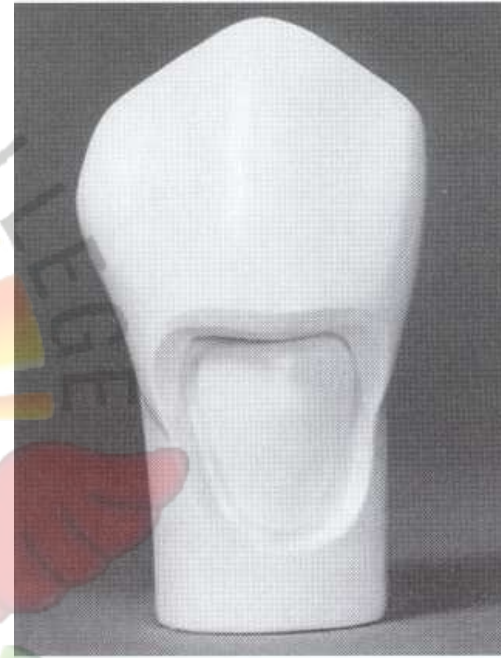


Large beveled conventional Class III preparation. A and B, Beveled enamel walls and incisal and gingival retention grooves





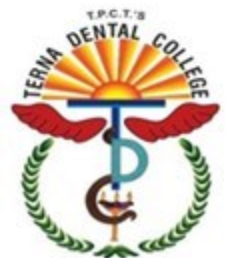
Completed large beveled conventional Class V preparation.



Completed Class V tooth preparation extending onto the root; crown portion beveled conventional design; root portion conventional design

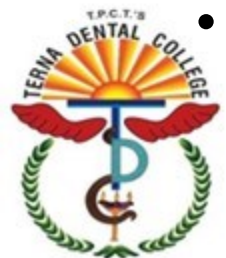
3. Modified Class III Tooth Preparation

- Indications:
- for small and moderate lesions or faults and is designed to be as conservative as possible.



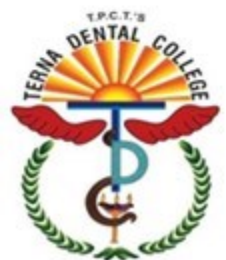
FEATURES:

- The outline & initial depth is dictated by the extent of the fault or carious lesion.
- preparation walls that have no shapes or forms.
- Usually no groove (or cove) retention form is indicated.
- Thus, the preparation design appears to be "scooped" or concave.
- Cavo-surface margins are generally divergent & beveled.

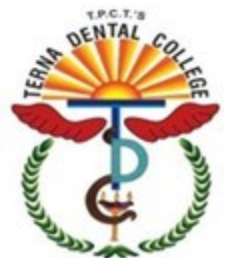




Modified Class V tooth preparation. A small cavitated Class V lesion

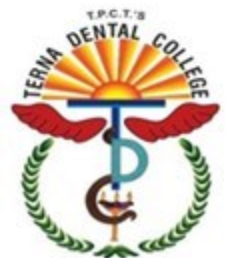


- *Tooth preparation for Abrasion, Erosion & Abfraction modified approach is used.*



Finishing of cavity preparation

- Etching
- Primer & bond application.
- Composite is added in increments.
- Finishing & polishing.



Conclusion

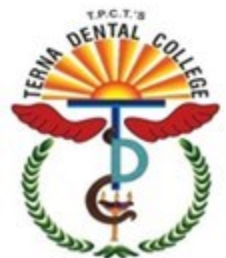
Summary for Class V amalgam

Axial Depth mm (when margins in enamel), 0.75 mm when margins are in cementum (Root surface)

Axial wall- 0.5 mm inside DEJ, Convex in all directions to conform the external tooth contour

Divergent Incisal, Gingival, Mesial & Distal walls- follow the direction of enamel rods

Retention features- Grooves & Coves mm inside DEJ using $\frac{1}{4}$ round bur

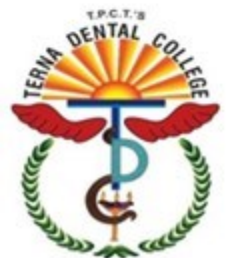


Take Home Note

amalgam is more resistant to wear.

amalgam is easier to finish and polish without damage to the adjacent surfaces.

shade of composite must be selected before the tooth preparation

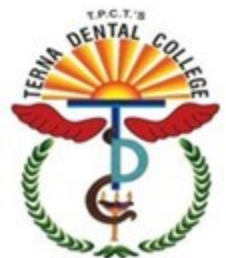


Probable SAQs LAQs

Class V amalgam tooth preparation

Class III amalgam tooth preparation

Finishing and Polishing of Class 3 and class 5 restoration.



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THANK YOU

