Operative Pediatric dentistry : Lab 5
Stainless Steel Crown

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Stainless Steel Crown

- Is a Semi – permanent restoration used in primary tooth
- Introduced as chrome – steel crown by Humphrey in 1950

Advantages

- These crown are superior to multi surface amalgam restoration with respect to life
- Acceptable to dentist and the patient
- They are cost effective

Objectives

- Biologically compatible
- Restore good mastication
- Maintain form and function
- When possible the vitality of the tooth should be maintained
- Result in a clinically acceptable restoration

Types of Crown

1. ***Rocky mountain***
2. ***Unitek***
3. ***3M*** – Precontoured crown

Festooned and precontoured

Composition

3M Crown ***Nickel – base crown***

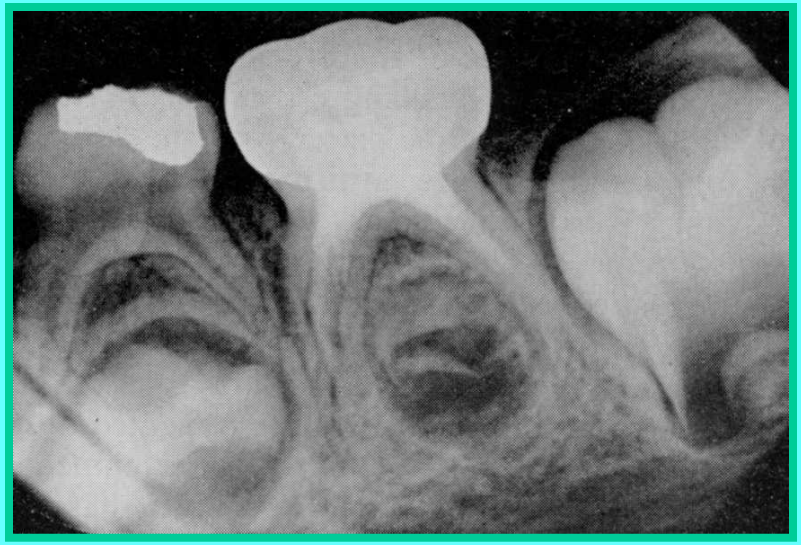
72% Nickel ; 14% Chromium ; 6 – 10% Fe

.04% carbon ; .35% manganese ; .2 % silicon

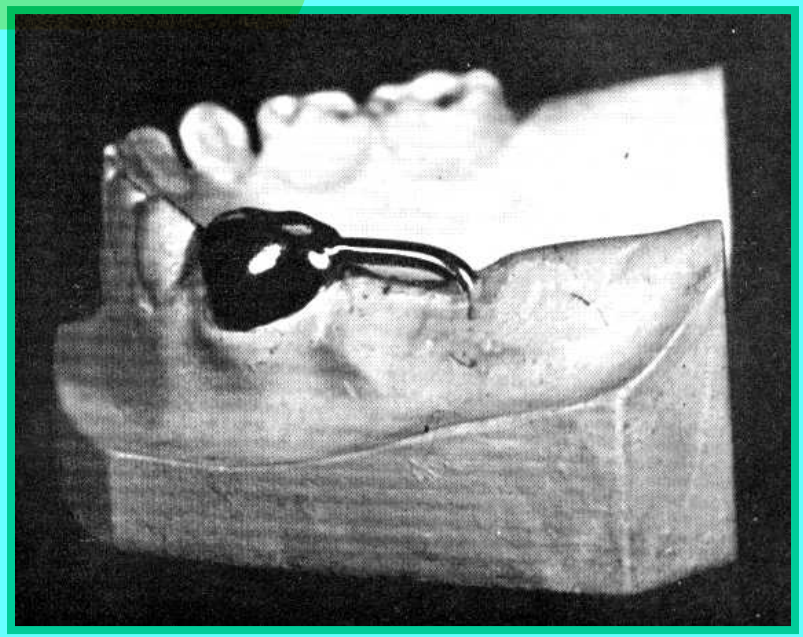
3 M crown

Indication

- Extensive decay in primary tooth
- Hypo plastic enamel or dentin defects
- Following the pulp therapy



- Used as a abutment for space maintainers



- Restoration of fractured tooth

Pre – Operative Evaluation

1. Dental age of the patient
2. Co – operation of the patient
3. Motivation of the parents
4. Medically compromised / disabled children

Clinical Procedure

1. ***Evaluate the preoperative occlusion***

   Note the dental midline and the cusp to fosse relationship bilaterally

2. ***Selection of crown***

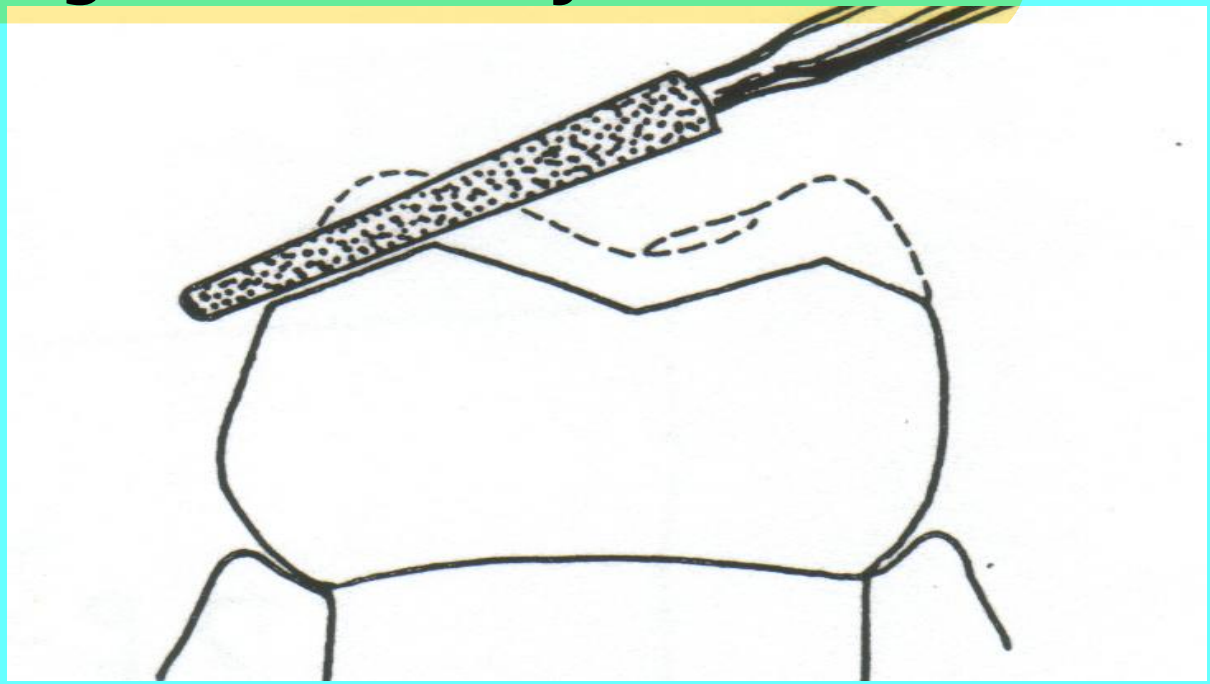
   Crown should have adequate mesiodistal diameter,proper occlusogingival crown height and light resistance to seating

3. ***Tooth preparation***

Tooth preparation

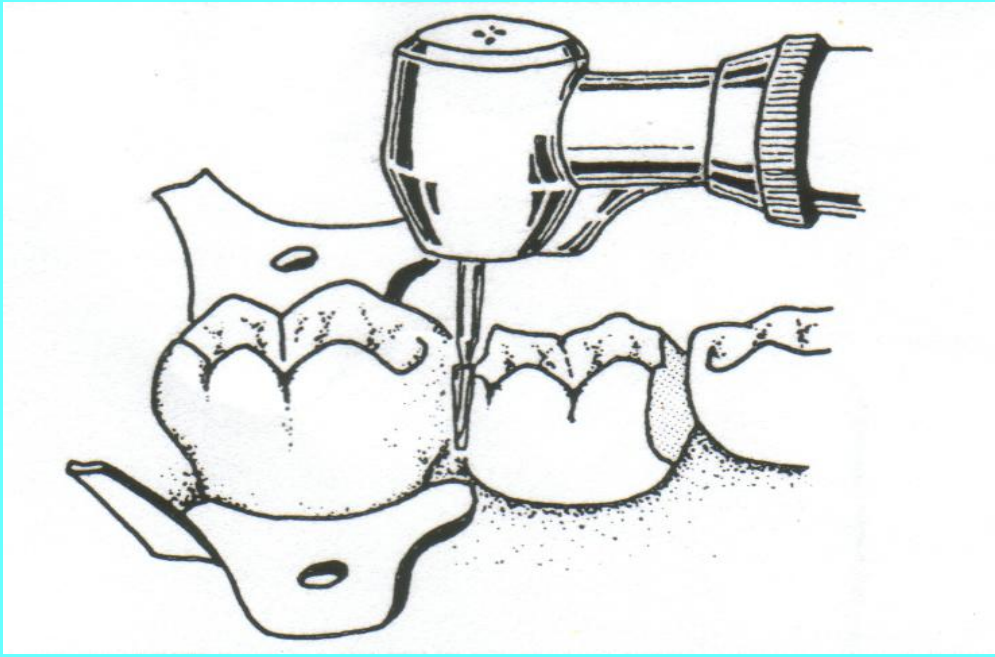
1. Occlusal reduction

   Done with tapered diamond bur. Reduction is 1 to 1.5 mm. The amount of reduction is determined by comparing the marginal ridges of the adjacent teeth



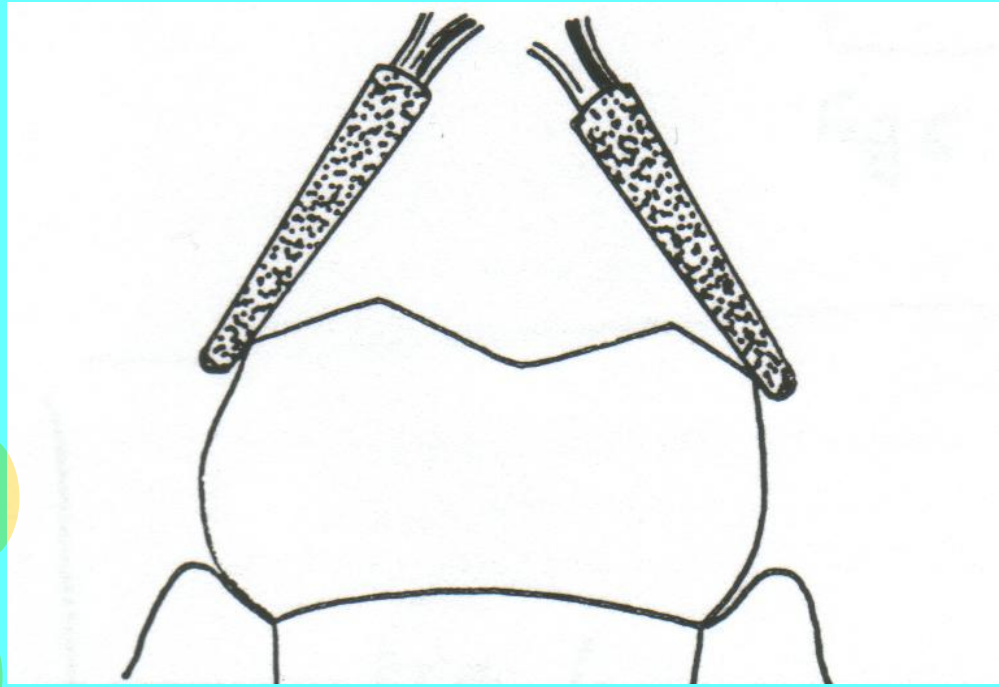
2. Proximal Reduction

- Slice the mesial and the distal surface with thin tapering fissure bur
- Open the contact
- Extend the slice to the buccal and lingual line angle



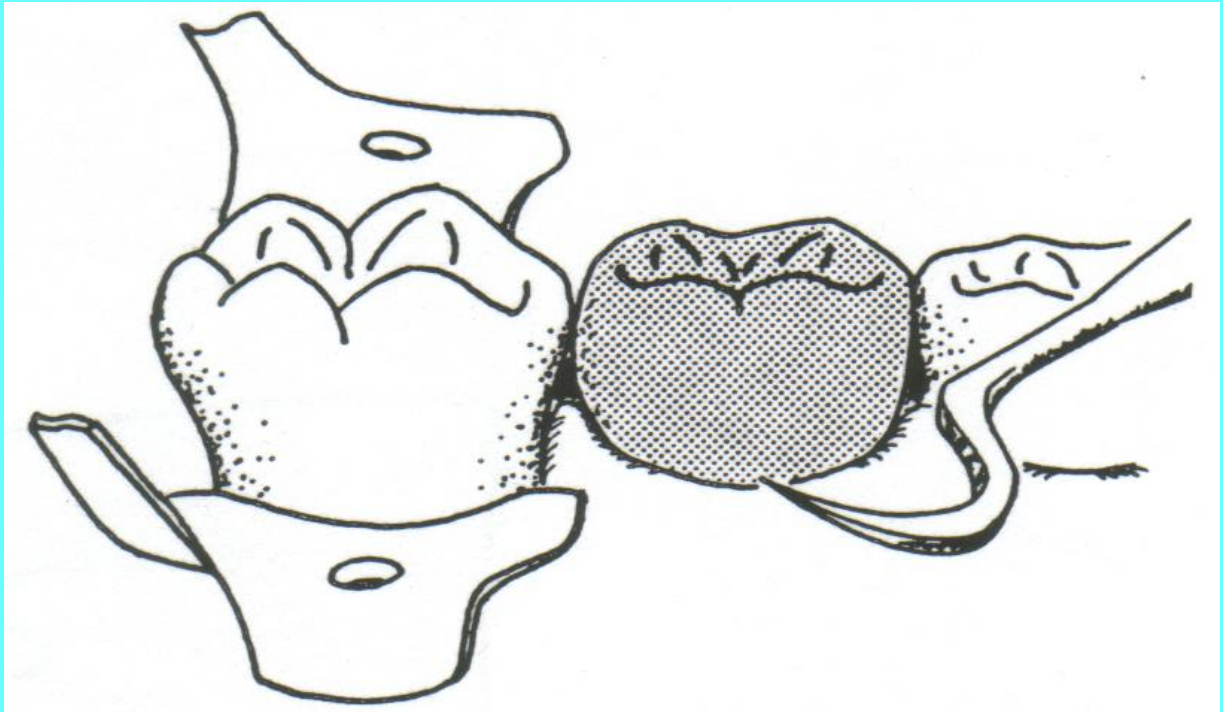
Round margins

- Reduce and round sharp corners of the preparation
- No reduction on the buccal and the lingual surface except when there is a large buccal bulge
- Gingival finish line is featheredge

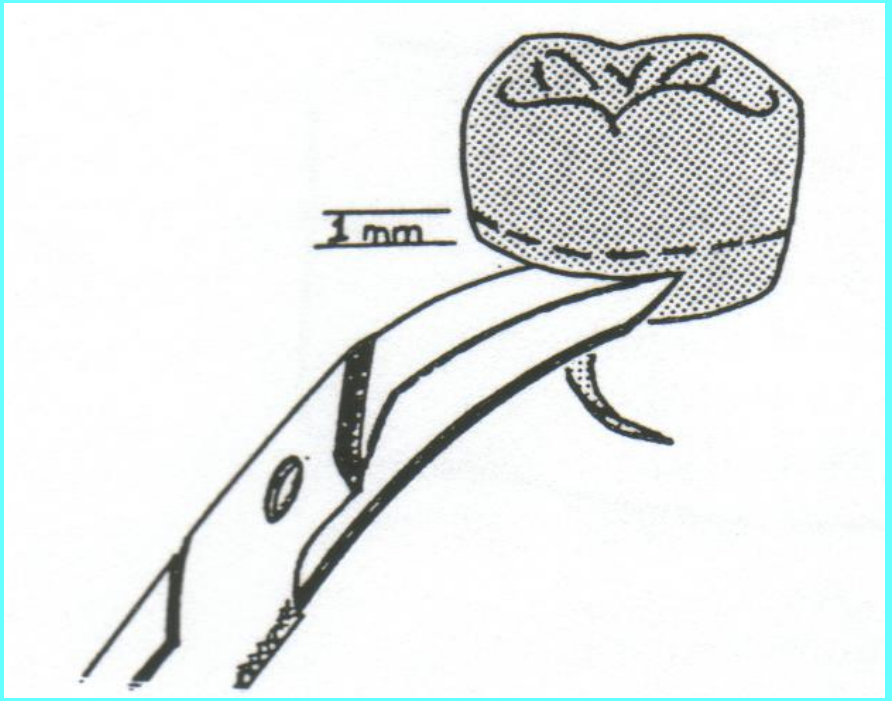


Adaptation of Crown

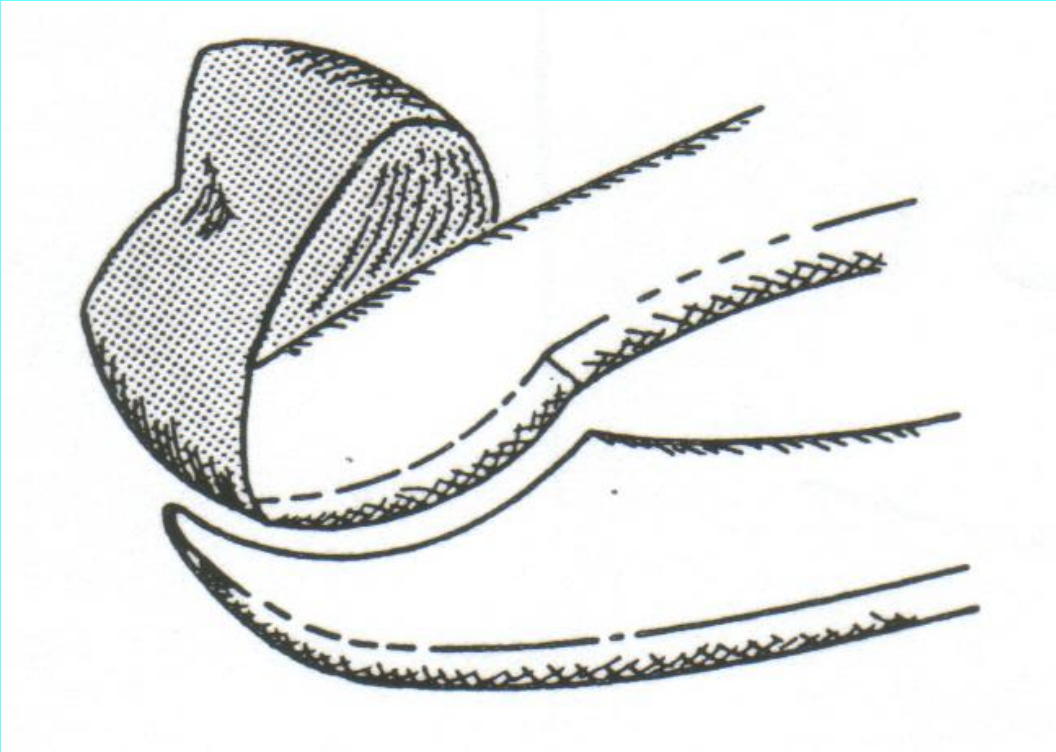
1. Try the selected crown on to the tooth
2. Place the crown on the lingual side and rotate it toward the buccal side
3. Scratch line is made on the gingival margin



4. Remove the crown from the prepared tooth, exposing the scratch line.With a stone or scissors cut 1mm below the scratch line
5. Retry the crown on the prepared tooth. If there is blanching it may be necessary to re trim the crown

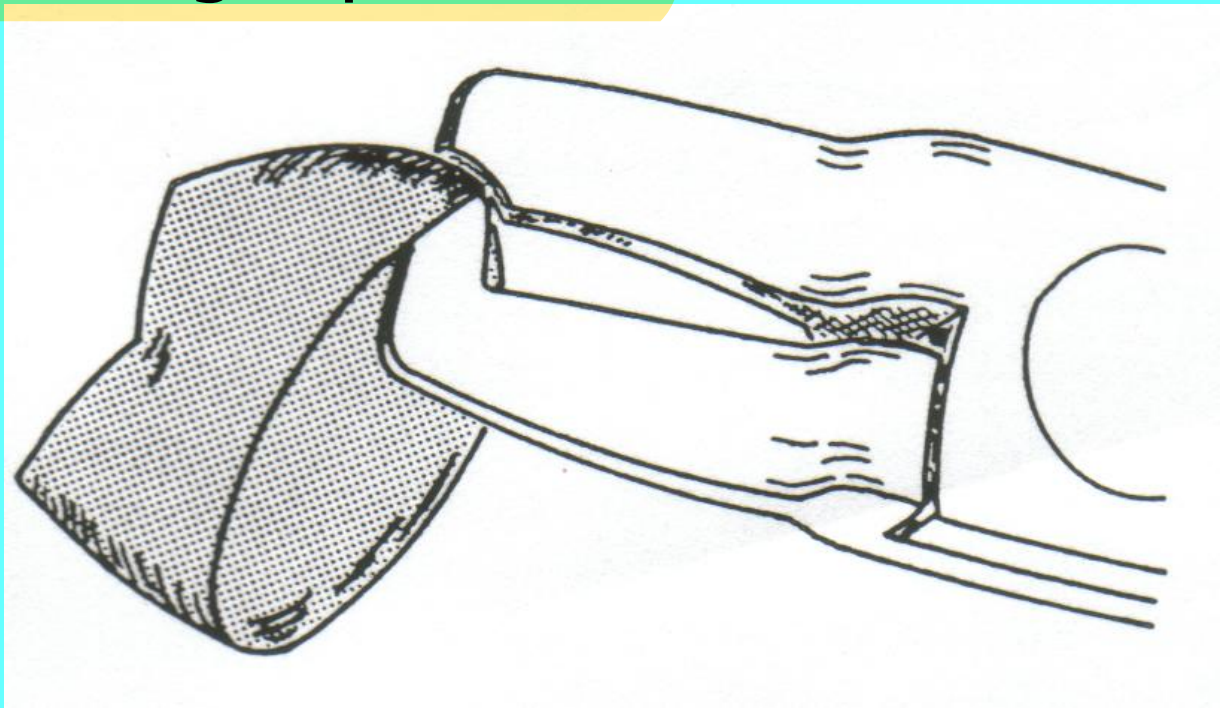


6. Adaptation of the crown is done with a contouring pliers. This is important to the gingival health of the supporting tissue

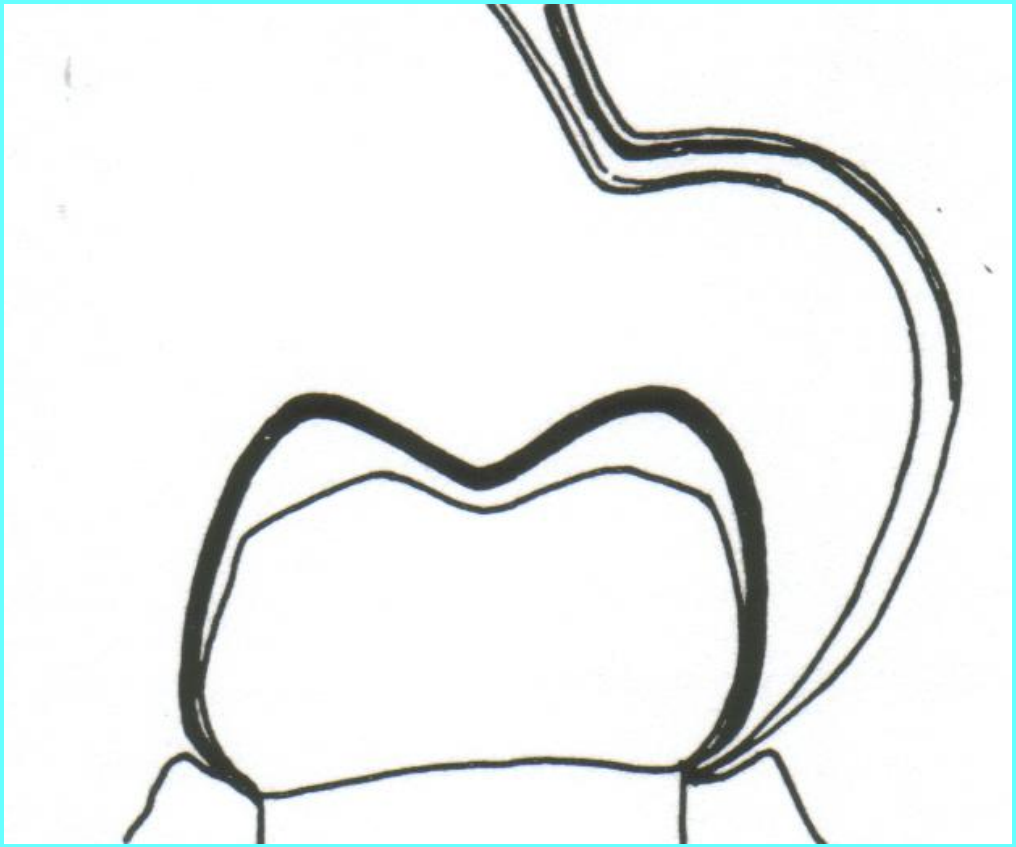


Crown contouring

7. With a crown crimping pliers crimp the margins.By bending the margins to fit into the undercut of the crown preparation. After this is done the crown should snap into position under firm finger pressure



8. With an explorer check all the margins for adaptation. When the margins are open re - crimp



Checking final crown adaptation

- The crown must snap into place
- The crown should not rock on the tooth
- The properly seated crown will correspond to the marginal ridge of the adjacent tooth
- The crown should be in proper occlusion
- There should be no blanching of the gingival tissues
- The crown margin extends 1mm gingival to the gingival crust

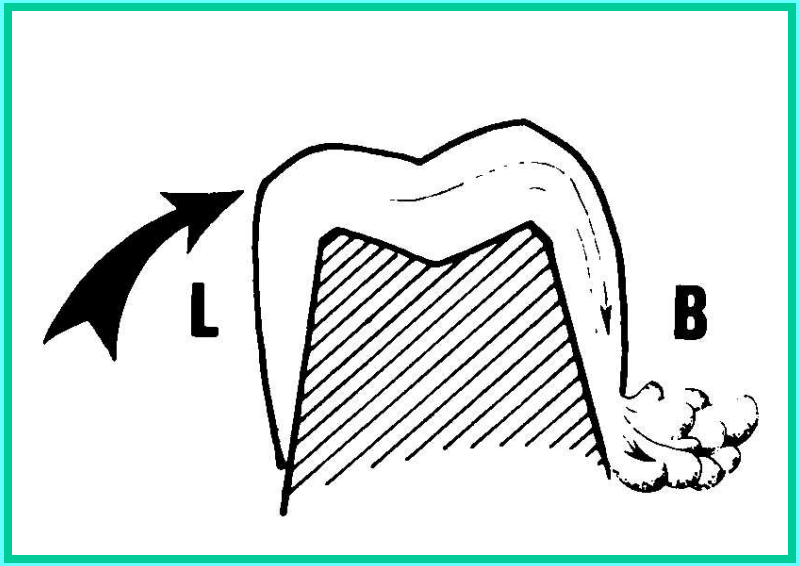
tapered.

Crown finishing

1. A large green stone is used to finish the cervical margin
2. Smooth and polish the margins with a rubber wheel

Crown cementation

1. Stainless steel crown should be cemented only on clean dry tooth. Isolation of tooth with cotton rolls is recommended



2. Cementation is done with

a) Polycarboxylate cement

b) Glass ionomer cement