## OPERATIVE DENTISTRY

Operative dentistry is the art and science of the diagnosis, treatment and prognosis of defects of teeth that do not require full coverage restoration for correction. Such treatment should result in the restoration of proper tooth from, function and esthetics while maintaining the physiologic integrity of the teeth in harmonious relationship with the adjacent hard and soft tissues, all of which should enhance the general health and welfare of the patient.

## DENTAL CARIES

Dental Caries is an infectious microbiologic disease of the teeth results in localized dissolution and destruction of the calcified tissues.

## CARIES OF PIT AND FISSURE ORIGIN

Pit and fissure caries form in the regions of pits and fissures usually resulting from the imperfect coalescence of the developmental enamel lobes.

## CARIES OF ENAMEL SMOOTH SURFACE ORIGIN

Smooth surface caries begin in a smooth area of the enamel surface that is habitually unclean and is there by continually or usually covered by plaque.

#### G. V BLACK’S CLASSIFICATION

It is based on treatment and restorative design, that is, it is a therapeutical classification.

* Class I lesion
* Class II lesion
* Class III lesion
* Class IV lesion
* Class V lesion
* Class VI lesion

**INITIALS OF SURFACES TO BE TREATED**

This scheme employs the initials of surfaces to be treated, in order to describe the surfaces to be restored

1. occlusal surface

M- mesial surface

D- distal surface

F- facial surface

B- buccal surface

L- lingual surface

Various combinations are also possible such as MOD, MO, Do etc

## GROOVES AND FISSURES

Grooves or fissures mark the location of the union of developmental enamel lobes.

When the union is complete and is only slightly involuted, smooth, hard, shallow, accessible to cleansing, it is termed as a groove.

When the union is incomplete and the landmark is sharply involuted to form an arrow, in accessible canal of varying depths in the enamel, it is termed as a fissure.

* Fossa is non defective
* Pit is defective.

## INFECTED DENTIN

Infected dentin is the outer layer which contain bacteria and irreversibly denatured collagen. Infected dentin is not remineralizable and has to be removed.

## AFFECTED DENTIN

Affected dentin is the inner layer which is reversibly denatured and does not contain bacteria it is remineralizable and has to be preserved.

## ENAMELOPLASTY

Enameloplasty is removal of a shallow, enamel developmental fissure or pit to create a smooth, saucer-shaped surface that is self-cleansing or easily cleaned.

## TOOTH PREPARATION

Tooth preparation or cavity preparation is defined as the mechanical alteration of a defective, injured or diseased tooth to best receive a restorative material that will re establish a healthy state for the tooth, including esthetic corrections where indicated, along with normal form and function.

## SIMPLE TOOTH PREPARATION

A tooth preparation is termed simple if only one tooth surface is involved.

## COMPOUND TOOTH PREPARATION

A tooth preparation is termed compound if two surfaces are involved.

## COMPLEX TOOTH PREPARATION

Tooth preparation involving more than 2 surfaces is termed complex tooth preparation.

#### INTRACORONAL TOOTH PREPARATION

An inracoronal tooth preparation is usually “box like” having both internal and external preparation walls.

#### EXTRACORONAL TOOTH PREPARATION

An extracoronal preparation is usually “stumplike” having walls or surfaces that result from removal of most to all of the enamel. It is termed as a crown and it envelops the remaining tooth crown and thereby usually restores some of its strength.

## WALLS

Walls are named according to the adjacent surfaces and they are usually composed of enamel and dentin, with an intervening DEJ.

## INTERNAL WALL

Internal wall is a prepared tooth surface that does not extend to the external tooth surface eg : axial wall, pulpal wall.

## AXIAL WALL

Axial wall is an internal wall parallel with the long axis of the tooth.

## PULPAL WALL

A pulpal wall is an internal wall that is both perpendicular to the long axis of the tooth and occlusal of the pulp.

## EXTERNAL WALL

An external wall is a prepared tooth surface that extends the external tooth surface and such a wall takes the name of the tooth surface.

## ENAMEL WALL

The enamel wall is that portion of a prepared external wall consisting of enamel.

## DENTINAL WALL

The dentinal wall is that portion of a prepared external consisting of dentin, in which mechanical retention features may be located.

## FLOOR OR SEAT

A floor is a prepared wall that is reasonably flat and perpendicular to those occlusal forces that are directed occluso gingivally generally parallel to the long axis of the tooth.

## LINE ANGLE

A line angle is the junction of two planal surfaces of different orientation along a line.

## INTERNAL LINE ANGLE

An internal line angle is a line angle whose apex points into the tooth.

## EXTERNAL LINE ANGLE

An external line angle is a line angle whose apex points away from the tooth.

## POINT ANGLE

A point angle is the junction of three planal surfaces of different orientation.

## CAVOSURFACE MARGIN

Cavorsurface margin is the junction of a prepared cavity wall and the external surface of the tooth.

## CAVOSURFACE ANGLE

Cavosurface angle is the angle of tooth structure formed by the junction of a prepared wall and the external surface of the tooth.

# CLASS I RESTORATIONS

All pit and fissure restorations are class I and they are assigned to 3 groups.

1. Restoration on occlusal surfaces of molars and premolars.
2. Restoration on occlusal two thirds of the facial and lingual surfaces of molars.
3. Restoration on lingual surface of maxillary incisors.

# CLASS II RESTORATIONS

Class II restorations are the restorations on the proximal surfaces of the posterior teeth.

# CLASS III RESTORATIONS

Restorations on the proximal surfaces of anterior teeth that do not involve the incisal angle are class III.

# CLASS IV RESTORATIONS

Restorations on the proximal surfaces of anterior teeth involving the incisal angle are class IV.

# CLASS V RESTORATIONS

Restorations on the gingival third of the facial or lingual surfaces of all teeth are class V.

# CLASS VI RESTORATION

Restorations on the incisal edge of anterior teeth or the occlusal cusp heights of posterior teeth are class VI.

#### Line angles and points angles in a class I cavity preparation

There are 8 lines angles and 4 point angles in a prepared class I cavity.

# Line angles

1. Faciopulpal (fp)
2. Mesiofacial (mf)
3. Mesiopulpal (mp)
4. Mesiolingual (ml)
5. Linguopulpal (lp)
6. Distolingual (dl)
7. Distopulpal (dp)
8. Distolingual (dl)

# Point angles

1. Mesiofaciopulpal (mfp)
2. Mesiolinguopulpal (mlp)
3. Distolinguopulap (dlp)
4. Distofaciopulpal (dfp)

**Line angles and point angles in a prepared class II cavity.**

There are 11 line angles and 6 point angles in a prepared class II cavity.

# Line angles

1. Distopulpal (dp)
2. Distolingual (dl)
3. Linguopulpal (lp)
4. Axiopulpal (ap)
5. Axiolingual (al)
6. Linguogingival (lg)
7. Axiogingival (ag)
8. Faciogingival (fg)
9. Axiofacial (af)
10. Faciopulpal (fp)
11. Distofacial (df)

# Point angles are

1. Distolinguopulpal (dlp)
2. Axiolinguopulpal (alp)
3. Axiolinguogigival (alg)
4. Axiofaciogingival (afg)
5. Axiofaciopulpal (afp)
6. Distofaciopulpal (dfp)

#### Line angles and point angles in a prepared class III cavity

There are 6 line angles and 3 point angles in a prepared class III cavity.

# Line angles are

1. Incisal (i)
2. Axiofacial (af)
3. Faciogingival (fg)
4. Axiogingival (ag)
5. Linguogingival (lg)
6. Axiolingual (al)

# Point angles are

1. Axioincisal (ai)
2. Axiofaciogingival (afg)
3. Axiolinguogingival (alg)

**Line angles and point angles in a prepared class IV cavity**.

There are 11 line angles and 6 point angles in a prepared class IV cavity.

# Line angles are

1. Mesiopulpal (mp)
2. Mesiolingual (ml)
3. Linguopulpal (lp)
4. Axiopulpal (ap)
5. Axiolingual (al)
6. Linguogingival (lg)
7. Axiogingival (ag)
8. Faciogingival (fg)
9. Axiofacial (af)
10. Faciopulpal (fp)
11. Mesiofacial (mf)

# Point angles are

1. Mesiolinguo pulpal (mlp)
2. Axiolinguopulpal (alp)
3. Axiolinguogingival (alg)
4. Axiofaciogingival (afg)
5. Axiofaciopulpal (afp)
6. Mesiofaciopulpal (mfp)

**Line angles and point angles in a prepared class V cavity.**

There are 8 line angles are 4 point angles in a prepared class V cavity.

# Line angles are

1. Axioincisal (ai)
2. Distoincisal (di)
3. Axiodistal (ad)
4. Distogingival (dg)
5. Axiogingival (ag)
6. Mesiogingival (mg)
7. Axiomesial (am)
8. Mesioincisal (mi)

# Point angles are

1. Axiodistoincisal (adi)
2. Axiodistogingival (adg)
3. Axiomesiogingival (amg)
4. Axiomesioincisal (ami)

#### DENTINOENAMEL JUNCTION

The dentinoenamel junction is the junction of enamel and dentin.

#### CEMENTOENAMEL JUNCTION

The cemento enamel junction is the junction of the enamel and cementum. It is also known as cervical line.

##### TERMINOLOGIES

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