SHEET 5 CONS

Class 1 : cavities which begin in structural defects (pits and fissures that occasionally occur on the occlusal surfaces of molar and premolars and other teeth).

Cavities and restorations of class 1 cavity preparation are of 3 types:

1. Occlusal surfaces of molars and premolars (the most obvious).

2.Occlusal two thirds of the buccal and lingual surfaces of molars and premolars.

3.Lingual surfaces of maxillary incisors.

So basically, any pit or fissure caries is a class 1.

- Pits and fissures caries have the highest prevalence of all dental caries.Why ?

because the debris and bacteria are protected in that area.

what is the best approach to protect the teeth against the dental caries ?

SEALING pits and fissures **just after the eruption** of the tooth.

The using of aesthetic materials is becoming more and more.why ?

Because people are demanding aesthetic restorations.

the metals like the gold and silver has something we call cold welding in which if we take two pieces of metals (silver) and you press them against each other they will bond (form a one mass)

\*Classical indications FOR CLASS 1 AMALGAM RESTORATION :

1. Moderate -to- large cavities.

2. Restorations that are not in highly esthetic areas of the mouth.

3. Restorations that have heavy occlusal contacts.

4. Restorations that cannot be well isolated.

5. Restorations that extend on to the root surface.

- Those indications change through time because of the development in other fields eg : composites of today can be used in heavy occlusion because the work resistance of it is much larger (better) than the composites of before.

The modern dentine bonding agents overcome the problem of the extension of the cavity (to the root surface) that prevented us from using composites instead of amalgams because of the bonding.

\* Any treatment plan is two sections :

Disease control and rehabilitation phase.

\* disease control is the elimination of the oral diseases : dental caries and periodontal diseseases.

\* restorative phase : restore aesthetic and function

\*Contraindications:

1. When aesthetics are of a prime importance.

2. Small cavities that could be very well isolated.

3. if the patient has a problem (allergy) with any component of amalgam material

\* The most allergic metal is NICKEL which was used in dental alloys then it was limited.

4. Debatable issues according to the politics of the country due to the mercury toxicity :

- children under12.

- lactating women.

-pregnant women.

\*\* Clinical procedure :

The first step in any preparation is to establish ANASTHESIA.

The second step is the conservative cavity preparation –

\* THE BEST INSULATOR TO THE PULP IS THE DENTINE.

The third step is the isolation of the operative site

IN THE Initial cavity preparation , sharp angles in the marginal outline are avoided. Why ?

Beacause sharp angles are areas of stress concentration. And it's difficult to finish your restoration with a sharp angel. So, we prefer a smooth outlin

the IDEAL outline consists of the two resistance form principles that are bases for all occlusal cavities:

1.placement of the margins in areas that are sound and subjected to minimal stresses. Which means : don't let the margin in the fissure area.

2. reservation of the tooth structure, don't extend your cavity too far.( don't overdo it) which means : extend it to the areas that are smooth and resistant (minimal occlusal forces).

What determines if I should joint the two cavities together or not ?

If they approximate each other to less than 0.5 mm then I have to join them, but, if they are separated by 1mm or more of the tooth structure then I keep them separated

-minimal depth for dental amalgam :1.5-2mm.

\* In certain situations, when the cavity is extending too far proximally, in order to protect the marginal ridge we will accept them to be divergent occlusaly (the buccal and lingual sides). Not all the time, just in cases of approximating the marginal ridge closely.But, If we were far from the marginal ridge, we have to make it converging occlusaly

What is the best instrument to use when we prepare class 1 cavity preparation?

245 bur ; diverging endwise which means that the end of the bur is wider than its start. And that characteristic would give us the CONVERGING occlusaly

Also, the bur has a slighty rounded corners and a flat end which give us rounded internal line angles,

An another bur to use is the 330 bur ; a pear-shaped bur, it is used for even more conservative cavity preparation because it is smaller.

assume you are faced with a class 1carious region involving all of the occlusal surface or all of the occlusal fissure of a mandibular first molar, where do you start ?

With the most carious pit. But, if both of them is equally carious we start DISTALLY to see where we are going (towards the line of vision). So, always start distally unless the mesial side is more carious.

With any rotary instrument you are using, don't touch the tooth and then operate your instrument !it should be operating before it touches the tooth and before it's removed outside the tooth ; you remove it from the tooth, then you stop it! Why ?

Because it might fracture

Always start with a PUNCH CUT.

We take the bur while it's rotating, place it parallel to the long access of the tooth or parallel to the occlusal surface

he high-speed handpiece has a speed of 300,000 RPM (revolution per minute) or more.

\*The most common mistake is starting with a shallow cavity then going back and forth to try to make it deeper you end up making it deeper but at the same time wider. Try to go through the cavity preparation once and only once.

**\*An ideal enamel margin : our purpose is to reach an ideal enamel (cavity) margin; a margin that is formed of full-length enamel prisms with partial length enamel prisms supported by dentine. We don't want unsupported enamel margins**

**\***The conservative class 1 should have an outline formed with gently flowing curves (no sharp edges) and it should have a facio-lingual width of 1.5 mm and a length (depth) of 1.5-2 mm.

-There are modifications for the class 1 preparation, for example:

 1. Class 1 with palatal extension.

2. Class 1 with buccal extension

3.Class 1 on anterior teeth.