**Cons sheet #1**

**Introduction to operative dentistry:**

***\*Conservative dentistry includes:***

**1-*operative dentistry:***

**\*Operative Dentistry also known as Restorative Dentistry**

**\* The doctor said that he is with calling operative dentistry: advanced restorative dentistry.**

**2-endodontics: is the** [**dental specialty**](http://en.wikipedia.org/wiki/Specialty_%28dentistry%29) **concerned with the study and treatment of the** [**dental p**](http://en.wikipedia.org/wiki/Dental_pulp)**ulp.**

**\*If dental caries reach the pulp, endodontic treatment is required to save the tooth that would otherwise need to be removed by a surgeon.**

**\* After the root canal of the tooth is treated by an endodontist, the operator will do the full restoration.**

**3-crown&bridge: A crown is used to repair a tooth that is structurally weak, destructed, this can happen when the tooth develops a crack, has a large cavity, or needs a large filling replaced. When a tooth has a great deal of damage it must be strengthened to avoid the possibility of losing it completely.**

***Lecture outline***

**\*Definition of operative dentistry**

**\*Indications for operative dentistry**

**\*Revision of teeth numbering systems**

**\*Definition of cavity and cavity preparation**

**\*Classification of caries according to location, extent and rate of progression**

**\*Nomenclature of cavity preparation**

**\*knowing terms like (buccal, lingual, point angle). \*Talking about operator and patient’s position.**

**Operator’s position :( according to the working area the operator changes the location).**

**Patient’s position: full recline or 45° recline depending on what jaw the operator is working on (upper or lower jaw).**

**Operative dentistry definition:**

**First part:**

**\*operative dentistry: Is the art and science of the diagnosis, treatment and prognosis of defects of the teeth that do NOT require full coverage restorations for corrections.**

**\* do NOT require full coverage restorations for corrections means: don’t require crown and bridges.**

**\* If the tooth is weak after doing restoration we can do crown or bridge but as we are doing restorative treatment we can’t.**

**\*we draw the plan of treatment &see if the prognosis succeeds.**

**\* If the case was considered as poor prognosis (doing restoration will not save the function of oral cavity) then the operator should decide that the tooth should be extracted.**

**Second part:**

**Treatment should result in the restoration of proper tooth**

**1-form (shape& contour of tooth)**

**2-function (restoration of the process of mastication)**

**3-esthetics**

**While maintaining the physiologic integrity of the teeth in harmonious relationship with the adjacent hard tissue (bone) and soft tissues (gums should not be irritated).**

**\*any success in any treatment depends on those three factors; otherwise it will be not acceptable (failure).**

**\*if the patient was interested to do treatment, his oral hygiene is good; he is collaborating with the dentist.**

**&if the dentist knows the shape of tooth, indications and contraindications of treatment, he likes his job; he uses good materials in his clinic.**

**If those factors were present and a failure happened then it’s the dentist failure.**

**\*in tooth structure we have pits and fissures that help in trapping foods , so if another rough area was done by a dentist as he is doing a treatment he increase the problem as the food will accumulates inside tooth structures.**

**Procedure of restoration:**

**1-Cleaning of dental caries**

**2-shaping of remaining structures**

**3-filling: \*for initial caries: Esthetic fillings or amalgam fillings.**

**\*we replace fillings because of 1-secondary caries 2-esthetic purposes**

**4-good adaptation &contouring**

**Indications for operative procedures:**

**1-Caries**

**2-Malformed, discolored, non esthetic or fractured teeth**

**3-Restoration replacement or repair**

**\* Operative dentistry solves caries (because of dental bacteria) &non caries injuries((abrasion, attrition, erosion)**

**\*25-30% of tooth extraction for non caries injury.**

***\* Erosion*: is caused by chemical acts of acidic foods and drinks 'dissolving' away the surface of the tooth. It is becoming increasingly more common, in patient who drinks so much orange juice which contains acids.**

**\* Many cases, cervical erosion is a natural process of the female body. It is related to high estrogen levels. Pregnant women much more likely to experience cervical erosion, because of vomiting.**

***\* Attrition*: is the loss of** [**tooth**](http://en.wikipedia.org/wiki/Tooth) **structure by mechanical forces from opposing teeth, as in patients that have occlusal disturbances, stress.**

***\* Abrasion:* is the loss of** [**tooth**](http://en.wikipedia.org/wiki/Tooth) **structure by mechanical forces from a foreign element.(using a sharp tooth brush or brushing in a wrong way).**

**\*what is the difference between erosion and abrasion in shape?**

**1-erosion’s defect: margin of the cavity is like a plate shape.**

**2-abrasion’s defect: margin of the cavity is very sharp.**

**\*malformed teeth: any disturbance in a tooth formation or calcification that will change the shape of a tooth. (Like peg shaped lateral incisors).**

**\*peg shaped laterals: instead of having tooth during formation in the incisal third, diverging out, the tooth will converge to incisal edges. The tooth size will be very small.it can be treated by operative dentistry.**

**\*discoloration: one of the main indicators for operative procedure which we have 1-extrinsic discoloration 2-entrinsic discoloration**

**or**

**the discoloration that happens after odontogenesis (after tooth development or eruption) or that happens during odontogenesis(more complicated in cause and treatment).**

**As in Dental fluorosis ,embryogenesis imperfecta, tetracycline stain, trauma can cause stains, fractures, replacement of old fillings,**

**& dental diastema(esthetic problem in anterior tooth. The main cause of dental diastema is labial frenulum, which can cause a large gap and gum recession so the operator should consults the orthodontics, if he can’t treat it he will ask u as an operator to continue your work using veneers).**

**Treatment of discoloration:**

**\*yellow discoloration: (bleaching or whitening techniques).**

**\*extrinsic staining (bleaching)**

**\*fluorosis (bleaching then composite veneers)**

**\*fractures(restoration,ortho)**

**\*embryogenesis imperfecta(composite or porcelain veneers)**

**\* replacement of old fillings because of esthetics purposes or secondary caries**

**Like replacing amalgam with esthetic fillings (compsite,glass ionomer)**

**\*amalgam fillings don’t have adhesion ability with tooth structure, so there will be defect on the margin, so I use a material that will give good adaptation of the filling with tooth structure, but the amalgam will shrink with time and secondary caries will occur.**

**\*conventional cavity preparation: that take in consideration, walls, lines, point angles.**

**Doing Cavity Preparation to remove caries from tooth, then the dentist should choose amalgam or esthetic fillings, if I want to use amalgam that doesn’t have the ability of adhesion with tooth structure, we must prepare the tooth in an appropriate shape(design it) to obtain best mechanical properties(mechanical retention) of restorative material.**

**\* Modified cavity preparation: if we remove the defects, caries from tooth structure I need to do esthetic fillings, no need to do design, just remove the defect, and then fill with composite.**

**Procedures commonly done by an operator are:**

* **Direct restoration – Amalgam, Composite resin, GIC.**
* **Indirect restoration – Inlay, onlay, crowns (base metal, precious metal, porcelain fused to metal, or metal free ceramic) by using preparation, impression, send it to the lab….etc**
* **Veneers – Direct or indirect.**

***\*Dental caries***

**Dental caries is caused by dental plaque.**

**\*we find dental plaque at the cervical part of the tooth, proximal area of tooth, pits and fissure or any rough area in the tooth.**

**\* Dental plaque: sticky, full, rich, layer of bacteria, in oral cavity that converts remaining food in oral cavity to acid.**

**\*acids start the process of demineralization of tooth structure.**

**\*moat accepted theory for dental caries production is the acidogenic theory:**

**Bacteria in oral cavity cause fermentation of the remaining food producing acid, acids contact with tooth structure causing caries.**

**bacteria +sugar+teeth=acids+caries**

**so the bacteria in any microbial disease will cause the following:**

**1-demineralization of inorganic part.**

**2- Destruction of organic part.**

**Good luck☺**

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