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Today we will continue the topic of denture delivery and what comes after that.

**Denture Cleansers**

There are a wide range of denture cleansers over the counter. We should know the characteristics of each and which one to prescribe for our specific patients.

We need to be careful when prescribing denture cleansers because misuse of them might deteriorate denture mechanical properties or may cause toxicity to the patient if he swallowed it by error.

Patients should be directed to use specific cleansers and adhesives for their specific dentures

Metallic RPDs differ from acrylic denture which differs from a soft relined denture, so each denture needs specific cleansers.

**Requirements** for Denture Cleansers in general:

They should be non toxic, non irritant, easy to apply and remove without residues, able to remove organic portion of denture deposits as well as inorganic material mainly calcium phosphate and calcium carbonate.

**Types** of denture cleansers

They are categorized into mechanical and chemical.

There are 2 ways of Mechanical cleaning. Using **abrasive paste** but on the long run they will cause abrasion to the denture surface and so become more prone to plaque accumulation and staining. **Ultrasonic cleaners** are suitable especially for patients with problems with their manual dexterity and certain handicaps. The problem with it is that it is costy so not all patients can afford buying it.

Chemical Action

There are five types

1. Effervescent peroxide
2. Alkaline hypochlorite
3. Acids
4. Disinfectants like chlorhexidine
5. Enzymes

1-Effervescent peroxide like “Efferdent”. It comes as power or tablet. It releases oxygen upon mixing with water. Peroxide could be acidic ,alkaline or neutral in action. Advantages of peroxide are simple to handle and effective with low to medium stains and calculus accumulations. It has also possible mechanical effect through oxygen release (oxygen bubbles itself makes mechanical action on the surface of the denture and so disrupts plaque).

Peroxide and other chemical cleansers should not be used with hot water because use of hot water and very long exposures lead to bleaching of acrylic resin of the denture.

Effervescent peroxide has limited antibacterial effect. It removes plaque but not calculus because of its weak chemical action. Certain brands of Effervescent peroxide are mixed with proteolytic and yeast-lytic enzymes that increase its antibacterial effect.

2- Alkaline hypochlorite (like “dentural”). It has superior cleaning properties compared with peroxide. It has the ability to dissolve plaque and inhibit plaque formation. It has superior stain removal properties. It has some bactericidal and fungicidal effect.

Disadvantages: since it is hypochlorite based, excessive and prolonged use of it cause excessive bleaching and corrosion to metals. Also it will have residual taste if used in prolonged way.

3- Acids (like “Denclin”) they are never used with dentures containing any metal because it is going to cause corrosion. So usually go for safer cleansers.

4-Disinfectants (like Chlorhexidine). Chlorhexidine has bactericidal effect. In complete dentures, we don’t rely on it on its own, but we use it as an adjunct to other treatment regimens. It is recommended especially in denture stomatits where we recommend soaking the denture for 15 minutes twice daily because of it’s **substantively**

Chlorhexidine is not used on the long term because it causes brown staining to natural teeth as well as denture material.

5-Enzymes (like Polident tablets). It is easy to use by putting the tablet in water then soaking the denture in it. Enzymes, when incorporated with other cleansers, increases the proteolytic and yeast-lytic effect

There is a research showing us that chemical cleaning on its own is not enough because always you will have some bacterial plaque that should be removed mechanically.

So instruct your patients to brush their dentures first with soft brush with water and soap then use which ever recommended chemical cleansers.

Now we will talk about each material and what is the best cleanser for it

-For acrylic resin dentures the best cleanser is alkaline hypochlorite. The patient should soak it for 20 minutes in the hypochlorite then rinse and soak with a cup of water.

-Any denture containing metal, we recommend the **alkaline** Effervescent peroxide. Soak the denture for 15 minutes. Or as alternative we can use alkaline hypochlorite for 10 minutes

Otherwise any extensive period could cause the metal to be discolored and corroded

-Dentures with **temporary** soft liners. After extracting the teeth and putting the immediate denture, we use frequent temporary soft relines in the first 6 months and then after that period, we go for permanent relines.

So because they are soft, we don’t recommend brushing. Use Effervescent peroxide for 20 minutes.

-Denture with permanent soft liners use Effervescent peroxide for 10 minutes

-Dentures with fixatives (patient might use adhesives to gain more retention for his denture). Adhesive is hard to clean and if the patient keeps putting layers there will be accumulation of plaque on the surface. So **Mechanical Scraping** should be used to remove the adhesive then soak it with the specific chemical.

**Advantages** of denture cleansers that it prevents malodor, provide better esthetics and prevent plaque and calculus accumulation and then consequently healthier mucosa (prevent damage and inflammation to mucosa)

***Post Delivery Complains***

Complains are categorized into 3 types:

Immediate complains, delayed complains, and problems without complains

Immediate complains is when the patient comes complaining in the post insertion session

Delayed complains come after a prolonged period of using the denture (after year or more depending on the resorption rate)

Problems without complains like denture stomatits which is usually painless. An overextended border that the patient doesn’t complain about could lead to denture fissuratum that needs surgery

\*We should inform patients of possible problems that could occur with them so they won’t be shocked with their denture.

Uninformed patient will be surprised if they have pain. They are also going to feel lost that they lost time and money with poor results. And they will not trust you anymore and think you are incompetent dentist.

Immediate complains like

Pain and discomfort (most common)

Appearance problems

Inability to eat

Nausea

Lack of Retention and stability

Clicking of teeth

Inability to tolerate the denture

Biting cheek and tongue (could also be a delayed problem)

Difficulty in speaking

Food underneath the denture

Inability to keep the denture clean

We will start by them one by one this lecture and the coming one

\****Pain and discomfort***: could be caused by many problems. Most commonly, **overextension** in the periphery and **poor fit** and many others

-Overextension could be caused by and overextended impression.

Clinically you will find hyperemic area or ulceration if the overextension is more advanced

We treat it by using pressure indicating paste or to use the cobia pencil to mark the ulcerated soft tissue then insert the denture and remove it. You will have the mark transferred to the denture so you can adjust it.

-Poor fit could occur if there is **no enough retention** (improper impression or severely resorbed ridge or shrinkage while setting of PMMA). This movement or rocking in the denture could cause ulceration and pain.

We treat it by doing our adjustments to the denture then to use tissue conditioner to make the patient comfortable for a temporary period until we construct a new denture.

Poor fit could occur as a delayed problem after years when the alveolar ridge becomes resorbed

-Insufficient relief leads to pain and discomfort. We could prevent it on the insertion visit by proper use of **PIP**. Undercut areas should be inspected if it is making pressure. Usually occurs when the patient has bony tori, prominent bony areas like buccal canine area, maxillary tuberosity, and Lingual posterior area of the mandible (retromylohyoid area).

\*If the patient needs alveoplasty or other preprosthetic surgery to remove excessive severe undercuts, this decision should be taken before denture construction.

- **Occlusal problems** leading to pain and ulcers

\*Wrong anterior posterior relationship.(Mismatch between centric relation and intercuspal position) This should be recorded correctly in the try in visit. If we record it incorrectly, every time the patient will bite on it and it will not appear till post insertion when the denture will slide a little bit on the tissues so that the teeth will come in occlusion.

The solution is to fix the occlusion. If it is a slight error, you do chair-side adjustment to the occlusion. If it is a moderate error do clinical remount. If it is a gross error we need to remake one or both dentures.

\*Uneven Pressure. Patients will complain they bite on one side before the other and they have pain. In this case, pain is confined to the crest of the ridge on one side and may be related to the buccal aspect of the ridge on one side and lingual aspect of the ridge on the other side. If the patient is aware that he bites more on the right side, **for example**, there would be ulceration on the crest of the right side because of more pressure. If the patient is not aware he is biting more on one side (denture proprioception is usually compromised), there will be ulcer buccally on the right side and lingually on the other side.

To diagnose it, we use mylar strip (0.5 micrometer) on one side and ask the patient to bite then we try to pull it. If it pulls out, there is no occlusion on this side and then switch to the other side. We could also use the pieces of thin transparent paper between the articulating paper (less than 0.8 micrometers) if we don’t have mylar strip.

The solution is the same. If it is a slight error, you do chair-side adjustment to the occlusion. If it is a moderate error do clinical remount. If it is a gross error we need to remake one or both dentures. We can **add** tooth colored self cure acrylic to the occlusal surfaces of teeth on the side we don’t have occlusion on it and then do refining to the added acryl with composite finishing burs

If you grind teeth on the heavy side occlusion, you will compromise your vertical dimension!!

One of the causes of problems in occlusion is *excessive vertical dimension* of occlusion (VDO). There are many causes for it. First there could be an error during bite registration that went unnoticed in try in and insertion. Also, incomplete closure of denture flask during processing is another cause.

Patients with excessive VDO will complain from localized pain on the crest of the lower ridge **bilaterally.** Also patients will complain from teeth clatter or feeling the teeth are too high or in the way (when they want to swallow or speak, teeth touch and click before swallowing or speaking). There is no free way space so when the patient wants to swallow or speak, he elevates his mandible and since there is no free space, teeth will hit each other before swallowing or speaking. Patients will complain that they have muscle fatigue because of stretching the muscles beyond the natural limit of their adaptation.

To diagnose it, first we use PIP as a regular method to relief pressure areas but the patient will come again complaining from the same thing. You should stop here from removing from the fitting surface and start to think about excessive VDO.

Treatment: We check the upper denture. If occlusal plane of upper is acceptable, we remove lower teeth and set them again after taking a new VDO. If the problem is also with the upper, unfortunately we should remake both dentures

Try in stage is very important to detect and prevent these problems

Insufficient VDO causes problems that would also translate as pain and discomfort. It is usually a delayed problem (several years) occurs after **bone resorption** or wear and attrition of the **acrylic teeth.** This decreases VDO and increases freeway space.

Patients complain from indefinite pain which they can’t locate.

This could be associated with tempromandibular joint dysfunction so we should examine TMJ to exclude problems with TMJ

Treatment is to make a new denture, but if the patient comes with freeways space of 16mm,for example, the patient will not adapt a new denture with 2-3 mms freeway space. So we make occlusal pivots to increase vertical dimension gradually until the patient is comfortable with the new vertical dimension. At that point we make new denture at the new vertical dimension.

**The End ..**

**Best of luck ☺**