Prosthodontics Lecture # 16 Alakyaz Assadorian

**Overdenture III**

Last lecture we have mainly talked about abutment preparation.

This lecture we will talk about the different types of overdentures and their specific differences from other types.

Types of Overdentures:

1. Immediate Overdentures
2. Transitional Overdentures
3. Removable Partial Overdentures
4. Overdentures for congenital or acquired defects
5. Remote (Long term) Overdentures
   * 1. Immediate Overdentures:

Definition: is removable partial or complete overdenture constructed for insertion immediately following the removal and preparation of retained teeth. I.e.; it is inserted on the day of extraction.

Remember: when choosing your overdenture abutments there need to be at least 6mm of bone support OR half of the root should be buried inside the bone.

The doctor presented a case, where it was very obvious that the lower anterior incisor teeth needed to be extracted, leaving only the canines on the right and left sides to serve as abutments for our overdenture. We must follow all steps of conventional complete or partial immediate dentures, with the additional step of doing the RCT's of both lower canines and plugging them with amalgam (or Glass ionomer), and on the day of insertion, we prepare the canines (that were previously RCT'd) and extract the incisors, squeeze the site to stop bleeding and insert the denture.

Note: The dentist is advised to do the abutments preparation of the cast after the try-in stage to ensure that the height of the abutment will be as similar to the real abutment tooth inside the patient's mouth. Proper adjustment and checking of the inserted denture can be done on the one-week follow-up, (not immediately, neither on the 24-hour follow-up)

Indications of immediate overdentures:

It is indicated for cases with teeth having poor prognosis. Some of these teeth are selected to serve as overdenture abutments (according to criteria described before) and the rest of teeth are indicated for extraction.

* + 1. Transitional Overdentures

We have previously talked about transitional partial dentures in partial denture lectures. Transitional dentures are usually made of acrylic, with wrought wire clasps that are the main source of retention. The teeth that are in constant contact with the wrought wire clasps become mobile after a while because the clasps produces forces similar to orthodontic forces on them. So, if we still had 6mm bone support around these teeth, we can still save them instead of extracting them. We do RCT, and use them as abutment teeth for the transitional overdenture. The concept here is to preserve the tooth as much as possible for all the reasons we have mentioned before; mainly for delaying bone resorption especially in the lower arch where the alveolar bone is needed for future complete denture, and for preservation of proprioception.

Note:

A pick up impression is used to add a tooth to an existing transitional partial denture. This process can be done in the dental clinic if the patient needs it urgently and has good-looking but symptomatic teeth - by pouring the impression indentations with tooth-colored acrylic material, pressing it on the teeth before full setting of the acrylic to take the dome shape of prepared teeth, and then leaving it for full setting under pressure. However, in this case a flange cannot be added, unless the impression was poured into a cast and sent to the lab.

* + 1. Removable Partial Overdentures

Advantages:

1. Retention of the prosthesis (overdenture abutments)
2. Stability of prosthesis
3. Reduce distal extension problems
4. Retention of the prosthesis (overdenture abutments):

The doctor presented a case, where Kennedy classification in the lower arch is class 1 (bilateral distal extension) with only the anterior teeth remaining. The condition of the canines is not perfect, so they cannot be used as abutments to hold the clasps for a conventional acrylic RPD. And if we extracted them we would end up having to use the laterals as abutments, which is something we don’t prefer due to their form and their short conical roots. Therefore, we can decide to leave the canines, turn them into overdenture abutments, and construct removable overdenture prosthesis. The dome shaped canine will help give us support and instead of the clasp assembly retainers we can add overdenture attachments to aid our retention.

1. Stability of prosthesis
2. Reduce distal extension problems

Removable partial overdentures help us in stability as well especially in distal extension cases where the difference between the support of the edentulous and dentate areas vary. Therefore, keeping a tooth (as overdenture abutment) that would otherwise cause a distal extension problem by extracting it, help us overcome instability.

* + 1. Overdentures for congenital and acquired defects:

Indications:

Hypodontia/cleft palate and surgical defects

* Patients with cleft palates are usually presented at a young age, complaining of function and aesthetics. The challenges of treating such cases is the reduced retention provided by their existing teeth, the defects that are present and the loss of bone support problem at a very young age if treatment was decided to be extraction at this very early age.
* The doctor presented a case of Hypodontia.

* Note: In all overdenture cases, there is never complete contact between the abutment and the fitting surface so we always do **relining to the site of abutment**, because acrylic is dimensionally unstable. However, our aim is **passive contact**; so we use PIP to ensure intimate yet passive (not active) contact to avoid damaging underlying structures.
* Doctor showed a case of **metal coping** (*telescopic crown*)

This can be used to reduce root caries, although some studies which do not support this idea, say it depends on the oral hygiene not to develop root caries rather than the metal coping of the abutment tooth.

* Doctor showed a case of Implant supported removable partial overdenture.
* Doctor showed a case of severe tooth wear – (attrition) where patient's complaint is poor aesthetics and reduced function. Here the treatment is full mouth rehabilitation, where increase in vertical dimension is necessary. This critical procedure a face bow registration, followed by constructing a temporary appliance that could raise the vertical dimension gradually. **This temporary appliance could be an overdenture**, which is usually a transitional phase until the patient does oral rehabilitation. However, in this particular case the patient was happy with the first phase and he did not continue treatment.

In such cases, we need to know the cause that to attrition in the first place and treat it in order to avoid having the same done to the prosthesis.

First raise: 4 mm anteriorly; this will lead to 2 mm posterior raise and 1 mm condylar raise. Most important point is having a balanced gradual right and left raise of the bite; with no particular maximum amount that the patient can accept (sometimes a simple high amalgam restoration can be very painful to the patient, so balancing is most important point). Frequency of raising the bite depends on the case and the patient's tolerance.

In this procedure, we don’t prepare the teeth, which is what makes this treatment **reversible**; if the patient doesn’t tolerate it, they can simply throw away the temporary appliance.

Advantages:

1. Simplicity
2. Reversibility
   * 1. Remote (Long term) Overdentures:

Contains metal framework and attachments

More expensive

Indicated when the patient is ready to comply with our instructions

Note: After constructing and inserting the prosthesis, it is the patient's responsibility to take good care of the hygiene and maintenance of abutments and denture.

* OD Risks:

1. Abutments; Caries

Wear – if opposed by natural dentition

1. Periodontium; Gingivitis

Periodontitis

Hyperplasia (ill-fitting surface; i.e. the relation between the

fitting surface and the abutment is not/no-longer

proper so the periodontium starts filling those spaces)

\*Note: We must give oral and written instructions to the patients.

Plaque control of the abutment teeth:

* Effective plaque control by the patient
* Brushing root surfaces to be part of the normal oral hygiene program
* Chlorhexidine can be helpful (we are not worried about abutment staining)
* Not use regular brush (use a special brush with a small tip to avoid injuring the mucosa)

Plaque control of the denture:

* Overdenture should be brushed after meals with a **soft** toothbrush; a hard toothbrush might alter the fitting surface
* Particular attention should be paid to impressions in the region of the root-face depressions
* Hypochlorite solutions are found to be efficient (But make sure to clean it properly before re-use). How to use it? Soak the denture in a cup of water with one spoon of hypochlorite added, then rinse/clean well before re-use.

Care of the root face:

* Topical Fluoride application should be carried out immediately after the root face preparations (immediately after preparation of the abutments).
* The patient can also place a small amount of tooth paste in the fitting surface after brushing their teeth and the denture in the mornings. This will help retain the Fluoride in the toothpaste in contact with the root surfaces for as long as possible. An advantage of this is the using the regular toothpaste available at home rather than buying special fluoride pastes that are more expensive.

Patient instructions:

* Once a day – brush the overdenture abutment followed with 0.4% stannous of gel
* Patients can expectorate the excess fluoride, but should not rinse or drink for at least 30 minutes
* Early morning one drop of 0.4% stannous fluoride gel is placed in fitting surface

Good Luck