**Geriatric prosthodontics**

*(Special consideration for elderly)*

**Geriatric period**: it is not really defined by a specific age; a woman can be above 60 years old but she is not considered geriatric because she is healthy and walks everyday (sporty), on the other hand, a man can be below 65 and considered geriatric because of his systematic disease or alcohol addiction.

**In general:**

60 years for females

65 years for males

**Are the starting points of geriatric period**

The process of aging is ‘’genetically determined’’ normal physiological termination of normal development. (Eventually everyone will get old)

The decline of cell activity and cell repair start at early at 30 years and until 65 years the cell activity and mitosis will be down the hell.

**What concern us as prosthodontists:**

Oral and perioral changes:

1. Facial skin and perioral muscles
2. Oral mucosa and sub mucosa (degree of atrophy in areas that form tissue beds for the prosthesis)
3. Neuromuscular system ( specially the muscles that effect the relation between the maxilla and the mandible)

As we all know the maxilla can’t move because it is sutured to the base of the skull, and the mandible can move through the TMJ (the TMJ is the last joint to finish growing at age 21)

**Typical geriatric case:**

The doctor viewed a picture of an 94 years old lady named Gladis ( She was his patient in the us) she was Indian American dumped by her own family and lived in one of the nursing elderly houses , diabetic, and in a poor health.

**First**: facial skin and perioral muscles

* Folding around the mouth
* Complete disappearance of the red zone of the lips
* The mouth corners dropping down because of the decrease muscle tonicity ( young patients show more upper teeth while talking and smiling while elderly show more lower teeth)
* Decreased facial height
* Sagging of the lips
* Deeping of the vertical lines in the lip and face

Prosthesis can support the corners of the mouth and make the folds straighter, but deep cresses in the skin are something that can’t be treated by prosthodontic, Botox and fillers may help in this situation.

The teeth support the lips but when a person lose them the lips will be unsupported and the red zone will disappeared, as we all know the lower incisal thirds of the upper teeth supports the lower lip, so in the try in stage we should make sure that the lower lip is supported, the upper anterior teeth with the ridge support the upper lip, the canines eminence support the commissures.

**The doctor viewed another 2 pictures: (To see the level of bone lost they held the incisor in its place)**

The first pic before extraction and the second pic after.

After extraction and bone lose the patient was only left by the lower border of the mandible (compact bone)

The mental foramen in the first pic is high but after extraction it migrated to the crest of the ridge and in this case we find burning sensation and paresthesia because the denture will press against neurons

**Second**: changes in the oral mucosa:

Atrophic changes in the om manifested by:

1. Decreased thickness of mucosa and sub mucosa (In elderly it is skin like thickness that can be easily traumatized )
2. Diminished elasticity of connective tissue
3. Declined vascularity of mucosa
4. Increased susceptibility to chemical, mechanical, and bacterial irritation.
5. Prolong healing time after trauma. (fibrous tissue + mitosis rated is decreased)

The implication of mucosal changes on prosthodontic techniques are as follows:

1. Reduced mucosal resiliency implies the periods of tissue conditioning prior making final impression must be extended. (as a routine we ask the patient to remove his old denture for 24-48 hours depending on his age before the final impression, the tissue must rest, but if we take the final impression without letting the tissues to rest we will take the print of the older denture fitting surface and this is not accurate, we should take the ridge normal appearance and not what the denture made it look. But if the ridge is so atrophic we should extend the period to 1 week instead of 2 days, sometimes we may use tissue conditioner beneath the old denture if the patient can’t stay a week without his denture.
2. Reduced mucosal elasticity implies that impression must be made with free flowing material in accurately border. (impression plaster (preferred), alginate, light body silicone) (they don’t compress tissues)(no need for green sticks)

Compound won’t work because of it limited flow ability, if it is used the tissue won’t return to its normal position because the elasticity is lost.

**Third**: Neuromuscular changes (the most important changes they effect the patient movement “the mandible movements”):

These changes manifested by:

1. Difficulty in learning new pattern of muscular activity. If you teach them how to achieve centric relation they won’t be able to repeat it. They won’t be able to achieve cusp to fossa relation like younger patients (pin point occlusion)

Implies:

Major changes in teeth position or occlusal pattern (must be avoided)

1. Decreased muscular trainability and precision of madibular movement.

Implies that:

* Required jaw movement should be rehearsed by letting them guide their mandible by their hand in front of a mirror.
* Jaw relation must be registered with very fast setting materials. (the doctor use compound rims instead of wax rims and when he want to take the rims out of the mouth to record the bite relation he stapler them together
* If it is difficult to achieve balanced occlusion, we use functional generated occlusion. (the top 3mm of both the compound rims are made out of mixture of pomis+plaster, at the third visit (bite registration) we let the rims in the patient mouth and let him grinned away his own articulation inclines by moving his mandible forward and backward, right and left, until he reaches the optimal vertical dimension, in this way the articulation is made under the patient own function. The teeth that are used in this case are the zero cusps.

When major changes are necessary they should be carried over an extended period of time by employing the:

* **Incremental modification and habituation therapy. ( explained below)**

**Gladis case:**

She is a pseudo class 3 patient why?

She lost her posterior teeth first, so in order to be able to eat she protrude her mandible until she reaches the border position (ligament position), in this position she can’t protrude her mandible more. Her vertical dimension is reduced.

**We must correct three things:**

1. Her denture is not extended to the functional depth of the sulcus, so we should extend it.
2. Drive the mandible backward gradually to deprogram the muscles of mastication.
3. Increase the vertical dimension.

**First visit:** we extended the denture border slightly, and put an acclusal bite plane covering the lower 6s and making sure that they are occluding with the upper 6s (only one contact point on each side), when the patient chews that way it is not comfortable, so they try to search for another position to chew, and because they reached the border position they can’t bring their mandible more anterior, so they move their mandible backward.

**Second visit:** they extend the borders more, build the post dam area, and raised the height of the posterior bite plane 1 more mm.

**Between visits and for every 1 mm raised 3 weeks should be given.**

**Last visit**: build the entire border, reach the desired vertical dimension, and the mandible is driven back to the centric relation.

**Gladis treatment took 8 months, and at her last visit she was wearing an engagement ring. :p (love from the first smile)**

**Wish you all happy endings just like gladis**

All the thanks go to Mays M-Alrefai