Abstract.
Prolonged edentulous periods can complicate prosthodontic treatment. Among other changes loss of vertical dimension occurs. This can be easily managed in dentulous patients by opening the bite. In edentulous patient this paper gives a case report about the use of treatment complete dentures. The concept of modifying the existing denture. This can be used as an interim denture so that the increased vertical dimension can be adjusted.

Key words: complete denture, vertical dimension, treatment denture, edentulous patient.

Introduction
The establishment of a proper vertical jaw relation is an important consideration in prosthodontic treatment. It however varies for dentulous and edentulous patient. The establishment of a correct vertical maxillomandibular relation is an important parameter, factors affecting vertical dimension, masticatory musculature, occlusion, occlusal rims and complete dentures. However not all cases with tooth loss do not have loss of vertical dimension. In these patients there is loss of vertical dimension and all changes in the muscle and temporomandibular joint tend to occur. In partially edentulous patients it is easier to manage with the use of splint to compensate for the loss of vertical dimension.

Vertical positioning significantly more than 1 mm apart may indicate lost OVD. This may not be true in patients with Angle’s classes II and III.

It is critical to verify loss of occlusal vertical dimension (OVD) before the restoration of an increased OVD. The different techniques that can be used are use of phonetics, the use of interocclusal distance, and the evaluation of soft tissue contours. Current technique may involve the use of lateral profile photoraphs. Both Pound and Silverman have described the reliability of the speaking space as a method to determine OVD for complete denture patients. The normal mandibular position during sound places the incisal edge of the mandibular incisors about 1 mm inferior and lingual to the incisal edge of the maxillary incisors.

Methods of measuring interocclusal distance are diverse, inaccurate, and inconsistent. Measurements can be used as supplemental diagnostic aids and they are to be used as mere guidelines. A good clinical judgment must prevail. A patient who demonstrates an interocclusal distance of 6 mm is more capable of tolerating a slight increase in OVD than the patient with an interocclusal distance of 2 mm. Diminished facial contour, thin lips with narrow vermilion borders, and drooping commissures are associated with over closure. However, wrinkling and loss of facial contour are normal ageing processes and one must not attempt to correct these changes by increasing the OVD.

None of the above techniques are found to be scientifically as accurate as their proponents claim. Use of more than one technique of evaluation of OVD may increase the accuracy and reliability. The treatment consists of finding the etiology, diagnosis and treatment plan, evaluation of vertical dimension and deciding on the treatment modality. The changes associated are in appearance of teeth, pain or sensitivity, loss of vertical dimension, undesirables facial appearance, and loss of muscle tone, angular cheilitis and loss of cubicle space in oral cavity, impaired hearing and temporomandibular joint disease.

A 63 year patient reported to the department of Prosthodontics, Madha dental college and hospital for new dentures. Clinical examination revealed that there is significant loss of facial height and muscle tonus and altered facial appearance (Fig.1). A dental history and examination revealed that the patient has been using the same complete denture for 15yrs. Examination showed completed wear of tooth structure in the denture and measurement of vertical dimension showed loss of vertical dimension (Fig.2).

Figure 5b. Postoperative Fig. 1. Pre-operative view.
The patient was decided for prosthetic rehabilitation. His old denture were relined and used as a base for his treatment denture. New maxilla mandibular relations were recorded (Fig. 3). The patient was decided for prosthetic rehabilitation and the old dentures were relined and used as a base for his treatment denture. After a period when the patient was accustomed to the increased vertical dimension his final dentures were constructed (Fig. 4).

The final post-operative view with the denture in place. Note the restoration on vertical dimensions and improved facial appearance. (Fig. 5a, 5b, Fig. 6a, 6b).

Discussion

The use of a complete denture is associated with impaired masticatory function, poor quality of life, and with oral lesions when the denture is inadequate. A recently published cross-sectional study revealed the wearing of complete dentures, or the poor prosthetic aspect of these dentures, significantly increases the prevalence of muscle pain on palpation. Other studies have asserted the renewal of dentures with poor retention and stability reduces TMD symptomatology. Finally, the incorrect vertical dimension of occlusion (VDO) is historically associated with TMD.

In edentulous subjects, the retropharyngeal space (RPS) and posterior airway space (PAS) were observed to be reduced. This was due to anatomical changes causing decrease in vertical dimension resulting into collapse of orofacial structures. Loss of vertical dimension of occlusion which causes reduction of the lower face height and rotation of the mandible are some of the conditions which may lead to obstructive sleep apnea. In edentulous patients while recording lung function tests without dentures produces mild but significant decrease in inspiratory airflow rates, this may be suggestive of same threat to the patency of upper airway.

Robertson CJ in 1998 theorized that increasing the vertical dimension of occlusion during fabrication of prosthesis for edentulous patient with obstructive sleep apnea was essential to ensure that dislodgement did not occur nocturnally. In the absence of complete dentures, edentulous older people often lose the occlusal support necessary to position the mandible, which leads to an anterosuperior shift of the mandible during swallowing. This may result in pharyngeal shape changes effecting swallowing function in older people. However, the details of this phenomenon are currently unclear. Complete denture was adequate freeway space may be helpful inpatients with sleep apnea or obstructive respiratory disease.

Conclusion

Treatment of Temporomandibular joint disease needs to be etiology based. This case report gives one of the simple modalities of treatment. Vertical dimension may play a role in the development however the role is not well defined. In this case there was improvement of symptoms following therapy. This could be used as a palliative care option while treating completely edentulous patients.

References