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### Review Article

#### Aesthetic in Complete Denture- A Review

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#### ABSTRACT:

Denture esthetics is responsible for the beautiful and attractive effect of an individual. It is the combination of science and art of prosthodontics. The appearance of the lower part of the face is primarily affected due to loss of oral structures. The appearance of the entire lower half of the face depends upon the dentures in edentulous patients. Denture esthetics is not only about the selection of denture teeth but other factors also play a crucial role like occlusal plane, vertical dimension; centric relation and impression technique. In order to achieve the esthetics for complete denture, a dentist should consider the esthetic guidelines.

**Key words:** Complete denture, complete denture esthetics, oro facial esthetics.

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#### INTRODUCTION:

For centuries, poetry and literature have indicated that teeth possess their own beauty and also that they contribute greatly to the facial beauty. In 1970, the term esthetics was coined in order to designate the science of sensuous knowledge that gave beauty, in contrast to the science of logic that gave truth. In the later years, the term was related to fine arts as the theory of beauty.<sup>1</sup> Various definitions for esthetics have been given by many authors. The esthetics is the harmonizing of artificial with the natural. The basics of esthetics are beauty, naturalness as well as individuality.<sup>2, 3</sup> The

denture esthetics can be defined as the cosmetic effect produced by a dental prosthesis that influence the desirable beauty, character, attractiveness and dignity of an individual. It is the effect produced by a dental prosthesis that impact the beauty and attractiveness of a person.<sup>4</sup>The lower part of the face is primarily affected by the loss of oral structures, but in order to achieve the harmony of the entire face, the restoration must be in esthetic correspondence with the upper part of the face.<sup>5</sup> The appearance of the entire lower half of face depend on the dentures.<sup>6</sup> The proper position and functional length of the muscles influence the normal facial

appearance and skin tone.<sup>7</sup> It is essential for the denture esthetics to have a proper repositioning of the orbicularis oris muscle. In order to reposition the orbicularis oris with complete dentures, three important factors have been mentioned:

- Labial flange thickness of both dentures – Since esthetics as well as retention and esthetics are important objectives which can be accomplished at the impression phase of treatment. On the basis of extent of residual ridge loss, the thickness of border must vary with the needs of patient. In order to restore the facial contour, the vestibular fornix should be filled, but not overfilled.<sup>8</sup>
- Position of the teeth (Anteroposteriorly)- This must be achieved prior to the recording jaw relation records, moreover it is dependent upon proper thickness of the labial flange. In order to restore proper contour of the lip, the occlusal rim is adjusted. The placement of the anterior teeth is facilitated when this is precisely carried out.
- Proportion of separation between maxilla and mandible – In order to restore the normal physiological length of the muscle, the correct vertical dimension should be established which allows the normal facial expression.
- The occlusal rims should be contoured properly in order to have an adequate support of the musculature as well as to facilitate the placement of teeth. The correct vertical dimension of occlusion must be established in order to restore the physiological muscle length and also to eliminate a prognathic appearance.

Both facial factors as well as orodental factors are significant in order to achieve the denture esthetics and pleasing harmonious facial expression.<sup>9</sup>

#### **DISCUSSION:**

Dentures restore a natural appearance leading to increased patient confidence and ease in social interaction. Dentist should attempt to create an appropriate appearance and smile that suits the patient's physical character as well as esthetics needs.<sup>10, 11</sup> Denture esthetics is not only about the selection of denture teeth factors but features like vertical dimension, occlusal plane, impression technique and centric relation also significantly affect denture esthetics, moreover, the impression techniques supporting the facial musculature with properly formed denture borders is also essential. The appropriate width of the denture borders restores the natural facial contours. These borders are formed by the functional position of buccal and labial vestibules as established with the final Impression.<sup>12</sup> In order to restore the long-standing edentulous condition with significant residual alveolar ridge resorption, thicker borders are

required for proper muscle position. In the sagittal view, occlusal plane is determined by the incisal plane, which is determined by the incisal edges of the maxillary central incisors.<sup>13</sup> Width of maxillary central incisors are well established by the esthetics as well as phonetics. The amount of incisor edge visible with the relaxed upper lip can range from zero to several millimeters. The length should be adjusted to where wet or dry line of the lower lip makes a light contact with the incisal edges.<sup>14</sup> The occlusal rim must offer an adequate support for the soft tissues of the face and also must allow the esthetic buccal corridor. The maxillary wax rim should follow the smile line of lower lip of the occlusal plane is oriented properly.<sup>15</sup> In order to achieve proper positioning of the orbicularis oris and associated muscle, it is very essential that there should be a correct establishment of occlusal vertical dimension. Moreover to achieve a harmony between the lower third of the face and whole face, the occlusal vertical dimension is of great importance. There is a close inter-relationship between centric relation and vertical dimension and thereby loss of vertical dimension results in a more exaggerated class III occlusion. There are anatomic landmarks for anterior tooth selection, and manufacturers aids that can be used as the guides in the process. The morphology, size, placement, color and characterization of teeth are the factors to be considered. It is important to carefully evaluate the patients with existing dentures. A concept developed by Frush and Fisher that the integrated selection of the teeth into an esthetic system governed by the age, sex and personality of the patient.<sup>16, 17</sup> For the selection of anterior teeth, an appropriate tooth size is probably the most critical factor. The teeth should harmonize with face, arch size and the physical body of the patient. In 1922, Nelson<sup>18</sup> and later in 1951 French suggested that the arrangement of teeth is a very important and crucial esthetic factor than the mold selection. The arch form, profile of the face and smile line of the patient are the guides for initial placement of the anterior teeth. In general, the inclination of the maxillary and mandibular teeth are parallel to the profile of patient's face.<sup>19</sup> The arch form and arrangement of the anterior teeth have a definite relationship to the arch form of the residual ridge.<sup>19,20</sup> Teeth must be arranged in harmony with smile line of the patient. The reverse curve should be avoided as well as the incisal edges of the maxillary teeth should follow the lower lip line. Gradually, the teeth should rise along the occlusal plane towards the back in order to follow a smile line and also give an impression of distance. The dental midline should coincide with the facial midline and also must be vertically straight. A distance from gingiva to lip of 4 mm or more may be considered unesthetic. It has been stated by Mortone that "the key to esthetics lies in asymmetry, slight modifications in the position of

incisors, such as overlapping rotation, and small diastema and incisal variation may change the light reflection just enough to produce artistic distal composition desirable for the patient.<sup>12, 19</sup> It must be identified that the denture base represent the mucosal and gingival tissue of the arch. Therefore, the denture base contributes to the oral and facial esthetics according to its color, bulk and surface characterization. Shade of the tissue can easily be determined and duplicated by comparison with the help of acrylic shade guide. The selection of the denture base should be done with as much care and caution as in selecting the teeth. Now with the availability of life-like material, the denture base can be given a life-like appearance. Vascular appearance can be simulated by placing the vertical fibers on the buccal and labial surface. By shortening the papilla ageing can be simulated and by raising the gumline, recession can be evident. Zewskify had put forth the three esthetic concepts, they are, natural, supernormal, and dentures look. The normal appearance in accordance is determined by the inherent character or basic constitution of an individual. The use of artistic determinants of personality and anatomic norms for age and gender achieves harmony with the overall appearance. Supernormal appearance is that from what is usual or normal especially in order to appear to transcend laws of nature. The alterations from anatomically norms in order to provide the subject with what he/she consider as beautiful. Denture look appearance that accords or befits with a set of false teeth.<sup>19</sup> In complete denture wearers, appearance with the error in tooth display shape, size and the arrangement are typically seen. Micheal in 2005 has given the following universal esthetics goal for complete denture i.e., the incisal edges of maxillary teeth should follow the lower lip line and also the reverse curve should be avoided. The dental midline coincides with the facial midline and should be vertically straight.<sup>20</sup> A gingival to lip distance of 4 mm or more may be considered unesthetic. These factors should be considered as the base line esthetic guidelines in order to fabricate the complete denture, specific decision about tooth display, proportion, shape, size, color and arrangement and to some extent position are based on the esthetic concepts.

**CONCLUSION:** In order to treat the individual patients, each requiring different esthetic approach, the concept of esthetics has fascinated mankind for centuries. There should be thorough patient evaluation, various physical factors, along with physiology and anatomy of the face should be employed. All the currently available modern materials and tremendous variety of the esthetic artificial teeth are not everything that is necessary to achieve the esthetics. Moreover, the esthetics goes much further than the simple placement

of teeth in the occlusal rims. The teeth should be arranged in such a manner that it should meet the patients' functional needs as well as follow the esthetic guidelines in order to achieve the denture esthetics. The goal of successful denture today is to attain a healthy beauty by harmonizing the morphology as well as function.

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