

Theatrical Dentistry – A New Dimension of Dentistry



Medical science

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ABSTRACT

There are time tested principles of esthetics and phonetics which are used in dentistry to improve the patient's facial appearance and speech. Application of these principles to impart the character on the artist to make him more suitable for that character constitutes theatrical dentistry. Different artificial substitutes in the form of resin, silicone and clay are used to modify the appearance of the actor. Theatrical dentistry is an incredibly efficient way to alter an actor's personality. Dentist plays a major role in this field as he is trained in terms of knowledge and skill to carryout this job. This new dimension of dentistry is often described as practicing dentistry backwards, where instead of esthetics and speech, characterization is considered to be more vital. Thus, Theatrical Dentistry is important and evident, but nonetheless, less explored.

Introduction

The field of dentistry from the day of its inception strived for achieving aesthetics, mastication and phonetics by treating the problems associated with the teeth and its associated structures. Of late a new dimension of dentistry is evolving called as "theatrical dentistry". Which mainly aims at spoiling or characterizing smile and altering the speech to bring alive the character being played by the actor. To understand the principles followed in theatrical dentistry, we should know about the normal aesthetic and phonetic concepts followed in dentistry to restore the beauty and speech.

To achieve aesthetics, different theories have been proposed in the field of dentistry to select the artificial teeth to replace the missing teeth for a particular person. Most commonly followed concept for the selection of the teeth is dentogenic concept & its dynesthetic interpretation given by Frush & Fisher in 1956. According to this the characterization of an individual using the dentition encompasses numerous factors, the importance of which cannot be denied.¹ The dentist's perception of the individual's appearance and mannerisms forms the basis of the dentogenic theory, while the various procedures undertaken to transform this perception into reality constitutes the dynesthetic concept.¹ This concept is concerned with three important divisions of dental prosthesis fabrication: the tooth, its position & its matrix (visible denture base). This can be done in a comprehensive manner with reference to the patient's age, sex and personality (SPA factors) as primary factors. Fisher states that "utilize the approach of an artist while analyzing the patient, first as to sex, i.e. male or female, then as to personality i.e. vigorous or delicate, and then as to age, i.e. young, middle aged or old".¹ Age, sex and personality are imperative, as they reconstruct dynamic unity.¹ As stated by authors, vigorous persons sharp teeth, prominent canines are given where as for delicate personality rounded incisal edges and less prominent canines are given. older populations have darker and more abraded teeth than younger populations; square teeth are preferred in aged people with many wrinkles, while tapered and rounded teeth are suitable for young women. Women have smaller lateral incisors than men while stronger personalities have more pronounced canines. Modifications in one or more of these factors can be administered in order to alter the appearance of an individual according to the look desired. Thus, the importance of selection of artificial teeth, the possibility of reshaping the teeth and contouring of artificial gingival cannot be denied.²

Collins English dictionary defines phonetics as the science concerned with the study of speech processes, including the production, perception, and analysis of speech sounds from both an acoustic and a physiological point of view.³ As stated by Beumer, there are six components to speech: respiration, phonation, resonance, articulation, audition, and neurologic integration.^{4,5} Normal speech depends on a variety of factors such as lungs and muscles, vocal cords, oral and nasal cavities, brain, tongue, lips, teeth, and palate. For example, by placing the maxillary anterior too far posteriorly, the s sound can be made to sound like the 'sh' sound.⁶

While replacing the missing teeth by means of a dental prosthesis effectively correcting the phonetics(speech) is equally important. There are guidelines given by different authors to improve the phonetics through proper placement and alignment of the teeth. Bilabial sounds are

b, p, and m are made by contacts of the lips. The labiodentals sounds f and v are made between the upper incisors and the labiolingual center to the posterior third of the lower lip. Linguo-dental sounds (th in *this*) are made with the tip of the tongue extending slightly in between the upper and lower anterior teeth. Linguoalveolar sounds (t, d, s, z, v and l) are made with the valve formed by contact of the tip of the tongue with the most anterior part of the palate or the most lingual side of the anterior teeth.

Above mentioned aesthetic and phonetic principles are commonly used in dentistry for fabricating the successful dental prosthesis. Following the same principles of selecting and aligning the teeth and modifying the facial features through artificial substitutes to best suit the character played by the actor rather than actor himself constitutes the theatrical dentistry. There is no definition available for the word "theatrical dentistry". Merriam Webster dictionary only gives meaning of the word *theatrical*, is related to theatre or the presentation of plays. Generally in theatrical dentistry, characterization is achieved by placing fractured, missing, malaligned teeth, or by altering the tooth form, profile, number and color. Common abnormal sounds, such as whistling and swishing can be made to occur in the speech of an actor by incorporation or alteration of various principles of phonetics also helps to better depict the actor's dynamism and best reflect the character being essayed. There is very little authentic literature available about this new dimension of dentistry. Through this report theatrical dentistry is logically classified and an overview is given about its scope.

There are mainly two dimensions to Theatrical Dentistry

1. Alteration in aesthetics
2. Alteration in phonetics

1. Alteration in aesthetics

Creating the aesthetic alteration is one of the important goals of theatrical dentistry. This is done either to match the aesthetic features of person or fictional character(eg. Vampire)⁷.

There are two types of aesthetic modifications

A. Prosthetic modifications

- a) Dental
- b) Facial

B. Orthodontic modifications

A. Prosthetic modifications

This involves the modification of the dental and facial features by using the artificial substitutes like resins, clays, silicones etc.

a. Dental prosthetic modifications

A character can be created by innovatively modifying the teeth to create a personalized smile. A variety of combinations can be used such as changes in color and position, individual grinding and placement, placement of restorations and worn appearance and subtle variations in natural proportions.⁷

A character's look can be modified to look either mature or youthful, depending upon the specification required. For authentic portrayal of older characters, inter occlusal distance is reduced, making mandibular teeth more visible than the maxillary teeth. Teeth selected are usually abraded and shiny to give the appearance of loss of contacts. Gingival recession may be reproduced to lend authenticity. By placing anterior teeth too far posteriorly, a characteristic drooping or turning down of the corners of the mouth is seen.⁷ Drooping and deepening of the nasiolabial grooves, small vertical lines or wrinkles above the vermilion border, deepening of the sulci and reduction in the prominence of the philtrum is noted, thus giving the false appearance of an older look. A striking difference is observed when the anterior teeth are in its proper position, resulting in a more youthful appearance.^{8,9} As per the persona of the character envisioned, squarish, larger teeth are selected for a vigorous look while relatively smaller and more symmetrical teeth with anteriors in a flat plane are selected for executive characters.⁹ Keeping in mind the habits of the on screen character, various stains are incorporated to illustrate smokers, alcoholics and tobacco chewers.¹⁰

b. Facial prosthetic modifications

A facial prosthetic can be used to change or adapt the outward appearance of the actors face. The ultimate effect can either be a drastic modification in the outward appearance or a subtle effect like altering the curve of a nose or cheek. It can transform actors into sci-fi creatures, anthropomorphic characters or mythological beasts.

The first step in prosthesis fabrication is to obtain a working cast of dental stone or epoxy resin. Wax can be used for sculpture and formation of the prosthesis pattern. The wax may be tinted with dry earth pigments to form skin color as well. Oil pigments, rayon fibers, silicon paste pigments or liquid makeup can also be used to provide color. Kaolin powder can be added to provide opacity. Surface contour and skin texture can be established as per the requirement of the character. Carving of lines and wrinkles around the eye and mouth can be done. There are innumerable methods for intrinsic and extrinsic coloration of silicone materials. Micro air-spray techniques can be used to color the surface of the mold. Some dentists use no distinctive intrinsic color, relying on the external coloring techniques only. The method of coloring is largely at the discretion of the dentist.¹⁰

Another application of facial prosthetics in theatrical dentistry is that of a cheek recontouring device, such as a lip plumper. The use of a lip plumper is indicated in the plastic repair of a lip or to restore esthetic contour to a lip.¹¹ This device accentuates the lips and jaws, making them stand out. For an actor on stage, it can give its character an older and mature and look.

B. Orthodontic modifications

Application of orthodontic brackets can metamorphose an actor's character. Here we use both orthodontic brackets and also the wires to make it look as natural as possible. An important

aspect is to ensure that there is no permanent damage to the actor's teeth. Care must be taken to avoid generation of any active force. The bonding of the brackets to the teeth must be completely passive. The slots of all the brackets must be at the same level so that the orthodontic wire passes through it passively. Understanding the physics and clinical applications can help in reducing undesirable side effects.^{12,13}

2. Alteration in phonetics

Common abnormal sounds, such as whistling and swishing can be made to occur in the speech of an actor by incorporation or alteration of various principles of phonetics. According to Pound, altering one or a combination of factors like vertical overlap, horizontal overlap, lower anterior tooth display, class of occlusion, maximum usable vertical dimension, index of incisal guidance and maximum serviceable cusp height can result in voice modulation, thereby causing diversified speech. For example, by placing the maxillary anteriors too far posteriorly, the *s* sound can be made to sound like the '*sh*' sound.⁹

Bilabial sounds can be altered by insufficient support of the lips by the teeth. The anteroposterior position of the anterior teeth, modified vertical dimension at occlusion and thickness of the labial flange can affect the production of these sounds. Labiodental sounds can be altered by changing the horizontal and vertical position of the maxillary anteriors. If the anterior teeth are too short (set too high), the *v* sound will be more like an *f*. If the anterior teeth are too long (set too far down), the *f* sound will be more like a *v*. Linguodental sounds can be varying the

labio-lingual inclination of the maxillary incisors as well as increasing the vertical overlap can lead to changed pronunciations of these words. Linguoalveolar sounds can be altered by lingual placement of the teeth, which will make the *t* sound like a *d* while labial placement of the teeth will make a *d* sound like a *t*. The *s* sound can be considered dental and alveolar speech sounds because they are produced equally well with two different tongue positions. *Most people make the s sound with the tip of the tongue against the alveolus in the area of the rugae, with a small space for air to escape between the tongue and the alveolus. Since the size and shape of this small space determines the quality of the s sound, modifications in this space can result in voice modulation and a natural lisp. If the opening is made too small, a natural whistle occurs,*

*enhancing the authenticity of the performer. If the space is too broad and thin, the s will be underdeveloped as an sh sound, somewhat like a natural lisp.*¹⁴

Conclusion

Evolution of theatrical dentistry has widened the scope of dentistry till its application to the field

of entertainment industry. Dentists are trained in terms of knowledge and skill to achieve dental and facial aesthetics and to restore phonetics. Dentists use the same principles to modify the facial appearance and the speech for theatrical purpose. It is predominantly an art but transformations induced without bearing in mind the scientific principles specific to them are neither credible nor factual.

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