

Dental Modification: Self Fabricated Mania

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Abstract

Dental modification or dental art is practiced in past and still prevalent today in several areas of the world. The modifications of human dentition performed can be intentional modification and sometimes unintentional when the teeth are used as tools, such as pliers, vices and grooves or notches are formed on the occlusal surface that do not match the wear patterns of mastication. The knowledge of dental modification can be a powerful tool for the identification procedures of living or dead persons or even in human remains especially providing relevant information about the ethnic origins and the cultural background of a subject. Thus, dental modification performed in any way either in past or in modern time can greatly help forensic deontologist's practice in dental profiling process and dental practitioners to learn tattooing of teeth as well.

Keywords: Dental modification, Mutilation, Scarification

Introduction

The culture of body modification is seen since ancient civilization round the world which involves deliberate altering of the human anatomy or human physical appearance.[1] It is often done for aesthetics, sexual enhancement, rites of passage, religious beliefs, to display group membership and as a traditional symbolism.[2] Different forms of body modifications that are seen around the globe are body piercings such as ear & nose piercing associated with Hinduism, lip piercing, tattoos, paint and burning symbols with particular patterns into one's skin, neck elongation in Thailand and Africa, tooth filing in Bali, and earlobe stretching common in Africans.[1]

The term "piercing" refers to a practice carried out in order to insert the jewellery on a site drilled through needles into the skin, usually without anesthesia.[3] There are different forms of body piercing that are implicated in different parts of the body, particularly in the oral cavity.[4] Oral and per oral piercing has been practiced in ancient populations as well and associated with religious, tribal, cultural or sexual symbolism.[5] Oral piercing sites for jewellery placement include the lips, cheeks, frenum, uvula however, the most common site for oral piercing is the tongue. Piercings that are most frequently applied in the oral and per oral area are bead ring, labret and barbell.[3] In the year 1909 Van Gennep described about bodily transformation like scarification, tattooing and painting the whole or part of body as rites of passage. Scarification is a permanent form of body modification in which particular patterns is made into one's skin by burning skin and also cutting one's skin so that scars will be left on the body in the

shape of a symbol or intentional pattern.[7] than other form in which people modify their body in ancient times are tribal tattoos to symbolize that a person belonged to a certain tribe or social status, to express religious or spiritual belief, for their self-protection as camouflage in the woods and sometimes for medicinal purpose also tribal people make tattoos on their whole body (a treatment similar to acupuncture leaving behind a pigment).[8,9]

Lip Plating

Another form of body modification seen in the Mursi, Chai and Tirma groups in African women to wear large pottery or wooden discs or 'plates' in their lower lips. The Turkana ethnic groups from northern Kenya, as well as the black population of Jebel Moya usually remove their two lower incisors and wear lip plugs of nail shaped or disk-shaped.[11] [Figure 1]



Figure 1: lip plating



Figure 2: lip ring

In some region of Africa cutting and stretching the lower lip is been performed as a deliberate disfigurement, designed to make women and girls less attractive to slave traders. The size of lip rings indicates “worth”. These people believe that larger the stretching of a young woman’s lower lip, the more numbers of cows her father would be able to ask for as dowry upon marriage.[11] [Figure 2]

Dental Modification

A deliberate modification of the shape of the human teeth - called tooth modification.[1,3,8] It can be either unintentional dental modification such as when the teeth have been used as a tool, such as vice-like grips to hold pins, pipes, sinew, etc.[1] This type of habitual activity can leave a characteristic mark on the teeth and other types is intentional teeth modification. Intentional modification of teeth is performed in a belief that when a person smiles or even angry and grins, or interacting with one another their mouth and teeth are visible therefore, the teeth became the main target of modification. [1, 2]

Forms of Intentional Dental Modification

Intentional dental modification is seen as a widespread practice in ancient times as well as in modern populations and commonly reported in various regions of the world, including the Pacific, Asiatic, African, South and Central American area.Ortner and Putschar (1985) state that there are two kinds of intentional dental modifications that involve fracture of the dentition, one is ablation of specific teeth, and the other is mutilation of the dentition, usually involving the labial, or lip, surface of the anterior teeth (i.e., incisors and canines). Mutilation occurs when the teeth are ablated, filed, or drilled and inlayed with carved materials.

Teeth ablation

The practice of ritual avulsion of teeth still abounds in South Africa regions in the modern city of Cape Town by removing their lower incisors often as a rite of passage for teenagers and this practice is almost exclusively seen in low socio-economic status families. Absence of anterior teeth in south African “Coloureds” people is believed to be done for facilitation of oral sex. This gap is known as the “Passion Gap” or the “Cape Flats Smile.” [Figure 3]. In Sudan particularly Dinka, Nuer and Maban tribes and the people in rural villages of South-Saharan regions, extract their lower incisors and sometimes the canines, shortly after their eruption, as a rite of passage, to reinforce beauty, to point out their tribal identity, and to permit the emission of specific linguistic sounds.[13]



Figure 3: “Passion Gap” or the “Cape Flats Smile

The ritual extraction of the two upper central incisors in the New Hebrides, made in puberty and only in females as they believe it to be a sign of entrance into adulthood and a sacrifice representing the value of death in suffering, the price of the social renaissance for a girl becoming a woman.[10]

Among other populations of Cameroon, Mali and Mozambique and in Borneo, the ritual of removing the four upper incisors, is performed because of magical-religious beliefs, to allow feeding just in case of tetanus where the mouth opening get reduced and jaws get locked or to permit the performance of a stronger blast at the sumpitan or blow-pipe, removal of four incisors also increases the thrusting power of poisoned arrows. [12]

Infant oral mutilations

In region of Kenya infant oral mutilations (IOMs) practices are carried out on young children with the extraction of deciduous tooth buds, often canines, as an accepted remedy for their illness.[15]

Tooth Filing

Tooth filing is the reshaping of the teeth or chipping of specific teeth to create a particular pattern. These include the pointing of the ends of the teeth, filing down the canines to make them flat, or even cutting out portions of the tooth so that the tooth appears to be missing a chunk that is in a particular shape.[16]

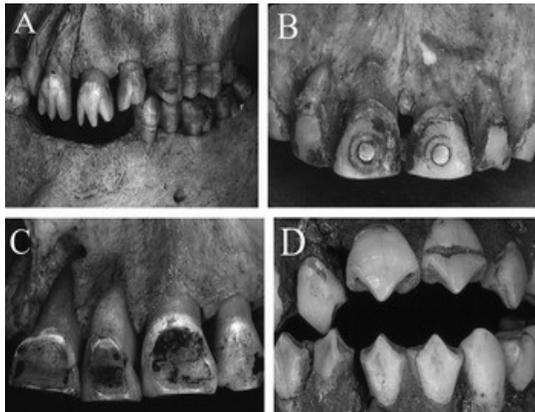


Figure 4: teeth filing in different patterns

In Cameroon, Congo, Guinea, Zaire and Uganda the teeth are sharpened to resemble those of a crocodile this practice is named *AKUHA*. In Tanzania (among Makonde tribes) the ritual of chipping off part of the upper and lower incisors enamel, so that the teeth appear peg-shaped. This practice is performed for decorative purposes, esthetic reasons, signs of strength, the passage from teenage to adulthood as among Malay races, where the filing of teeth takes place with a ceremony at puberty.¹⁵Dental modifications in the Caribbean are considered to be an African practice introduced to the Caribbean archipelago by the influx of enslaved Africans during colonial times. Among the karrayyu-oromo, both adult males and females undergo midline diastema formation for aesthetic purposes, as well as for marking clan identity and rites of passage.[16] [Figure5]



Figure 5: Modified central incisors of the individual

Crooked Teeth

In modern Japan, a look called “yaeba”, which is identified by long and/or crooked canines, is so desirable that woman pay to have caps added to their teeth to get the look. It is considered youthful looking, as it typically occurs naturally in small, crowded mouths, and therefore appears to be cute. [8]

Jewel Inlays

Cultures like the ancient Mayans used to encrust their teeth with precious gems. Before modern technology, this was likely done by using a very hard stone to grind a hole into each tooth where the gemstone could be sealed into the tooth, possibly with cement or paste. Inlays today are usually adhered to the tooth with braces glue.[16] [Figure 6]



Figure 6: image showing jewel inlays

Dental “Grills”

Grills also known as “fronts,” is a dental device that is made of gold, platinum, or other metal that is often encrusted with jewels that can be inserted on top of the maxillary anterior dentition. Higher socioeconomic status people wear different forms of grills as a status symbols within the Hip-Hop industry, and these pieces are crafted by jewelers and placed by dentists while lower socioeconomic status people have begun wearing grills of lower quality.[17]

Teeth coloring

Intentional tooth blackening was very popular in 19th century in Japan as whitening strips are today. The odd tradition of dying one’s teeth completely black, referred to as OHAGURO.Back in the day of the Samurai members of the warrior caste of feudal Japan commonly dyedtheir teeth as a symbol of loyalty to their masters.[17][Figure 7]



Figure7: teeth blackening in japan

In parts of Southeast Asia process of teeth staining is commonly seen in members of both sexes. Without stained teeth, members of these cultures were considered unfit to be wed. In Indo-China regions the blackening of the teeth is also done because they consider mouth as evil's door. Black staining of teeth exists in Borneo as well where the teeth are colored in black with a mixture of burnt coconut shells and oil, sometimes the tooth surface is abraded or etched with ginger or mango fruits. Some individuals in malay blacken their teeth in order to differentiate themselves from dogs this practice lies in the conviction that white teeth are characteristic of animals and european people. The blackening of the teeth is also performed among the Jivaro Indian people of Northern Peru and Ecuadorians, with the belief that this practice could prevent the occurrence of dental caries. Tooth lacquering and dying is also performed in several other regions of the world like Vietnam, Laos, Thailand, Indonesia and Philippines where teeth blackening is related to sexual maturation and full membership in society[18][Figure 7]

Teeth& Soft tissue tattooing

Tattooing has been performed since ancient times. A type of tooth staining is performed today with teeth tattoos Called a dental stain tattoo, the artwork is not directly applied to teeth, but to a cap or a crown, and can be left in place for years just like traditional porcelain crowns. Traditional gingival tattooing, practiced in Ethiopia and occasionally in other African and Middle Eastern nations, is performed for esthetic appeal or superstition, and it occasionally may be used as a homeopathic remedy for dental diseases.^{1,2} [Figure 8]



Figure 8: image showing teeth tattoo & gingival tattooing

In the literature numbers of causes have been mentioned for the dental modifications. Intentionally altering the teeth affords specific privileges to those possessing modified dentitions. The various causes include:[1,2,5]

- Beautification and cosmetic adornment, cadaveric, or post-mortem adornment
- Diplomatic and political markings
- Markers and tribal identification, expressions of mourning, initiation and rites of passage, medical purposes, religious practice, sexual attraction
- Markings of social status
- In studies on living individuals in Africa, dental modifications occurring in young adults have been associated with the transition ceremonies from childhood to puberty
- Yucatec women decorated their bodies and teeth to appear brave and fearless
- Interestingly, members of one cultural group would inspect the patterns of dental modification in a visitor to establish, or re-affirm, ethnic or tribal identity.

Dental modification and associated mishaps

In extreme, alveolar bone resorption occurs due to infection resulting directly from dental modification. This exposes tooth roots, which causes these teeth to inevitably fall out. In the case of alveolar bone resorption, researchers can determine that the resorption is due to the dental inlays rather than periodontal disease because they are able to analyze

the age of the bone upon the persons death. In these cases, the individual was quite young and should not have been experiencing periodontal disease, so one can conclude that the resorption was related to a botched dental modification procedure. This is unfortunate because when a young skeleton is discovered with alveolar bone loss, this means the dental procedure most likely shortened his or her life due to a spreading infection that was extremely painful and intolerable. Even if a dental operation was successful, though, one could not masticate properly for several days after completion of the procedure, and, in some cases, the pain never dissipated and the individual could never chew food as easily and in the same manner that was possible prior to the dental operation.[18] Since death is a possible outcome of intentional dental modification, it should be considered a high-risk procedure. Due to the risky nature of intentional dental modification, it seems as though this should be considered a maladaptive trait. In fact, Davies found that "there were more caries in filed teeth than in unfiled teeth" when analyzing specimens from Borneo. Even though dental modification involves serious risks, it still occurs today, to an extent, all over the world.[19]

Conclusion

The knowledge of dental alterations can be a powerful tool for the identification procedures of living or dead persons or even in human remains especially providing relevant information about the ethnic origins and the cultural background of a subject. However, in modern dentistry jewel incrustation is a common practice for the fashion purposes. Oral piercings and tattoos of teeth and soft tissues of oral mucosa are also coming up drastically. The days are not very far for the dentists to learn the tattooing of teeth.

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To cite this article: Dental Modification: Self Fabricated Mania, Dr. Shubhra Saxena, Dr. Vishal Mehrotra, Dr. Kriti Garg, Dr. Rahul Srivastava, Rama Univ. J. Dent. Sci. 2018 September; 5(2): 1-5.