The practices and effects of tooth mutilation in a Nigerian rural population

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Abstract

Objective: The study was carried out to investigate the practices and effect of tooth mutilation in two rural communities in Nigeria.
Method: A structured questionnaire was administered on subjects in two rural communities in the Niger-Delta area of Nigeria. The questionnaire was used to collect demographic information of the subject and the reasons for, methods of tooth mutilation and its effects on the oral health of participants were recorded. Data obtained were coded and computerized analysis was performed using SPSS version 17.0.
Result: A total of 37 (36.3%) participants out of 102 patients who visited the dental clinic during the free dental care mission completed the questionnaire. There were 9 (24.3%) male and 28 (75.3%) female in two communities of Okorenkoko and Agudama. Most of the participants received information concerning this act through family members or friends with various reasons given for engaging in this act. Also, various deleterious effects of tooth mutilation was found with 25 (67.6%) experiencing pain during the process, 12 (32.4%) noticed progressive tooth discolouration while 8 (21.6%) experienced signs of infection with either pus discharge or upper lip swelling or both.
Conclusion: Rural dwellers, irrespective of level of education are still indulging in mutilatory practices to the dental tissues and on the long run, most mutilated teeth, would most likely become symptomatic and may result into extraction worse sequelae.

Keywords: Tooth mutilation, rural communities, Nigeria

Introduction

The face, mouth and teeth hold seemingly intrinsic fascination for mankind and have been and continue to be the object of a wide range of decorative and mutilatory practices. Some of these practices, unfortunately, have been the cause of considerable suffering for many[1]. Tooth mutilation is not new, it is an old practice which probably began in the pre-classic era (100 BC - 300 AD)[2]. According to Morris, early evidence was found in the skeleton of the Iron Age population 1500 years ago, but the incidence decreased in archaeological site of more recent origin[3]. In spite of the recent archaeological findings, the practice of tooth mutilation is still rampant in some populations.
An ideal dental beauty consists of a full dentition of whitish yellowish white, morphologically normal, vertically positioned teeth in perfect bilateral symmetry[2]. However, this is not the case in some societies where for some superstitious beliefs or traditional purposes or fashion, the tooth shape is altered. Several reasons have been given for such acts of tooth mutilation. These include tribal identification, initiation rite, sign of manhood or bravery, differentiation of sexes, sign of marriageable age in females, sign of ceremonial rebirth, to ensure a life after death, `aesthetics and fashion, therapeutic purposes, sign of mourning, sign of subjugation, form of punishment, cultural mimicry, to enable an individual to spit properly, and local superstitions associated with natural phenomena such as rain, thunderstorm etc[1]. Whatever, the reason behind it, tooth mutilation is very harmful to dental health.
Tooth mutilation is a harmful practice whereby the enamel alone or enamel and dentine of a tooth is either deliberately chipped off, re-contoured, grinded, filed, stained, patterned, or banded[1, 2]. It could also involve setting of jewel encrustation on anterior teeth[2]. Depending on the type adopted, several names have been used to describe various forms of tooth mutilation. An example is "Cape flat smiles" also referred to as "passion gap" which describes the intentional removal of anterior teeth among youthful gang in Western Cape Town of South Africa. Another one is "Tooth trephination" which involves drilling a hole at the middle of a tooth and placing a brass stud in it. In some other cases teeth are ground down to the gum line as a form of fashion Although, self inflicted dental injury in a depressed patient has been reported[4], deliberate tooth mutilation is practiced by individuals in normal mental health conditions.
The long-term prognosis of any mutilated tooth depends on how severely injured the tooth was. However small the injury may seem, the ultimate effect on aesthetics and oral health could be devastating. Moreover, lack of proper public knowledge of the risks and patho-mechanism of dental diseases as well as suboptimal primary dental health programs would always encourage harmful acts to the dental tissues since individuals would always depend on traditional and cultural knowledge. This study was

conducted to assess the practices and effects of tooth mutilation in two riverine rural communities within the Niger Delta region of Nigeria. The chosen communities for the study lack Primary Health Centre, dental facilities and dental personnel.

Materials and Method

This is an observational study carried out during a free NGO-sponsored medical mission visits to two rural communities in the Niger-Delta region of Nigeria. The communities involved were Okorenkoko in Delta state and Agudama in Bayelsa State. The study was based on a questionnaire designed to collect demographic data and information in relation to tooth mutilation practices. The demographic data collected were age, gender, tribe, level of education and occupation. The occupational categories are i. Artisans ii. Farmer/ farm produce traders iii. Paid employees, and iv. Unemployed. The questionnaire also sought to establish the reasons for, methods of, and effects of tooth mutilation on the oral health of participants. Data obtained were coded and computerized analysis was performed using SPSS version 17.0, Chicago, Illinois, USA.

Result

A total of 102 patients participated in the free dental care mission out of which 37 participants who indulged in the practice of tooth mutilation completed the study questionnaire. This include 29 (78.4%) from Okorenkoko and 8 (21.6%) from Agudama. Their age range was between 24 and 69 years (mean 37.1± 11.6 years). There were 9 (24.3%) males and 28 (75.7%) females, 29 (78.4%) were married and 8 (21.6%) were single. Three (8.2%) of the respondents had tertiary education, 10 (27.0%) had secondary education, 6 (16.2%) had primary education while 18 (48.6%) had no formal education. Nine (24.3%) participants were artisans, 20 (54.1%) were farmers/farm produce traders, 7 (18.9%) were in paid employment, and 1 (2.7%) was unemployed. The participants have had their teeth mutilated for a range of time between 5 and 45 years. The tribal affiliations of the respondents were Ijaw 35 (94.6%) and Urhobo 2 (5.4%) **(Table 1).**

Most of the participants received information about the act from either family members or friends and the reasons for doing it were peer pressure, to improve personal beauty and aesthetics, to comply with the fashion in-vogue, to reduce tooth size, and cultural norm **(Table 2)**. The teeth mostly mutilated were the anterior maxillary teeth and the method of tooth mutilation in this study was unanimously by tooth filing using sharp knife or matchet file.

Analysis showed that there have been various deleterious effects of tooth mutilation on the dental health of the respondents **(Table 3).** Twenty five (67.6%) experienced pain during the process, 21 (56.8%) experienced shocking sensation during the process, 10 (28.6%) have been experiencing occasional pain after the process, 12 (32.4%) have noticed progressive tooth discolouration, 8 (21.6%)

Table 1: Socio-demographic characteristics of the study population

Age	Minimum	24 years
	Maximum	69 years
	Mean	37.1±11.6 years
Gender	Male	9(24.3%)
	Female	28(75.7%)
Marital status	Single	9
	Married	28
Levels of Education	No formal education	18(48.6%)
	Primary	6(16.2%)
	Secondary	10(27.0%)
	Tertiary	3(8.2%)
Occupation	Artisan	9(24.3%)
	Farmer/Trader	20(54.1%)
	Paid Employment	7(18.9%)
	Unemployed	1(2.7%)
Tribe	Ijaw	35(94.6%)
	Urhobo	2(5.4%)

Table 2 : Reasons given for engaging in tooth mutilation

Reasons	**Number of Participants**
Peer pressure	15(42.9%)
Personal beauty and aesthetics,	9(25.7%)
Fashion in-vague,	7(20.0%)
Reduction of tooth size	3(8.5%)
Cultural norm	1(2.8%)

Table 3: Observed effects of mutilation on the teeth/oral soft tissues.

Observed effects	**No. of Participants who experienced the effect**
Pain during tooth filling	25(67.6%)
Sensitivity during tooth filling	21(56.8%)
Pain after tooth mutilation	10(28.6%)
Discolouration	12(32.4%)
Infection	8(21.6
Tooth mobility	3(8.1%)

NB: Some participants experienced more than one adverse effect

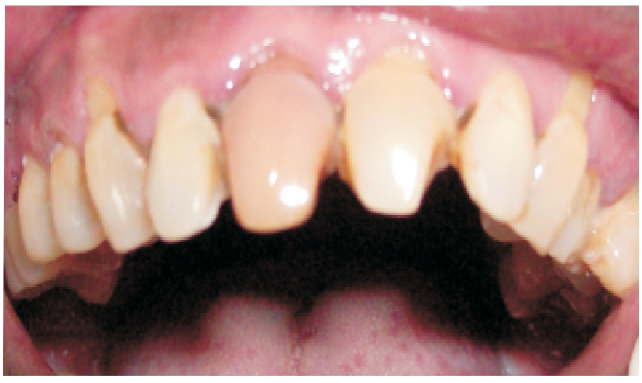

Fig. 1: Maxillary central incisors reshapened in a middle age lady. Note the extreme discolouration of right incisor

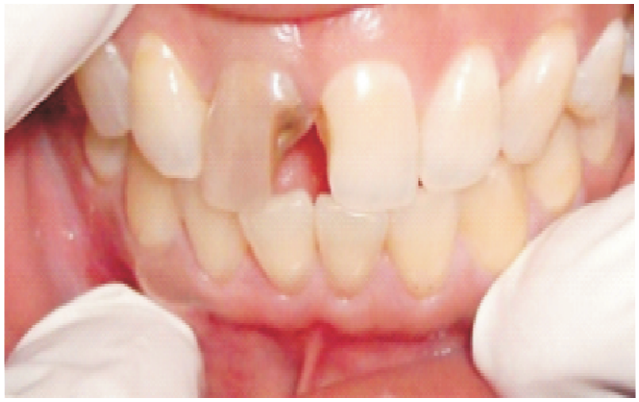

Fig. 2: Extent of mutilation of the upper right central incisor to create an artificial midline diastema

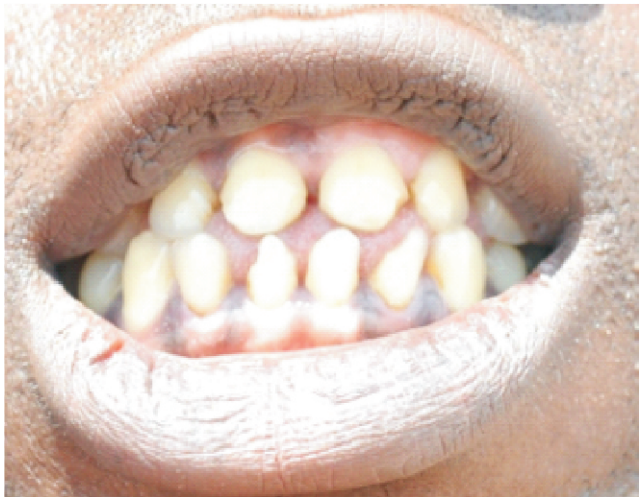

Fig. 3 : Sculpting of upper and lower central incisors to create different shapes

have experienced signs of infection with either pus discharge or upper lip swelling or both, and 3 (8.1%) have noticed mobility of the teeth involved.

Discussion

Deliberate alteration of tooth structure and/ or shape for non therapeutic purposes has been known for centuries. It probably started in the pre-classic era (100 BC - 300 AD) and was done for various reasons. In some societies it was practiced as a cultural norm while in other places it was a matter of fashion. This act of tooth mutilation is not particularly common in Nigerian urban societies. Although patients demand for tooth filling to create a midline diastema was fashionable sometime age, due to increasing public dental education, such request seem to have diminished significantly in modern dental practices across the country. In the rural communities however, the level of dental education is still very poor and deleterious practices inimical to the oral health are still rampant. This study was therefore targeted at rural communities without a primary health care centre, a dental clinic or any dental health care personnel. It was intended to assess tooth mutilation practices and its consequences on the oral health of indigenes.

While majority of the indigenes were aware of tooth mutilation practices only 36.3% of participants in a free medical/dental health care mission visits indulged in the practice. Most of them claimed to have learnt of the act from their family members or friends. Their age cut across the youths to the elderly, the average age being 37 years. This group included both the well educated, the less educated and individuals without any formal education. Majority of the participants claimed to have adopted the practice due to peer influence and to conform to the fashion -in-vogue and to improve personal facial beauty and aesthetics. Contrary to what obtains in most parts of the world, only one participant in this study alluded to cultural reasons for indulging in tooth modification.

Conversely, culture appears to be the main reason for tooth modification or mutilation in most parts of the world. Friedling et al reported four reasons for dental modification in the northern suburb of Cape Town, South Africa[5]. These include gangsterism, peer pressure, fashion and post dental trauma therapy. Tooth modification or mutilation has also been practiced as an initiation rite among Australian aborigines[6]. More so, it may be used as a means of identification to certain tribe or clan. Friedling and Morris believe it may be a phenomenon of ethnicity and cultural belief of a community[7].

There are different forms of tooth modification. Friedling et al[5] described six styles of tooth modifications in the northern suburb of Cape Town, South Africa, of which the removal of upper four incisors was the commonest. Fabian et al described a form of mutilation in which both anterior teeth and lip are mutilated among Makonde people from southeast Tanzania[8]. Caninisation of anterior teeth or filing of anterior teeth into various shapes for cosmetic purposes has also been documented in many cultures. Sanfilippo[9] described an ornamental dental practice performed in pre-Hispanic America to impart a type of dental aesthetics different from the classical concept of beauty. In this study the style of tooth mutilation practiced involved the filling and polishing of anterior teeth into various shapes, fenestration, crusting or cross hatching, fixing inlays and pigmentation of teeth.

The trimming of the dental tissue for therapeutic reasons is guided by certain principles. Enamel thickness is a major consideration in the process to avoid dentinal exposure and water cooling is essential to reduce thermal assault to the pulp. In most cultural settings, tooth modification is performed in a crude manner without local anaesthesia and without recourse to essential principles **(Figures 1-3).** This gave rise to the more appropriate concept of tooth mutilation. The consequence is a symptomatic tooth which might progress into several complications.

In this study, many of the participants with mutilated teeth have experienced one symptom or the other.

While majority experienced pain or sensitivity during the process of tooth filing, some others had occasional pain due to pulpits, progressive tooth discoloration due to pulpal necrosis and suppurative infections. All these are

sequelae of pupal injury incurred during the process of filing. Radiological investigation was not carried out during this survey, so authors were unable to assess asymptomatic apical pathologies like granuloma and periapical cyst. However there was evidence of chronic periapical bone destruction with some mobile teeth observed. Upper tooth infection with lip swelling presents a risk for cavernous sinus thrombosis which could be fatal. Since there was no previous report of the long term clinical effects of mutilated teeth, there was no data to compare with the findings in this study. However, Fabian et al [8] in his study noted that tooth loss due to mutilation was significant.

Conclusion

The subject of tooth mutilation is rare in the Nigerian dental literature suggesting a huge neglect of an important public health issue. The rural communities are poorly served with respect to dental health care services. They are also remote from the influence of the paper and electronic media in promoting proper oral health behaviours. The Niger-Delta area has only one accredited dental school from where students on community dental health education (CODEH) visits could provide dental health information to rural communities. The consequence of this is that rural dwellers, irrespective of level of education are still indulging in mutilatory practices to the dental tissues with attendant risk to their general health. This study has shown that in the long run, most mutilated teeth, whatever the reason, would most likely become symptomatic and progress into worse sequelae.

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