Eruption of primary incisors: prevalence of sequence reversal and attitude of mothers in a Yoruba Community

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Abstract

Objective: The mandibular primary central incisors are usually the first set of teeth to erupt in a child. However, eruption of the maxillary primary central incisors may precede that of the mandibular primary central incisors, which is viewed as a taboo among some tribes in Nigeria. Various means of dealing with the 'taboo' have been suggested in different communities. The main aim of this study was to determine the prevalence of maxillary primary incisors erupting before the mandibular among some children and the acceptance of the situation by their mothers.
Method: A cross sectional study of 290 nursing mothers and their children in the immunisation clinics of the University College Hospital and the Adeoyo Maternity Teaching Hospital both in Ibadan, Nigeria was carried out. Intra-oral examination of the children was done to ascertain that each of them had at least a tooth after which the mothers were required to fill an interviewer-administered questionnaire.
Result: Nine (3.1%) out of the 290 children assessed erupted the maxillary incisors ahead of the mandibular counterparts and their mothers allowed the teeth to erupt normally. One hundred and fifty-seven (54.1%) of the mothers agreed that the tooth should be allowed to grow normally as part of the series of the primary dentition, while 26.9% will rather have it extracted.
Conclusion: Though a greater percentage of the mothers would retain the affected tooth, concerted effort still needs to be made to further enlighten nursing mothers on the issue of reversed eruption sequence.

Key words: Eruption, sequence, maxillary incisors, attitude, prevalence

Introduction

The most common sequence of eruption in the developing primary dentition is that the mandibular central incisors erupt first, followed by the maxillary counterparts as part of the series of the primary teeth[1,2,3]. However, there are instances where the maxillary incisors erupt earlier than their mandibular counterparts and this is considered a taboo among some tribes in Nigeria. The belief is that any child that erupts the maxillary primary incisors first has mysterious power and anything such a child pronounces, especially negative pronouncement, will definitely come to pass[3]. This has led to the avoidance of such children and the affected households, which eventually lead to the desire of the parents of the child to have the tooth extracted by all means. Loss of the tooth at this tender age is not without attending consequences which may include the drifting of adjacent teeth to close up the space with eventual development of malocclusion in the permanent dentition[4]. Some other consequences of early loss of tooth in these children may include the possibility of the speech pattern being affected in such a child[4]. Also, there may be associated emotional trauma to the mother and or the child as the lost tooth/teeth will not be replaced until when the child is around 7 years of age, at which age the child most likely would have started schooling[3,5-8]. Another possible consequence of tooth loss is the finding in animal study, which reported that with early tooth loss, there is an increased plasma corticosterone level and neuronal death with resultant impaired learning and memory in mice[9]. These consequences are grievous enough to necessitate a study into the trends of events in the belief of mothers concerning reversed sequence of eruption. Reversal in the normal sequence of eruption had been interpreted by majority (70.4%) of the respondents in a study as meaning that the child is evil while only a few of them (23.8%) agreed that it is a normal human variation[3]. Various methods of addressing the situation were put forward by the participants in the study, these include extraction of the tooth and or offering sacrifices allowing the tooth to erupt normally and getting rid of the child[3]. Failure to extract the tooth by a dentist may force the desperate mother to take the child to quacks who, most likely, will not hesitate to have the tooth extracted possibly for financial gain. This may predispose the child to various complications ranging from infections to mutilation of either the soft or hard tissue or both. Any of these complications may eventually affect the permanent tooth that will replace the affected tooth. However, anecdotal report claimed that attempts at delaying eruption of the

maxillary incisors include efforts at massaging the gum/tooth in order to 'push' it back into the bone in order to allow for time for the mandibular incisors to erupt.
The effect of social acceptance of eruption variance is said to be as important as to affect the child later in the future in such areas as pursuit of a job, place to live, friends and future family life [3, 10]. The present study therefore sought to establish the prevalence of reversed eruption sequence among children brought for immunisation at the University College Hospital and Adeoyo Maternity Teaching hospital, both in Ibadan, Oyo State, Nigeria. This was done with the view to finding out the acceptability of the condition among the women generally and those whose children had the experience specifically. The result of this study will add to knowledge on how nursing mothers perceived reversed eruption sequence and point out areas where greater effort needs to be directed by the dental team and the public in general.

Materials and method

A cross sectional survey of 290 nursing mothers and their children was done at the University College Hospital and Adeoyo Maternity Teaching Hospital both in Ibadan, Oyo State, Nigeria. Intraoral examination of each child was done to ascertain the eruption of at least a tooth. A 34 item interviewer-administered closed ended questionnaire that sought to find out the age of the child, the age at which the child erupted the first tooth, the first tooth erupted, and the gender of the child was administered by the investigator on the women. Also, the perception of the women on the earlier eruption of the maxillary central incisors ahead of the mandibular counterpart was sought. Respondents were classified into socio-economic status based on the classification by Famuyiwa et al, 1998[11].
Ethical approval (UI/EC/11/0002) for the study was obtained from the local ethical committee before the commencement of the study. The data was entered into a computer and analysed using Statistical Package for Social Sciences (SPSS) version 14. Chi square test was used to compare discrete variables. Statistical significance was inferred at $p < 0.05$.

Result

A total of 290 nursing mothers and their children were examined during the study. The age range of the nursing mothers was 20 to 45 years with a mean of 29.39 (±4.90) years. There was no statistically significant relationship between the age of the mothers and the first tooth erupted by their children. There were 174 (60%) males and 116 (40%) females, aged 4 to 27 months with a mean of 9.86 (±2.45) months. The age range of the male children in the study was from 5 to 27 months with a mean of 10.08 (± 2.72) months and that of their female counterparts was 4 to 15 months, with a mean of 9.45 (± 1.92) months. The mandibular primary central incisors were the first set of teeth to erupt in 281 (96.9%) children, while the maxillary primary central incisors erupted first in 9 (3.1%) children. Those 9 children with reversal of eruption sequence were made up of 5 males (age range 9-19; mean age 12.2 ± 4.09 months) and 4 females (age range 9-14; mean age 11.25 ± 2.22 months) with a ratio of 1.25:1 **(Table 1)**.

Table 1. Comparative analysis of the age groups of the children at the time of eruption of the first tooth with the first tooth to erupt.

Age Group (months)	First tooth to erupt		Total
	Maxillary Incisors(%)	Mandibular Incisors(%)	
0-5	0(0)	53(18.3)	53(18.3)
5.5-10	9(3.1)	225(77.6)	234(80.7)
>10	0(0)	3(1.0)	3.(1.0)
Total	**9(3.1)**	**281(969)**	**290(100)**

Thus the prevalence of reversed sequence of eruption in this study was 3.1%. There was no statistically significant difference when the gender of the children was compared with the tooth that they first erupted. Concerning the action to be taken in case of the maxillary central incisors preceding the mandibular counterparts, all the nine mothers whose children had such an experience allowed the teeth to erupt normally. In all, 157 (54.1%) agreed that the tooth should be allowed to erupt as a normal component of the primary teeth, while others gave different suggestions of what they will do to the tooth/teeth in case it happens in their children. A higher percentage of the older women advocated for retaining the tooth in case of reversed eruption sequence, while a higher percentage of the younger age groups will prefer extraction of the tooth and seeking people's opinion including elderly members of their families and medical doctors in some cases.
There was however no statistically significant difference when the age group of the mothers was compared with

Table 2. Comparative analysis of the age groups of the mothers with their suggestions on how to handle the case of reversed sequence of eruption

Suggested Action	Age group of mothers (Years)				Total
	20 - 25(%)	26 - 30(%)	31-35(%)	>36	
Allow the tooth to grow normally	30 (40.6)	59(52.7)	48(64.0)	20(69.0)	157(54.1)
Extraction	26(35.1)	31(27.7)	18(24.0)	3(10.3)	78(26.9)
Hide the child from the public	4(5.4)	5(4.4)	1(1.3)	0	10(3.5)
Seek opinion	14(18.9)	17(15.2)	8(10.7)	6(20.7)	45(15.5)
Total	**74(100)**	**112(100)**	**75(100)**	**29(100)**	**290(100)**

$X^2 = 0.078$, Likelihood ratio = 17.539

Table 3. Comparative analysis of the action to be taken by the mothers in case of reversed eruption sequence in their children by socio-economic status

	Socio-economic status	Suggested action to be taken (%)				
		Hide the child from public	Extract the tooth	Allow to grow	Seek advise	Total
	Professionals	0	0	7(87.5)	1(12.5)	8(100)
	Civil servants	1(1.6)	6(9.5)	52(82.5)	4(6.4)	63(100)
	Skilled labour	0	7(20.6)	19(55.9)	8(23.5)	34(100)
	Unskilled labour	8(4.6)	64(36.6)	73(41.7)	30(17.1)	175
	Students	1(10.0)	1(10.0)	6(60.0)	2(20.0)	10(100)
Total		**10(100)**	**78(100)**	**157(100)**	**54(100)**	**290(100)**

X^2 = 42.23, likelihood ratio = 47.27, p < .000

the action they will take in case of reversed eruption sequence in their children **(Table 2)**. There was a statistically significant difference when the socio-economic status of the mothers was compared with the action they will take in case of reversed eruption sequence in their children (p< .000). Most of the respondents in the higher socio-economic classes will allow the affected tooth to erupt normally, while a large percentage (36.6%) of those that constituted the unskilled labour will extract the tooth **(Table 3)**.

Discussion

Two hundred and eighty-one (96.9%) of the children whose mothers were seen during the study erupted the mandibular incisors ahead of the maxillary incisors. This is in agreement with the findings of most of the other studies that reported that mandibular primary incisors precede their maxillary counterparts in eruption[1- 3]. However, the "normal" sequence of eruption does not mean that a reversal is abnormal, as this may just be a normal variation whose cause is unknown, but portends no evil. The prevalence of 3.1% of reversed sequence of eruption in this study shows that those affected are in the minority, which may predispose the mothers of affected children to easily believe the myth that their children are different from others. The belief among the Yoruba race that reversal in the sequence of eruption is associated with some evil must have brought untold hardship on the few mothers whose children experienced such in time past. But this cultural belief seems to be giving way as 54.1 % of the women in this study agreed that they will allow the tooth to grow normally. This is in contrast with the study by Oyejide and Aderinokun [3] who reported that 55.2% of the respondents in their study will have the tooth extracted and then offered some sacrifices in order to avert any evil. The improved acceptance of the reversed eruption sequence could have been due to better enlightenment of the mothers and the general public by the dental health workers over the years. Globalisation, which is making it easier for people of different cultural background to interact more easily than before, could also have contributed to the change in the societal view of the situation. The study by Oyejide and Aderinokun[3] was done in a community in the city where the present study was carried out. Therefore, their study might have positively impacted on the public with the changing trend resulting in what the present study is reporting. The percentage of the respondents with the tendency to have the tooth extracted in case of reversed eruption sequence tend to reduce with increasing age, as a greater percentage of the younger women proffer extraction as the best solution to the condition. The reversal of the trend was seen in the percentage of those that will allow the tooth to grow normally as part of the primary teeth, which was the choice of a greater percentage of the older women. This could have been due to the fact that the older women are likely to be more experienced in child rearing than their younger counterparts. However, the author will suggest a study into the possible effect of the number of previous children on the response of a woman to reversed eruption sequence. This becomes more necessary as some of the older women will also prefer extracting the affected tooth/teeth. Though the percentage of those that will prefer extraction in this study (26.9%) is lower than that reported by Oyejide and Aderinokun[3], who reported that 55.2% will prefer extraction, more public enlightenments need be done to further reduced the percentage. The fact that all those mothers in this study whose children experienced reversed sequence of eruption allowed the teeth to be retained suggest that there must have been a great improvement compared to what the case used to be, as the situation sometimes is beyond the mothers, who may not be able to have their way even if they wish to retain the tooth. However, there is dearth of data to compare this finding with. However, anecdotal evidences exist to offer knowledge on whether or not there had been an improvement.

The effect of socio-economic status on the perception of mothers in this study was such that none of those that were regarded as professionals advocated for the extraction of the affected tooth, while a high percentage of those that belonged to unskilled labour group advocated extraction of the tooth. The professionals are more educated and are likely to be better enlightened than the unskilled labour group which might have been responsible for the tendency to retain the tooth. This was suggested by Aderinokun and Oyejide [3]. Therefore, it may be helpful if more attention is placed on enlightening the people in the lower socio-economic classes, which can be achieved through antenatal clinics and other health facilities in the affected areas.

Conclusion

This study shows that the trend is moving towards a better acceptance of cases of reversed sequence of eruption by mothers as compared with previous study, but more attention still need to be placed on the issue as to improve on the gain so far made.

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