

AGE ESTIMATION FROM ERUPTION OF TEMPORARY TEETH

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ABSTRACT

Teeth are very important indicators in medico-legal cases as they help in identification and age estimation in the living as well as in the dead because they resist putrefaction and are constant in their appearance. 126 children up to the age of 33 months were studied for the time of eruption of their teeth. It was studied in correlation with age, sex, socio-economic status, nutritional status and halves. From the findings it was concluded that there was a delayed pattern of eruption and teeth appeared earlier in the females and in the lower jaw.

KEY WORDS: Eruption, temporary teeth, mean age.

INTRODUCTION

Teeth are well known to help in identification as well as in estimation of age from eruption, counting cross-striations as by Boyd's method as these are very durable, resist heat, chemicals, putrefaction etc. From eruption of temporary teeth, one can estimate the age of a child from 6 months to 33 months. Eruption of teeth is affected by climate, race, diet and geographical factors. India is a very big country, with different climates. Hence it is not correct to apply same data to whole of the country. Moreover no recent study on eruption of teeth has been performed in this region. Because of this present work of age estimation from eruption of temporary teeth was undertaken.

MATERIAL AND METHODS

In this study, a total of 126 subjects were examined for eruption of teeth. The cases were taken from out patient doors of Rajindra hospital Patiala and Dental Medical College Patiala. Their teeth were examined for eruption and charting of teeth was done on Palmer's Notation chart. This system uses numbers e to a starting from periphery towards center for each half of jaw. Only, healthy children who do not show any diseased tooth or chronic illness in the form of endocrinal disorder or nutritional disorder or musculo-skeletal disorder, with good and moderate nutrition after doing their general physical examination along with height and weight were considered. The visual examination was done in good light using probe, spatula and

mirror. For socio-economic status, Kupuswamy chart that has classified community into five categories of upper, middle, lower middle, upper-lower and lower classes named as 1, 2, 3, 4 and 5 respectively. The statistical tables were prepared for eruption and age, sex and age, nutritional status and socio-economic status for each individual tooth and from this, their mean age range of eruption, effect of nutrition and socio-economic status on eruption of teeth was calculated.

The statistical tables, which correlate between eruption and age for each tooth, were prepared and their mean age and standard deviation calculated by using the following equation

$$= \frac{\sum m}{n}$$

Where:

\bar{X} - Stands for mean or average

$\sum m$ - Total of all observations

n - Number of observations

When n is < than 5 S.D = $\sqrt{\frac{\sum (x - \bar{x})^2}{n}}$

When n is \geq than 5 S.D = $\sqrt{\frac{\sum (x - \bar{x})^2}{n - 1}}$

Where

S.D – stands for standard deviation

x - Stands for values of observation

\bar{x} - Mean of the sample.

n - No. of observations

OBSERVATIONS & DISCUSSIONS

After doing the statistical analyses it was found that the mean age of eruption of central incisors of upper jaw was 9.48±0.96 months and of lower jaw was 8.28±0.84 months. In case of lateral incisors the mean age of eruption was 10.20±1.08 months for both upper and lower jaws, the first molars of lower jaw erupted at a mean age of 15.56±0.72 months and of upper jaw at 15.84±0.72 months of age. For canines this age was 19.20±1.44 months and 19.32±1.56 months in upper and lower jaws respectively. Second molars of upper and lower jaw erupted at the mean age of 27.72±3.36 months (Table 1). In table 2 comparison of mean age of eruption of teeth according to the sex of the individuals is done.

CONCLUSIONS

Following conclusions were drawn from this study: -

1. Average age and range for eruption of temporary teeth in general is given in Table No.1
2. Average age for eruption of temporary teeth in male and female is given in TableNo.2.
3. No significant difference of means ages in the eruption of temporary teeth for right and left halves of the same jaw was found.
4. No significant difference was observed in the eruption of teeth in upper and lower jaw for lateral incisor, canine, first molar and second molar.
5. As for as eruption of temporary teeth is concerned, socio-economic status has no role to play.
6. There is no significant effect of moderate and good nutrition, on the eruption of temporary teeth.
7. On comparing with the study conducted by Swami et al, there is early eruption of all the temporary teeth except second molar.
8. On comparing with the observations of Vij, Parikh, Modi and Das, it was observed that there is delayed eruption of all the temporary teeth of both the upper & lower jaws except lower lateral incisor.

Table 1 showing mean age and range of eruption of temporary teeth

Type of tooth	Jaw	Side	No. of cases	Range	Mean + S.D.
Central Incisor	UJ	R	6	8.28-11.04	9.48±0.96
		L	6	8.28-11.04	9.48±0.96
	LJ	R	9	6.60-9.36	8.28±0.84
		L	9	6.60-9.36	8.28±0.84
Lateral Incisor	UJ	R	12	8.88-13.08	10.20±1.08
		L	12	8.88-13.08	10.20±1.08
	LJ	R	12	8.88-13.08	10.20±1.08
		L	12	8.88-13.08	10.20±1.08
Canine	UJ	R	21	17.40-21.84	19.20±1.44
		L	21	17.40-21.84	19.20±1.44
	LJ	R	19	17.40-21.84	19.32±1.56
		L	19	17.40-21.84	19.32±1.56
M1	UJ	R	5	14.64-16.56	15.84±0.72
		L	4	14.64-16.56	15.56±0.72
	LJ	R	7	13.08-16.56	15.12±1.32
		L	7	13.08-16.56	15.12±1.32
M2	UJ	R	25	20.88-32.16	27.72±3.36
		L	25	20.88-32.16	27.72±3.36
	LJ	R	27	20.88-32.16	27.72±3.36
		L	27	20.88-32.16	27.72±3.36

Table 2 showing comparison of sex in relation to eruption of teeth

Type of tooth	Jaw	Sex	No. of cases	Range	Mean±S.D.
Central Incisor	UJ	M	4	8.64-11.04	9.84±0.96
		F	2	8.04-9.96	9.0±1.32
	LJ	M	4	6.60-9.36	7.92±1.20
		F	5	7.44-9.12	8.52±0.60
Lateral Incisor	UJ	M	9	8.88-12.00	9.96±0.84
	LJ	F	3	8.88-13.08	11.04±1.68
Canine	UJ	M	13	17.52-21.84	19.32±1.44
	LJ	F	8	17.40-21.60	18.96±1.56
M1	UJ	M	4	14.64-16.44	15.48±1.20
		F	1	15.60-15.60	15.60±0.00
	LJ	M	4	14.64-14.64	15.48±1.20
		F	3	13.08-15.60	14.28±1.68
M2	UJ	M	12	21.36-32.16	27.96±3.24
	LJ	F	13	20.88-32.04	27.60±3.60

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