RESULTS

During the 8 months of the study we interrogated 2273 mothers of infants and children aged 6 - 24 months. Out of them 21 (0.93 %) were coming complaining of delayed primary dentition (primary complaint) in their children. Further, 29 (1.27 %) were coming for other complaints but their infants were suffering from delayed dentition (secondary complaint). Thus the total number of cases of delayed eruption of teeth were 50 cases (2.2 %). Table 1 shows the causes of delayed dentition in relation to the mother's complaint. Table 2 and 3 demonstrate the prevalance of delayed eruption of teeth during the eight months of the study and their relation to the season. During winter, out of 950 infants and children, 26 cases (2.74 %) were observed to have no deciduous teeth.

On the other hand, during summer, out of 1323 infants and children aged 6 to 24 months, delayed teething

was observed among 24 cases (1.81 %). Table 3 further demonstrates that infantile rickets was the first cause in winter and the second cause in summer while protein energy malnutrition was the first cause in summer and the third cause in winter, then comes those without a demonstrable cause which may be a local or systemic disease as the second cause during winter and the third cause during summer. The seasonal difference between summer and winter was statistically significant ($P < 0.05$). Cases of infantile rickets increased in winter than in summer and this was found to be statistically not insignificant ($P > 0.05$), while protein energy malnutrition was observed more in summer than in winter, and this was found to be statistically not insignificant ($P < 0.05$).

Table 4 shows that the number of males with delayed teething was 24 and that of females was 26, however, this sex difference was statistically significant ($P < 0.05$).

Nerertheless , rickets affected males more than females (3 : 2), while protein energy malnutrition affected females more than males (2 : 1), in the same time unknown causes affected females more than males but this was found also to be statistically insignificant.

As regards aetiology, from table 5, rickets was the first cause in our study, out of 50 cases, 25 suffered from infantile rickets (50 %) while protein energy malnutrition was the second cause (26 %) and lastly the unknown cause which represented 24% of all cases.

Table 6 records the distribution of delayed dentition according to age and cause, the study revealed that 42 cases (84 %) of delayed dentition were of the age group 12 - 14 months, while 8 cases (16 %) were of the age group 15 - 18 months, in rachitic cases, 20 infants and children presented with delayed dentition in the age group 12 - 14 months, while 5 cases were aged 15 - 18 months, in protein energy

malnutrition, 12 cases were of the age group 12-14 months, while only one case presented after that age. In cases of unknown cause, 10 infants were of age group 12 - 14 months, while 2 cases were aged 15-18 months.

Table 7 illustrates that 40 cases (80 %) suffered from delayed motor development. Out of these 40 cases, 21 were diagnosed as rachitic, while 11 cases had protein energy malnutrition and the last 8 cases were of unknown aetiology.

On the other hand 10 cases (20 %) out of the total 50 cases were developing normally, they included 4 cases with infantile rickets, 2 with protein energy malnutrition and 4 cases with unknown aetiology.

Table 8 records the causes of delayed teething in relation to the history of teething in siblings, it is observed that delayed teething was present in

siblings of 10 (40 %) out of 25 cases of rickets, 3 (23 %) out of 13 of children with protein energy malnutrition and 7 (58.3 %) out of 12 cases of unknown aetiology.

When we asked the mothers of infants with delayed eruption of teeth about the normal age of starting teeth eruption, all of them stated that infant must has to start teething between 7 - 9 months of age, and when we asked about the probable causes of delayed eruption of teeth of their infants (Table 9), 21 mothers (42 %) stated that they did not know the possible cause, while 16 mothers (32 %) relate the cause to general weakness of their infants, the remaining 13 mothers stated that there is positive family history.

Our study also showed that the mean age of the first erupted tooth (in months) in normal Egyptian infants was 8.94 $\pm$ 1.96 (Table 10). In the same time the mean age was earlier in males (8.8 $\pm$ 1.5) in

comparison to that of females (9.1 ± 1.93) however the difference was statistically insignificant (Table 11). The first erupted tooth was the central lower incisor in 87.3 % of all followed up normal infants, while the central upper incisor was erupted firstly in 12.7 % of cases (Table 12) and this was statistically in significant ($P > 0.05$) Table 13 shows serum calcium, phosphorus and alkaline phosphatase levels in cases of delayed teething of unknown aetiology, alkaline phosphatase was increased above the upper limit of the normal (2 - 15 K.A.U/Dl. Nelson et al., 1979)in 8 cases out of 13. While other values were of normal range, the mean value of serum calcium was 9,.12 ± 0.8 mg/dl., also the mean value of serum phosphorus was 5.36 ± 0.73 mg/dl. Lastly, the serum alkaline phosphatase level in these cases was 18.9 ± 4.28 king Armstrong unit/dl. Table 14 shows the calcium, phosphorus and alkaline phosphatase serum levels in 10 control

cases, 6 of them were of the age group 12 - 15 months, while 4 cases aged 15 - 18 months, these values were insignificantly different from that of cases of delayed dentition due to unknown cause except that alkaline phosphatase level was more in the latter cases, and this was found to be statistically significant (P 0.05) (Table 15). When we asked mothers about the history of vitamin D intake among cases of delayed teething , 19 out of 50 received vitamin D in the form of shock therapy (600,000 I.U.) for three injections in 3 cases, two injections in 4 cases and one injection in 12 cases. On the other hand 6 out of 50 cases were given vitamin D in the form of smaller dose daily or every other day injections (D - C^{a} - B_{12}) as demonstrated in table 16. On analysing these results according to the cause of delayed teething, only one case out of 8 rachitic children received 3 injections of vitamin D shock therapy, and the last injection is very recent, the

remaining 7 cases received one or two injections, among the cases of protein energy malnutrition, 4 out of 5 received I.M. vitamin D shock therapy from 1 - 3 injections. Among the cases of unknown aetiology, 7 out of 11 cases received vitamin D in the form of shock therapy for 1 - 3 injections and 4 received smaller daily doses.