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*J DENT RES* 1968; 47; 838

DOI: 10.1177/00220345680470053101

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# Skull and Muzzle Growth of a One-Year-Old Baboon with Thalidomide-Induced Malformations

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One *Papio anubis* female, No. 840, whose dam had been given thalidomide (2.5 mg/kg for seven days, treatment beginning on the 23rd day of pregnancy), was delivered by cesarean section near the end of gestation. The anomalies consisted of phocomelia of both forelimbs with triphalangism, amelia of the left hind limb, hemimelia of the right hindlimb, and abnormal curvature on the tail. Dental lamina, which were not apparent at the time of thalidomide administration, first appear on approximately the 36th day of gestation.

This investigation was supported by USPHS Research Grants 5 RO1 DE-2073-02, National Institutes of Dental Research, and GMFR 13252-03 National Institutes of General Medical Sciences, National Institutes of Health, Bethesda, Md.

Additional information is available on request to the authors.

Received for publication January 17, 1968.

Skull and muzzle measurements were obtained from tracings of lateral cephalometric radiographs. The skull measurements were derived from perpendicular lines drawn from the occlusal plane of the maxillary dentition, at the most posterior point on the calvaria to the pterion. Muzzle lengths were from the pterion to the most anterior point of the premaxilla.

Data on deciduous tooth eruption, skull and muzzle measurements, and development of the deciduous and permanent teeth at eight months and one year, respectively, are shown in comparison with five other females in the colony that were of the same age and species (Tables 1-3). Significant growth or developmental impairment of the skull, muzzle, and teeth was not ascertainable at this age. The variations in development that occurred were well within the extremes of the total study.

TABLE 1  
TOOTH DEVELOPMENT\*

	Incisors									
	Central		Lateral		Canine		Molar 1		Molar 2	
	Upper	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper	Lower
<i>Deciduous teeth, 8 months</i>										
Colony mean	X	X	X	X	XX	X	X	X	XX	XX
No. 840	X	X	X	X	XX	XX	XX	XX	XXX	XXX
<i>Deciduous teeth, 12 months</i>										
Colony mean	X	X	X	X	X	X	X	X	X	X
No. 840	X	X	X	X	X	X	X	X	XX	XX
<i>Permanent teeth, 8 months</i>										
Colony mean	XX	XX	XX	XX	...	...	XXX	XXX	...	...
No. 840	X	XX	...	...	...	...	XXX	XXX	...	...
<i>Permanent teeth, 12 months</i>										
Colony mean	XXX	XXX	XX	XX	...	X	XXX	XXX	X	X
No. 840	XXX	XXX	XX	XX	X	X	XXX	XXX	...	X

\* Standards by Garn (*J Dent Res* 38:135, 1959): x, earliest appearance of follicle; xx, initial calcification of cusps; and xxx, calcification of crown.

TABLE 2  
DECIDUOUS TOOTH ERUPTION (DAYS)

Teeth	Colony Mean		No. 840	
	Upper	Lower	Upper	Lower
I	33	37	30	37
II	63	55	45	45
III	127.8	123	97	91
IV	134	141	Not recorded	202
V	266	235	284	260

TABLE 3  
LATERAL VIEW MEASUREMENTS (MM)

Measurement	8 Months		12 Months	
	Colony Mean	No. 840	Colony Mean	No. 840
Skull	83.8	77.8	89.3	82.6
Muzzle	31.7	31.3	33.9	36.2
% Muzzle to skull	29	28.7	27.4	30.4