

WHAT ARE MULBERRY MOLARS?

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Report: Presence of a Connate Tooth in a Neonatal Chimpanzee

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While dissecting the developing teeth from a neonatal chimpanzee, we recently found an example of a dichotomous lower tooth (connate tooth, per Miles and Grigson, 1990) comprised of the left di_1 and di_2 . As seen in Figure 1, merger between the crowns appears to have occurred between the lateral border of di_1 and the medial border of di_2 . The crown is complete in both with root development commenced in both central and lateral parts of the tooth. However, there is a differential in root development between medial and lateral tooth components suggesting that although merged, each component retains somewhat separate developmental parameters.

Miles and Grigson (1990) provide several examples of connate teeth including a photograph (Figure 3.9, p. 27) of one in the position of the I_2 in an adult chimpanzee. The crown of this tooth, like the one reported here, is separated only along the incisive border with the remainder of the crown combined in a single unit. Our tooth differs, however, in being a connate deciduous tooth representing combined deciduous teeth rather than a permanent connate tooth in the position of a single tooth. Ooe (1972) citing the work of others (Euler, 1939; Thoma, 1960) notes that connate teeth are more likely to appear in the deciduous dentition, most commonly involving the lower incisors as seen here (Hachisuga, 1938; Ito, 1939; Saito, 1959; Yuasa, 1944).

Two mechanisms have been hypothesized to explain connate teeth (Miles and Grigson, 1990): 1) they represent fused or joined tooth buds as a result of development in crowded space; or 2) they are the result of partial or incomplete splitting (dichotomy) or separation of tooth primordia during early stages of development. Research has provided support for both theories. For instance, Sofaer's work (1969) with mice appears to support crowding, hence fusion, whereas Ooe's work (1972) on humans provides evidence supporting the incomplete separation or dichotomy theory. Berkovitz et al. (1973) have found evidence in their work with ferrets to support the occurrence of both mechanisms. Based on the accumulation of evidence implicating both mechanisms in the development of connate teeth, Miles and Grigson (1990, pg. 9) conclude that "not all connate teeth arise in the same way." In our opinion, studies such as those of Ooe (1972) and Berkovitz et al. (1973) on the early stages of development are crucial to identifying the correct mechanisms.

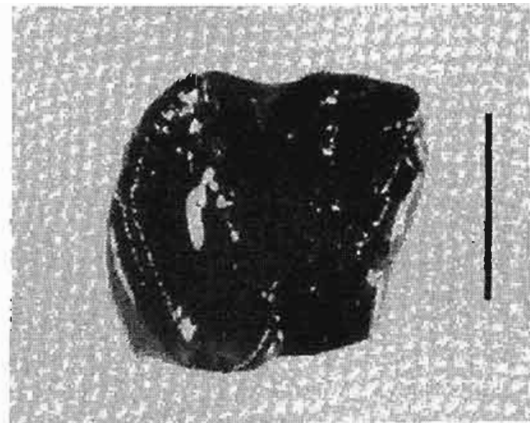


Figure 1. A lingual view of a connate deciduous incisor (combined left di_1 and di_2) in a newborn female chimpanzee (Yerkes specimen 87-159, property of D.R.Swindler). Scale = .5 cm. (Copyright L.A. Winkler)

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CONNATE TOOTH IN A NEONATAL CHIMPANZEE

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Periodontal Disease: Clinician's Point of View

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I have read with interest and some confusion the thoughts of Clark (1993). I understand that he believes that localized periodontal disease originates in the tooth (pp. 2,3).

The view taught in American dental schools today is that, although periodontal disease is bacterial in origin, the bacterial invasion is presented from outside the tooth in the oral environment, and not the opposite (La Zare, 1967; Glickman, 1974; Klavan, et al., 1977; Schluger, et al., 1978; and Grant, et al., 1979). Let me briefly describe the prevailing view of periodontal disease as I explain it to my patients:

Mrs. Jones, I notice that you have bleeding gums. This is evidence of a very common infection called gingivitis. Eighty percent of our population has this gum disease. It is caused by germs floating in every person's saliva. These germs form a colony called plaque which is attached to the teeth and gums. If plaque is allowed to remain on your teeth and gums, the germs produce damaging acid which causes the gums to become inflamed and bleed. As time passes, the damage progresses and the supporting bone begins to melt away from the surrounding teeth. Dentists call this stage of infection periodontitis. The condition of periodontitis is treated by removal of the bacterial invaders and deposits from the surface of the teeth and exposed root surfaces.

If localized periodontitis were caused by disease of the tooth, then we should see many more aching teeth. Indeed, we often treat periodontal disease and see no pupal problems at all.

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News of Dental Anthropology Association Members

M. Yasar Iscan, Florida Atlantic University, organized two symposia on skeletal biology (with **Susan Loth**, Florida Atlantic University) and forensic anthropology (**Erksin Gulec**, University of Ankara) and presented two papers at the International Congress of Anthropological and Ethnological Sciences, held in Mexico City, Mexico. **Christy G. Turner**, **Antonia Marcsik**, and **Alexander Zubov** also participated in the congress.

On September 8, **Iscan** also presented the opening lecture "Forensic Anthropology" at the Italian Anthropological Society meeting held in Pisa. Two weeks earlier, from August 22-28, **Iscan** served as the invited chairman of a special symposium on Craniofacial Identification at the International Association of Forensic Sciences Meeting, Dusseldorf, Germany. At that meeting he presented papers, one of which dealt with the comparison of human face in photographs.

Iscan and R. Helmer are editors of a new book which should be available from John Wiley and Sons, New York, in mid-October. Entitled *Forensic Analysis of the Skull: Craniofacial Analysis, Reconstruction*