INHERITANCE OF A PECULIAR TYPE OF HYPODONTIA

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A peculiar type of hypodontia is described in two opposite sexed siblings and considered to be inherited as an autosomal recessive trait.

Hypodontia, a sign of evolutionary trend in human dentition (Shultz 1934, Montagu 1940, Brekhus et al. 1944, Bourgeois 1962), usually appears in the form of absence of the lateral incisors or the last molar teeth (Shultz 1934). It also affects the remaining teeth in both size and pattern (Garn et al. 1963, Keene 1965, Garn and Lewis 1969 and 1970). A lot of variation has been found for the inheritence pattern of the different types of hypodontia (Sergi 1914, Shultz 1925 and 1932, Thomas 1926, Ford 1961).

The most commonly absent teeth are the upper lateral incisors, lower second premolars, and both upper and lower last molars (Rosenzweig and Garbarski 1965). However, other types of hypodontia have been reported (McQuillen 1870, Füst 1924, Schultz 1934, Modi 1975). According to Parreidt (1886), Reboul (1897) and Füst (1924), most teeth defects are often associated with abnormalities of hair, like increased growth, etc.

The present study is a case report of a peculiar type of hypodontia.

The trait appears in only two sibs of a family, all other near relatives being normal (Fig. 1). The brother (age 24 years) had only 27 teeth, there being only one molar on the upper left side, up to the age of 20 years, and the same condition still exists with his sister, aged 18 years. The brother got his next molar tooth eruption, on the left upper side, at the age of 21 years, to be followed with the eruption of M3s on the remaining three sides, one each year, thus completing a total of 31 teeth at present. The X-ray examination of the left upper jaw (Fig. 2) shows a lack of space for a further tooth eruption. An examination of the cusp-pattern of this 'second' molar on the upper left side, shows a similarity with the cusp-pattern of M3 on the upper-right side, thereby indicating that the tooth in question is M3 and not M2. The age of eruption of this tooth also tends to confirm that, since the mean age of M2 eruption in the Punjabi population, to which the family belongs, ranges from 11 to 14 years (Shourie 1946, Sidhu and Gupta 1974).

Both sibs are otherwise normal, with no other apparent physical deformity. Though both have good hair growth, it is not so heavy as to warrant any special consideration; moreover, their mother also has good hair growth. So, the dental abnormality does not seem to be associated with any other abnormality.

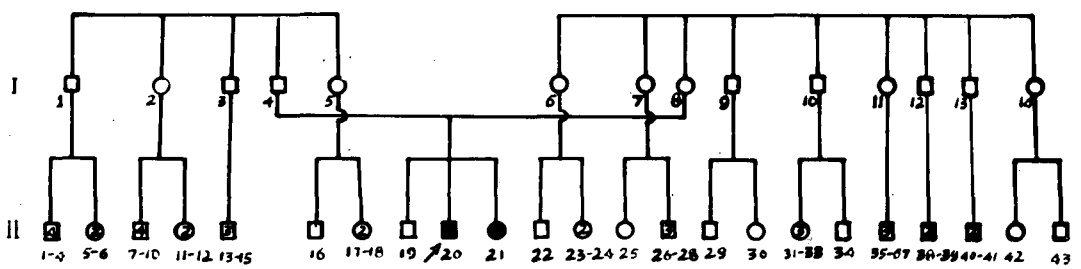

Fig. 1. Pedigree of two siblings affected by hypodontia.

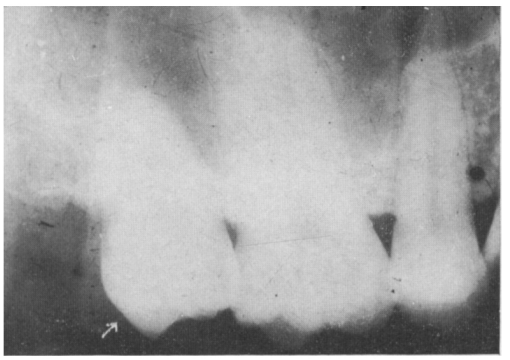

Fig. 2. X-Ray of left upper maxilla.

Since the trait appears in different sexed sibs with no affected parent, it cannot be sex-linked or sex-affected and can be considered as an autosomal recessive trait, unless one assumes a mutation in the germ cells of one of the parents. Though coming from separate families, the parents belong both to the Arora caste of the Punjabi population, in which the consanguineous marriage is a common practice and that might have led to a higher frequency of the rare recessive gene responsible for this dental anomaly. So, whether the trait may be called as the absence of upper left M2 or the late occurrence of upper left M2 with no space for M3, it can be considered as an autosomal recessive trait.

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