Oral-facial-digital II (Mohr) Syndrome

An Autopsied Case

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Oral-facial-digital (OFD) syndrome which has anomalies in the oral cavity, the facial dysplasia and anomalies of the extremities has been divided on genetic and symptomatologic bases into two clinical entities, namely OFD I and OFD II. OFD II is much rarer than OFD I and has been reported about 20 cases in literature. The authors report an autopsied case of OFD II syndrome. To our knowledge, there has been only one reported case in Japan[1].

CASE REPORT

A one-month-old male infant was admitted to our hospital to examine for multiple congenital anomalies. Although he was born at full-term weighing 3,700 g, asphyxia was found at birth. During the first one month the patient was in an incubator and nourished by a feeding tube because of his sucking disturbance. His mother, a phenotypically normal female, had been given antianemic drugs during pregnancy. Familial history of the patient had no consanguinity and there was no subject with congenital malformation among his relatives.

On admission his body measurement values were 3,540 g in weight, 49.6 cm in length, 29.0 cm in chest and 39.0 cm in head circumference. His body proportion was shown somewhat abnormal with large head and short extremities. Other abnormal findings were as follows: central pseudocleft of the upper lip, lobate tongue with nodules, short frenulum, high arched palate, antimongoloid slant of the palpebral fissures, hypertelorism, and depressed nose. There were the right inguinal hernia and polydactyly on both hands with overlapping fingers and syndactyly on both great toes. No heart murmurs were audible. An abnormally small penis was found. Both testes, however, were in the scrotum (Figs. 1, 2, 3).

Blood, urine and serum biochemical findings as a routine examination were almost normal except for slight peripheral eosinophilia (12.4

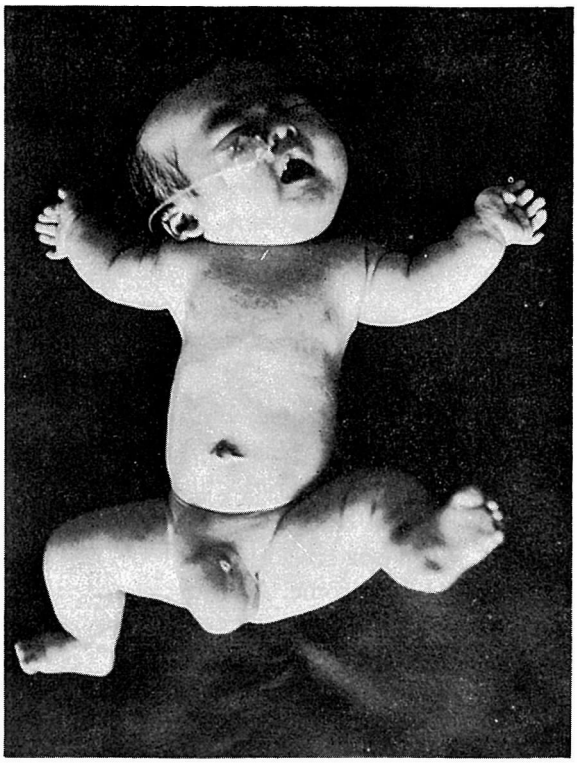

Fig. 1. General appearance of the patient.

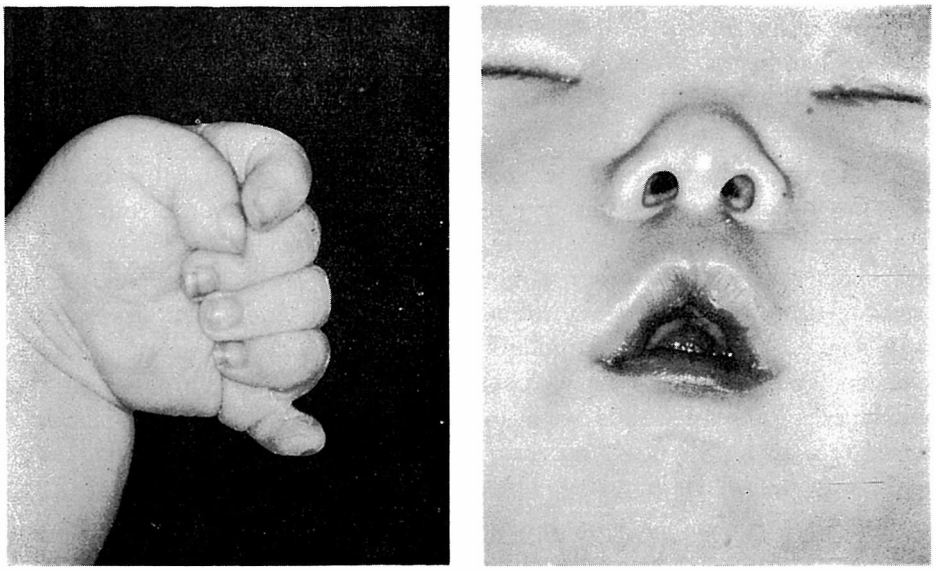

Fig. 2. Polydactyly of the left hand and pseudocleft of the upper lip.

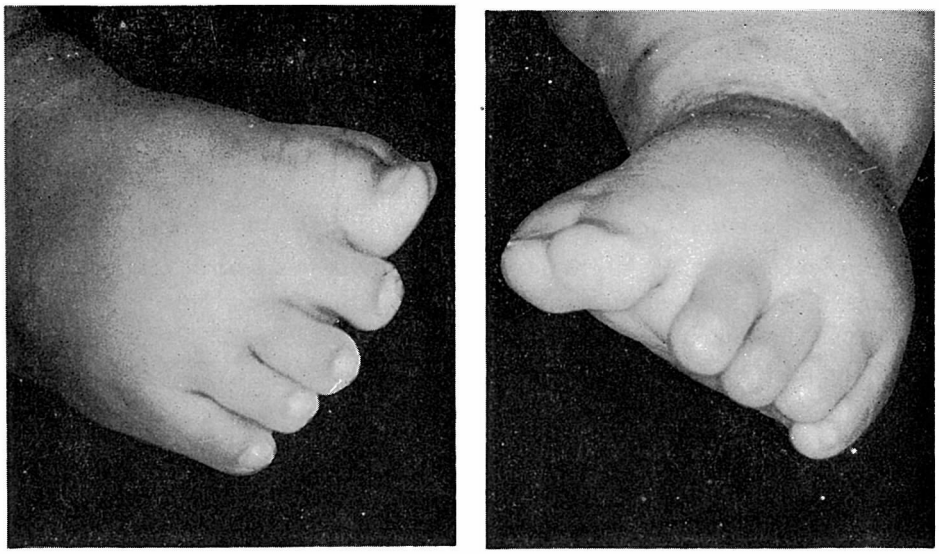

Fig. 3. Polydactyly and syndactyly of the both great toes.

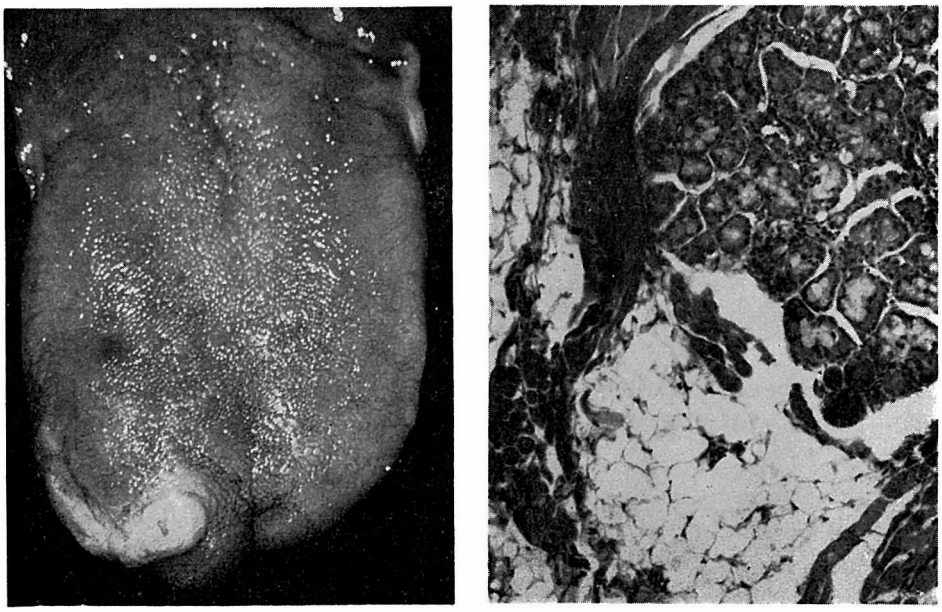

Fig. 4. The tongue and histology of a nodule.

%). There were normal optic fundi. ECG and UCG findings indicated right ventricular hypertrophy. In EEG findings 1-2 c/sec and 2-3 c/sec delta-waves were dominantly shown, and no sonic response was noticed. Cytogenetically, the karyotype of the patient revealed a 46, XY and normal male banding patterns. X-ray findings revealed extrametatarsals on both feet. The long bones of the extremities were short and broad, especially the tibias and fibulas. The left fifth metacarpus was bifid.

Clinical course. A slight fever and tachypnoea had developped in the patient since his admission. His chest roentgen films revealed an abnormal shadow in the right upper lung field. At 95-day-old he died of pneumonia and was autopsied.

Autopsy findings. Tongue: a pea-sized and a small fingertip-sized whity-yellowish nodule were recognized on the tip and the right margin of the tongue. Histologically, the cut surface of the nodule was fat tissuelike. It revealed a hamartomatous figure with the salivary gland tissue and fatty tissue with hypertrophied cells (Fig. 4). Liver and spleen: liver was severely congested and slightly fatty degenerated. Spleen was also congested and was filtrated with many eosinophils. There were 6 accessory spleens around the splenic hilus. Other organs and tissues: there was hyperplasia of lymphoid tissue of the end of the ileum and the colon. Thymus weighed only 3 g. Subarachnoidal hemorrhage was shown.

DISCUSSION

Oral-facial-digital (OFD) syndrome has been divided into two categories, OFD I (Papillon-Leage & Psaume) and OFD II (Mohr) syndromes. Over 100 cases of OFD I have been reported since Papillon-Leage and Psaume[2] described in detail this syndrome. Incidence of OFD I is one in 60 to 100 among the subjects with cleft palate or about 1 per 45,000 live births[3]. OFD I is shown only in female because this disorder may be lethal in male subjects. Wahrman et al[4]., however, reported a boy with an XXY sex chromosome complement. It may be an X-linked dominant disease. No chromosomal abnormality in OFD I has been reported except for cases with an Al trisomy[5], an XXY Klinefelter syndrome[4], and a mosaicism[6]. Whelan et al[6]. reported two patients, a mother and her daughter, with OFD I in a family. The daughter had a normal karyotype (46, XX), whereas, her mother was a mosaic (46, XX/46, XX, 18q-).

Clinical manifestations of OFD I are as follows: hyperplastic lingual flenulum, lobate tongue, nodules of the tongue, cleft palate, median

pseudocleft of the upper lip, clinodactyly of the fifth fingers or other anomalies of the fingers, mental retardation, missing mandibular lateral incisors, and hypoplastic zygomatic bones.

In 1941, OFD II was reported by Mohr. Incidence of this syndrome is much lower than that of OFD I. Sixteen cases, 10 males and 6 females, have been summarized by Levy et al[9].

Clinical features of OFD II are common to those of OFD I. However, Rimoin et al[7]. separated OFD II from OFD I, clinically and genetically. According to this classification OFD II has bilateral syndactyly of halluces, hyperplasia of the lingual frenulum, broad nose with the bifid tip, and hypoplasia of body of mandible. Mode of inheritance of this syndrome may be autosomal recessive. Levy et al[9]. emphasized that the differential diagnostic points between OFD I and OFD II were sex, conductive deafness, and duplicated first toes. They also pointed out that there had been no case with mental retardation in OFD II.

Table which was summarized by Levy et al[9]. and added a further case[1] shows that the present case closely resembles OFD II (Mohr) syndrome. However, many of these clinical features shown in OFD I and OFD II are common to each syndrome. Whelan et al[6]. stated that these syndromes should be "lumped" together as one syndrome.

Table 1. Clinical characteristics of OFD Ⅱ (Mohr) syndrome.

Clinical symptoms	Positive %	Present case
Oral:		
High arched or cleft palate	71.4	+
Midline cleft of the upper lip	38.5	+
Lobate tongue	38.5	+
Facial:		
Broad nasal root	100.0	+
Dystopia canthorum	100.0	+
Broad bifid nasal tip	66.7	+
Micrognathia	51.1	−
Digital:		
Short broad first metatarsals	100.0	+
Polydactyly, syndactyly, clinodactyly	80.0	+
Bilateral reduplicated hallux	75.0	+
Broad duplicated middle cuneiform bones	75.0	?
Others:		
Moderately short stature	100.0	+
Conductive deafness	100.0	+ ?
Abnormal metaphyses	66.7	−

SUMMARY

A male infant, aged one-month, associated with OFD II (Mohr) syndrome was reported. The patient died of pneumonia at 95 days and was autopsied. Histologically, lingual nodules revealed a hamartomatous figure. Clinical manifestations were as follows: his extremities bore no proportion to the body, middle pseudocleft of the upper lip, high arched palate, lobulated tongue with nodules, depressed nasal bridge, poly-and/or syndactyly of the fifth fingers and the first toes.

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