

Cebocephaly in an infant with trisomy 18

SUMMARY An infant who died in the perinatal period with the unusual association of trisomy 18 and cebocephaly is described. It is suggested that this association may be more common than is generally recognised because the majority of such infants are stillborn or live only briefly and often do not have chromosome studies performed.

Cebocephaly is an aetiologically heterogeneous malformation complex whose association with trisomy 13 and the 18p-,r(18) deletion syndrome is well established, but which is distinctly uncommon in trisomy 18 (Lazjuk *et al.*, 1976). In this paper we describe an infant with trisomy 18 who had cebocephaly, and suggest that malformations of the arrhinencephaly-holoprosencephaly type may be more common than is generally believed in trisomy 18.

Case report

This boy was the third-born child of a healthy 28-year-old mother and 30-year-old father. He was born after 36 weeks' gestation weighing 1110 g and was pronounced dead at 15 minutes of age. The occipito-frontal circumference was 23 cm, length 37 cm, and chest circumference 21 cm. The eyes were close set and prominent; the nasal bridge low and the nose was small with a single nostril (Fig. 1). The chin was flat, and the neck short and webbed. The testes were undescended and there was a glandular hypopadias.

Major necropsy findings included: lack of division between the cerebral hemispheres with absence of the frontal lobes, olfactory bulbs, and tracts, Type 1 tracheoesophageal fistula, a ventricular septal defect, an extralobar sequestration of the left lung supplied by a subdiaphragmatic intercostal artery and draining into the azygous vein, a Meckel's diverticulum containing heterotopic gastric mucosa and pancreatic tissue, and a single umbilical artery.

Microscopical studies, in addition, showed unexplained focal medial calcification and intimal thickening of the arteries of the neck, and prominent lymphoid aggregates in the lungs, kidneys, pancreas, and lymph nodes.

Q-banded chromosome analysis of 20 cells grown from a postmortem skin biopsy showed trisomy 18 in all cells (Fig. 2).

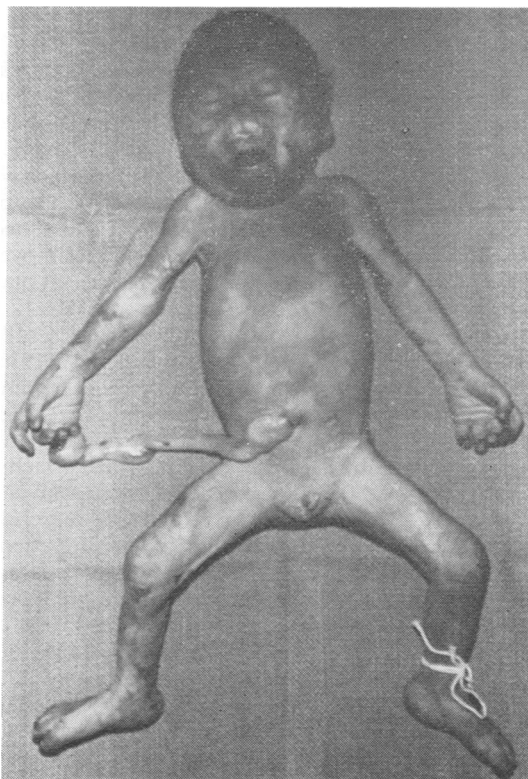


Fig. 1 Postmortem photograph of infant, illustrating cebocephaly and hypoplastic external genitalia.

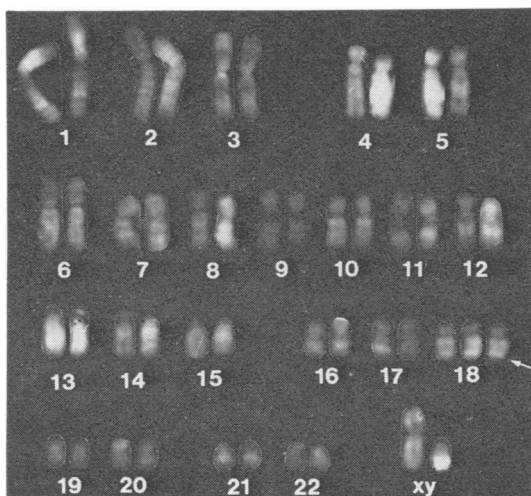


Fig. 2 Q-banded karyotype of patient showing trisomy 18.

Discussion

The small size for dates, cardiac and oesophageal defects observed in our patient are commonly seen in trisomy 18; however, the infant reported by Holmes *et al.* (1974) is the only other case of cebocephaly associated with trisomy E (presumed 18) of which we are aware. In a recent discussion of the genetic heterogeneity of cebocephaly, Lazjuk *et al.* (1976) stated that this case was the only such association in over 400 reports of trisomy 18 and suggested that it may have represented a chance occurrence.

It has been pointed out by Machin and Crolla (1974), Sutherland *et al.* (1974), and Kuleshov (1976) that a significant proportion of children with trisomy 18 are either stillborn or die in the immediate perinatal period. Though some of these infants have recognisable features of Edwards syndrome, Machin and Crolla (1974) emphasised that those who are stillborn or who die in the perinatal period represent the severe end of the spectrum of malformations associated with trisomy 18, are often macerated, and frequently do not have chromosome studies performed and, therefore, remain undiagnosed. It is of note that 2 of the 8 infants reported by Machin and Crolla (1974) had cerebral holospheres, and though neither of these infants had cebocephaly (G. A. Machin, 1976, personal communication), there is a consensus that cebocephaly is part of a spectrum of malformations with the same morphogenesis, ranging from defects in the prolabium and premaxilla to cyclopia (DeMyer, 1975). It is possible that patients with trisomy 18 and cebocephaly are relatively under-represented in reported series of patients with trisomy 18 as they tend to be stillborn or die in the perinatal period and are less likely to have chromosome studies performed.

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ALASDAIR G. W. HUNTER, MANORANJAN RAY,
AND CLAIRE LANGSTON
*Division of Genetics, Departments of Pediatrics
and Pathology, University of Manitoba and Health
Sciences Centre, Winnipeg, Canada*

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Requests for reprints to Dr A. Hunter, Department of Genetics, Health Sciences Centre, 700 William Avenue, Winnipeg, Canada R3E 0W1.

Addendum

After acceptance of this paper for publication a report appeared by Lang *et al.* (1976) of a stillborn infant with trisomy 18 and cyclopia. This report adds weight to our contention that a significant proportion of infants with trisomy 18 and malformations of the arrhinencephaly type may go undiagnosed because of failure to carry out chromosome studies.

Reference

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