Case Reports

Chromosome Deletion and Multiple Cartilaginous Exostoses*


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Abstract. We report a 13 year-old girl with manifestations strikingly reminiscent of the tricho-rhino-phalangeal (TRP) II or Langer-Giedion syndrome. A terminal deletion of 8q must be assumed to be the cause of her condition till proven otherwise. A similar chromosome abnormality should be searched for (blindly) in other cases of the TRP II previously thought to have had normal chromosomes.

Key words: Deletion 8q- - Multiple congenital anomalies (MCA) syndrome - Mental retardation (MR) - Multiple exostoses - Shortness of stature - Microcephaly - Tricho-rhino-phalangeal II syndrome - Langer-Giedion syndrome.

Introduction

Individual manifestations of aneuploidy syndromes can be indistinguishable from those due to gene mutation. Indeed, before the advent of banding methods it was frequently impossible to decide, solely on phenotypic grounds, whether a given patient's complex multiple congenital anomalies (MCA)-mental retardation (MR) syndrome (with or without evident dysplastic components) was due to a small structural autosomal aberration or another cause. Thus, aniridia-Wilms' tumor syndrome was well known (Fraumeni, 1969) long before Riccardi et al. (1978), Ry Andersen et al. (1978) and finally Zabel et al. (1979) confirmed an interstitial deletion of 11p as the unequivocal cause of this sporadic MCA/MR/dysplasia syndrome.

We report a patient with a complex MCA/MR/dysplasia syndrome reminiscent of the tricho-rhinophalangeal II (Langer-Giedion) syndrome. For over 10 years her chromosomes were regarded as normal until banding methods allowed detection of a terminal 8q-deletion which may be the cause of her condition.

Report of Patient

The family history is non-contributory. Both parents are healthy and non-consanguineous. There are no siblings. At 20 years the mother had a miscarriage in her 3rd month of pregnancy. At the time of conception of the proposita the father was 27 years old, the mother 23. Pregnancy was uneventful. The girl was born spontaneously at term. The amniotic fluid was meconium stained. Birth weight was 1900 g, length 44.5 cm. The child had severe asphyxia; the cord was wound twice around the neck. The postnatal period was complicated by atelectasis and feeding difficulties. On fundoscopic examination medium size hemorrhages were seen in the retina and within the vitreous body. Results of toxoplasmosis and syphilis tests were negative. Multiple minor anomalies were noted at birth. Subsequently she manifested delayed psychomotor development, shortness of stature, retarded bone age, recurrent respiratory tract infections and feeding difficulties. At 14 months pubic hair and slight breast budding were noted. Hormonal investigation was inconclusive and true precocious puberty could not be proven. Eventually the premature thelarche subsided but the pubic hair persisted at stage II-III (Tanner) until puberty occurred at a normal age. Menarche appeared at 12 years and she has had regular menses since.

The child has been investigated for and operated on several times for multiple exostoses; a large umbilical hernia was repaired at 14 months.

At 13½ years the girl was 135.5 cm tall, weight was 30 kg, and head circumference 48.5 cm (all < 3rd centile). Her face was quite broad (Fig. 1, 2), forehead somewhat prominent and midface relatively short; she also had a receding chin, a broad nasal bridge, an elongated philtrum, protruding ears with poorly developed helix, apparent hypertelorism, divergent strabismus and very broad eyebrows. The teeth were abnormally positioned. Fundoscopic examination was normal. The upper sternum was somewhat depressed. The secondary sex characteristics were well developed. Both 5th fingers were short and the nails of fingers...
Fig. 1. Proposita, age 17½ years

Fig. 2. Proposita, age 10½ years

Fig. 3. Roentgenogram of the left hand, age 13½ years