Kabuki make-up syndrome* (Niikawa-Kuroki syndrome) associated with congenital heart disease

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SUMMARY Kabuki make-up syndrome has been reported mainly among Japanese, so far occurring in more than 20 cases. Among these, however, only one case associated with congenital heart defect has been reported. We have treated three patients with this syndrome and of these two had congenital heart disease. We suggest the possibility that the association of congenital heart disease with Kabuki make-up syndrome may not be fortuitous.

Case reports

CASE 1

The patient was delivered on 30.12.74 to a 25 year old woman after an uncomplicated term pregnancy. His parents were healthy and unrelated, the father being 33 years old. Birth weight was 3450 g and height 47.5 cm. His older brother died of unknown causes soon after birth.

At 3 months after birth a heart murmur was apparent and he was diagnosed on the basis of routine examinations as having a ventricular septal defect. Since he was of short stature in addition to his heart defect, he was referred to our outpatient clinic on 1.3.78 for diagnosis. At that time, his height was 82.7 cm (-2.9 SD), weight 10.37 kg (-2.3 SD), and head circumference 48.0 cm ($+1.0$ SD). He had arched eyebrows which were sparse in the lateral half, right esotropia, partially blue sclerae, epicanthus, ectropion of the lower eyelids, long eyelashes, and a broad, flat nasal tip (fig 1). His teeth were widely spaced and a bifid uvula was observed. His auricles were prominent and a sacral dimple was noted. His fingers were stubby. The dermatoglyphic findings were a total ridge count of 46, mainline A ending at area 2, and no high axial triradius. Palmar transverse creases were noted on both palms.

*The features of the patients' faces are reminiscent of the make-up used by actors in Kabuki, a traditional Japanese play, so that this malformation syndrome was called the 'Kabuki make-up syndrome'.¹

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A grade 3/6 systolic murmur was heard at the lower left sternal border. On the phonocardiogram, a holosystolic murmur was noted. The findings of chest x-ray, ECG, and VCG were normal. From these findings, the authors made a diagnosis of ventricular septal defect.

The T3, T4, TSH, and growth hormone levels were within normal limits. Chromosome analysis revealed a normal male karyotype.

Thereafter, he was regularly observed as an outpatient, and by the age of 4 the defect had closed spontaneously. When he was examined on 7.7.83 his height was 107.2 cm (-3.2 SD), weight 20.3 kg (-1.3 SD), and head circumference 51.2 cm. His IQ was 83. He was hyperkinetic and his teacher reported learning disabilities.

FIG 1 Case 1 aged 9 years.

FIG 2 Case 2 aged 8 months.

CASE 2

The patient was delivered on 1.3.83 to a 31 year old woman after a normal pregnancy. The parents were healthy and unrelated, the father being 34 years old. Birth weight was 2920 g, height 49 cm, and head circumference 33 cm. His sister and brother were both healthy.

At one month after birth, he was admitted to our hospital on account of a heart murmur and poor weight gain. His height at admission was 50 cm (-2.6 SD), weight 3255 g (-4.8 SD), and head circumference 35 cm (-1.9 SD). His face was characteristic with hypertrichosis over the forehead, arched eyebrows which were sparse in the lateral half, long eyelashes, long palpebral fissures, ectropion of the lower eyelids, prominent ears, and a preauricular pit on the left (fig 2). A submucous cleft palate was noted. The *atd* angle on the left palm was 47° , but on the right no high axial triradius was found. Right club foot and dislocation of the left hip joint were noted.

Auscultation revealed a grade 4/6 systolic murmur at the lower left sternal border. Chest x-ray detected a cardiothoracic ratio of 0.55 and ECG revealed RVH. With the aid of echocardiography and heart catheterisation a diagnosis of double outlet right ventricle, persistent ductus arteriosus, and coarctation of the aorta was made. Chromosome analysis revealed a normal male karyotype.

At 9 months, his height was 64.7 cm (-3.0 SD), weight 5015 g (-4.0 SD), and head circumference 39.0 cm (-4.7 SD). At 11 months, his developmental quotient was about 40. The patient died suddenly at home on 11.2.84. Necropsy was refused.

Discussion

Kabuki make-up syndrome was reported by Niikawa *et al*¹ and Kuroki *et al*² in 1981. The main features of this malformation syndrome are mental retardation, short stature, characteristic facies, and skeletal and dermatoglyphic abnormalities. So far over 20 cases of this syndrome have been reported,³ the majority being Japanese.

All cases have been sporadic with no parental consanguinity. Chromosomal karyotypes have been normal.³ The aetiology of the syndrome has not been clarified.

Among the cases reported in the past, there have been few with visceral abnormalities. There was only one case associated with congenital heart defect reported by Kuroki *et al*.² Out of three patients treated by us, congenital heart disease was noted in two, who were regularly visiting our Pediatric Cardiac Outpatient Clinic. One of these patients had a ventricular septal defect which closed spontaneously in the course of development. It is thought that the same predispositions are implicated in cases which close spontaneously as in those which have to be closed surgically.⁴

In recent years, we have observed a tendency for specialists in each field to examine a disease only from the viewpoint of his own field. Consequently, since the degree of mental retardation in this syndrome is sometimes quite mild, patients might be treated as having congenital heart defect alone.

References

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