WINDSWEPT DEFORMITY

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The occurrence of "windswept deformity" in the legs of otherwise healthy African children in the second or third year of life is illustrated by three typical case histories. The usual causes of epiphysial abnormality were absent in these and other similar patients seen recently in central Nigeria. It is suggested that an unrecognised hereditary dysplasia of bone, possibly of local geographical distribution and associated with a phase of epiphysial instability due to rapid growth, might underlie the sudden onset of this striking deformity.

The term "windswept deformity" describes the appearance of abnormal valgus deformity in one knee in association with varus deformity in the other. It is commonly seen in young children in certain parts of Africa, but has received only brief attention in the medical literature.

Clinical features. The deformity usually occurs in a healthy child with normal developmental milestones. During the second or third year a valgus deformity rapidly develops on the "windward" side quickly followed by the appearance of a varus deformity of comparable degree in the other, "leeward", knee. The transformation from normal alignment to severe deformity may take only a matter of weeks. General skeletal or metabolic disease, malnutrition and sickle-cell disease are not found.

Radiographic appearances. The radiological changes in the affected epiphyses and metaphyses are not unlike those described by Blount (1937) and Golding (1962) in bilateral tibia vara, and also bear some resemblance to those seen in multiple epiphysial dysplasia (Wynne-Davies and Fairbank 1976). No other parts of the skeleton are involved.

ILLUSTRATIVE CASE REPORTS

These three children were seen at the University of Ife Hospitals in Central Nigeria.

Case 1. This boy showed no clinical abnormality at birth and walked when one year old. At the age of three he had an acute febrile illness, possibly measles, after which he rapidly developed the windswept deformity. When seen aged seven (Fig. 1) he had no clinical or radiographic evidence of rickets or other generalised bone disorder, and his serum alkaline phosphatase and sickle-cell tests were normal. There was no family history of similar skeletal deformity. He was treated by varus osteotomies of the tibia and femur on the valgus side and valgus osteotomy of the tibia on the varus side.

Case 2. This boy was normal at birth and walked when one year old. His development was normal until the age of four and a half when he rapidly developed windswept deformity to such a degree that lateral dislocation of the patella occurred on the "windward" side (Figs 2 to 4). When seen at the age of six he had no clinical or radiological evidence of generalised bone disorder. Tests for sickle-cell disease were normal. His serum alkaline phosphatase was not known. He had a brother with mild bilateral genu valgum. He was treated by corrective osteotomies to the femur and tibia on the valgus side.

Case 3. This girl had walked when one year old and showed no evidence of abnormality until the age of two, when she gradually developed a valgus deformity of the right knee, and then a mild varus deformity on the opposite side. There was no evidence of rickets or sickle-cell disease and no family history of skeletal abnormality. Varus osteotomies of the tibia and femur were carried out on the valgus side.

DISCUSSION

The term "windswept deformity" is commonly used in Africa to describe the appearance of the legs in these children. Fulford and Brown (1976) applied the term in a different context to a postural deformity acquired by spastic infants during the first few weeks of life.


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Abnormal degrees of symmetrical knock-knee and, more commonly, bow-leg often occur among both white and coloured children, usually without evident underlying cause. Blount (1937) described a condition of tibia vara in children and called it osteochondrosis deformans tibiae. Golding (1962) reported an extensive survey of this condition in West Indian children. Both authors recognised a more common infantile form arising in the first, second or third year of life and a rarer, usually less severe, adolescent type. The deformity could be unilateral or bilateral and no certain aetiological factor was identified.

The radiological changes described by these authors, and in another patient with severe bow-leg encountered by Brennan and Guarino (1961), resembled those in our patients, with retarded growth on the side of maximal pressure on the upper tibial epiphysis, the medial in genu varum, which became angulated and of denser consistency, while the adjacent metaphysis developed a beak-like projection (Fig. 4). These appearances might well be consistent with the mechanical pressure effects of a rapidly occurring deformity at the time of a growth spurt.

Idiopathic genu valgum was found by Morley (1957) to be present, with two inches or more of inter-malleolar separation, in 22 per cent of a group of London children aged three to three and a half years, while only one to two per cent of seven-year-olds from the same environment showed an equivalent degree of deformity, indicating that there might be a period of potential epiphyseal instability at about the third year of life when any additional stress-factor, such as intercurrent disease or familial susceptibility, could tilt the balance of skeletal growth in one direction and produce rapid deformity. Golding has reviewed the details of our patients and suggested the possibility of a genetic bone dysplasia of local geographical distribution (Golding, personal communication).

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REFERENCES