with fractures, since haematomas at fracture sites have an osteogenetic potential (Mizuno et al 1990). In some cases there are no identifiable fractures.

The condition is self-limiting and usually painless, but mechanical problems may be caused by a large lesion in the vicinity of a joint. Surgical excision is rarely justified.

No benefits in any form have been received or will be received from a commercial party related directly or indirectly to the subject of this article.

REFERENCES


Table I. Risk factors for the development of CDH

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<th>Risk Factor</th>
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<td>1 Positive family history</td>
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<td>2 Breech presentation at birth</td>
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<td>3 Congenital postural deformities</td>
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<td>4 Persistent click in a stable hip</td>
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<td>5 Births by caesarean section</td>
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<td>6 Oligohydramnios</td>
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<td>7 Fetal growth retardation</td>
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RADIOLOGICAL SCREENING FOR CONGENITAL HIP DISLOCATION IN THE INFANT ‘AT RISK’

LESTER D’SOUZA, DARRAGH HYNES, FRANK McMANUS

Despite screening for congenital dislocation of the hip (CDH), children still present with a ‘late’ diagnosis of dislocation. The incidence is 0.4 to 2.0 per 1000 live births in most series (Dunn et al 1985; DHSS 1986; Bernard et al 1987). Risk factors for the development of CDH have been identified (Table I), and it has been suggested that up to 60% of children with a late diagnosis have identifiable risk factors (Jones and Powell 1990). It has been proposed that such children should have pelvic radiography at four to seven months. At this age the ossific nucleus can be seen and a diagnosis of dislocation or dysplasia can be made (Bernard et al 1987; Garvey et al 1992; Krikler and Dwyer 1992).

We have therefore assessed our experience with a group of children referred after radiography at four months.

Patients and methods. Between 1989 and 1992, a total of 18 627 children were born in the National Maternity Hospital, Dublin which has an active clinical screening programme for CDH. Of these, 280 (356 hips) were referred to our CDH clinic in the neonatal period for assessment of hip instability. All with risk factors for CDH had radiography at four months of age (Garvey et al 1992); 210 infants (160 female and 50 male; 291 hips) were referred with a radiograph which was reported to show acetabular dysplasia. None had radiological hip dislocation or subluxation. They were regularly reviewed clinically and had repeat radiography at four-monthly intervals until acetabular development was deemed to be normal and they were walking normally.

Results. All hips were clinically stable at the time of initial assessment. Dysplasia was graded as mild, moderate or severe on the pelvic radiographs. Mild dysplasia was diagnosed as that with an acetabular angle between 28° and 32°, moderate as between 33° and 38° and severe as more than 39°. Of the 291 hips, 190 were classified as having mild dysplasia and 3 as having severe dysplasia. The remaining 98 hips had acetabular angles of less than 28°. Of those with mild dysplasia, 183 (96%) had reverted to normal by the time of the second radiograph at eight months of age and the other seven at 12 months. The three hips with severe dysplasia at four months were all normal by 12 months of age. No infant had any further investigation or required any splinting or surgical management.

Discussion. Clinical examination of neonates will identify 10 to 20 unstable hips per 1000 live births. This incidence is greater than the acknowledged incidence of CDH (Mac-Auley and McManus 1973; Dunn et al 1985; Bernard et al 1987; Bennett 1992). Despite this, late diagnosed cases have been reported in centres where specialised screening is performed for CDH, with an incidence varying from 0.4 to 2.0 per 1000 live births. Children with risk factors are in danger of ‘late’ dislocation, and it has become routine in...
some centres to take radiographs of these infants at four to seven months of age (Ilfeld, Westin and Makin 1986; Bernard et al 1987; Garvey et al 1992).

We undertook a retrospective review of all ‘at-risk’ children referred to our CDH clinic with a ‘suspicious radiograph’. None had any specific treatment and all of the hips had a normal acetabular index on the final hip radiograph. We support the view of Broughton et al (1989) that measurement of the acetabular index is a reliable method of determining the development of the acetabulum over time. In our series, although many children had evidence of acetabular dysplasia on their initial radiograph, all hips were normal by one year without any treatment. We believe therefore that the problem of children who present with late CDH will not be answered by concentrating on those ‘at-risk’ infants who have clinically normal hips at the time of the neonatal examination. Krikler and Dwyer (1992) reported that “no ‘at risk’ infant with a clinically normal hip has yet been shown to have an abnormality by ultrasound”. This supports our impression that clinical examination remains a reliable method for assessing hip stability in the at-risk infant. Our findings bring into question the routine four-month radiograph in a service with a well-developed screening programme. In our experience, this form of screening does not have any clinical value and cannot be recommended.

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REFERENCES


THE CENTRE-EDGE ANGLE OF WIBERG IN THE ADULT INDIAN POPULATION

S. MANDAL, S. BHAN

The centre-edge (CE) angle of Wiberg is a measure of the depth of the acetabulum and of the cover of the femoral head. Skirving and Scadden (1979) reported that in African hips the depth of the acetabulum relative to its diameter tended to be deeper than in other races and that this may account for the rarity of congenital dislocation of the hip in Africans. In Indians congenital dislocation is also rare and primary osteoarthritis of the hip is uncommon.

We present a study of the CE angle in adult Indian hips of various age groups and compare this with published studies of adult African and Caucasian hips.

Material and methods. We studied the anteroposterior radiographs of both hips of 131 adult Indians of various age groups. There were 80 males and 51 females aged between 18 and 73 years; 65% were between 20 and 40 years of age. The radiographs had been taken for other purposes and all the hips were reported to be normal.

We measured the CE angle using the method described by Wiberg (1953). All the measurements were made by one of the authors (SM), and we found that a repeatable accuracy to within half a degree was obtained.

Comparison of the angles was made between the right and the left hips and between males and females. The readings were also compared with the CE angles in African and Caucasian hips reported by Wynne-Davies (1970) and Skirving (1981).

Results. In 83% the CE angle was between 28° and 42° (Table 1). None of the hips had a CE angle of less than 20°, which denotes acetabular dysplasia. In four it was between...