Late presentation of congenital dislocation of the hip: an audit

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SUMMARY. Despite the widespread introduction of neonatal screening programmes, the late presentation of congenital dislocation of the hip remains a considerable problem. Important gaps in our understanding of the natural history of this condition make it difficult to assess the effectiveness of screening. An audit of late presenting cases of congenital dislocation of the hip in south Bedfordshire between 1980 and 1988 suggests that improved liaison between hospital doctors and general practitioners and closer scrutiny as children start walking could make screening more effective.

Introduction

CONGENITAL dislocation of the hip is one of the commonest congenital deformities of the locomotor system. It is estimated that among 1000 live births there is evidence of hip instability in 15 to 20 children, and of these approximately 10% will go on to show classic signs of dislocation.[1] Treatment after the first year of life results in a poorer prognosis and higher costs to the health service than earlier treatment.[2,3]

Ortolani described the clinical detection of hip dislocation in the newborn in 1937.[4] His manoeuvre, later refined by Barlow,[5] was subsequently adopted as a screening tool. Systematic screening programmes were introduced in many countries during the 1950s.[6-8]

However, there is considerable disagreement about the effectiveness of screening.[9,10] Numerous studies have demonstrated that screening reduces the incidence of late presenting cases of dislocated hips,[11] but population studies in the UK have failed to demonstrate any decline in the incidence of congenital dislocation of the hip requiring treatment since the introduction of screening.[12,13] Furthermore, analysis of screening studies has revealed no association between the frequency with which neonatal instability is treated and the prevalence of cases presenting late.[11,14]

Evaluation of the effectiveness of screening is hampered by two gaps in our understanding of the natural history of the condition. First, what proportion of unstable hips develop normally? The prevalence of hip instability in screened neonates is much higher than the prevalence of recognized dislocation of the hips in unscreened toddlers. Knox and colleagues estimate the ratio of false to true positives to be approximately 10:1.[12] Therefore, 10 infants may suffer unnecessary splinting for every one who benefits from the procedure and rigid splinting has been associated with cases of proximal capital epiphysitis.[15] The significance of the otherwise stable 'clicking' hip is still disputed.[16,17]

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Secondly, what is the prevalence of false negative cases? Most reports of screened populations refer to children in whom hip abnormalities were not detected on screening but who were later diagnosed as having dislocated hips. The reported prevalence of this group varies widely but averages about half the prevalence of dislocated hips in unscreened populations.[14] The number of false negative results of screening seems to be of the same order as the number of true positives.[14] In these false negative cases it is not known how often instability is present but missed at birth and how often it develops later. Ultrasonographic screening suggests that abnormalities may be clinically undetectable in about 0.2% of neonates.[18]

There have been two responses to this unsatisfactory state of affairs. It has been suggested that neonatal screening for this condition should be abandoned altogether and commenced instead at three months,[19] but Department of Health and Social Security guidelines recommend examination of the hips at every opportunity until normal walking is established.[20]

The aim of this descriptive study was to examine the reasons for late presentation of congenital dislocation of the hip.

Method

Between 1981 and 1988 all children referred to the orthopaedic outpatient department at the Luton and Dunstable hospital with hip dislocation or dysplasia presenting after the neonatal period were studied. This sample is unlikely to have included all children presenting with congenital dislocation of the hip within the south Bedfordshire health district because up to one third of orthopaedic referrals from general practitioners are to hospitals in London or elsewhere in the north west Thames region. For each child details of history, all examinations and subsequent progress were sought from hospital, maternity and community child health records and from health visitor and general practitioner notes.

Results

A total of 20 presented during the study period — all were girls. Recognized risk factors were present in eight cases: three children had a first degree relative with congenital dislocation of the hip, two had been born by caesarian section, two were breech deliveries and one child had other abnormalities.

In three cases there was no record of examination shortly after birth and a further seven cases had no record of examination after the neonatal period. The remaining 10 children had received between three and six developmental assessments prior to diagnosis.

Of the 17 children examined at birth, four were found to have abnormal hips. In two of these four children the abnormalities were judged to have resolved on further investigation but they re-presented before the children were one year old. The other two children were not followed up in the outpatients department and they returned at eight months and three years, respectively. Among the remaining 13 children with no abnormality found at neonatal examination, two were found to have abnormalities at the age of 18 months — one child's parents refused referral and one was not referred. Thus a total of six children presented with abnormalities, on average 13 months prior to diagnosis.

Seven of the 20 children were diagnosed as having congenital dislocation of the hip when they started to walk, while five were

diagnosed before they started to walk. The remaining eight children presented between eight and 38 months after walking (mean 22 months). All but one child had been seen for other problems in the interim. Most of these children had lengthy histories of limping or pain and for five the onset of symptoms dated from the time of walking.

Discussion

This study identified three possible and remediable reasons for late presentation of congenital dislocation of the hip: failure to screen, failure to follow up identified abnormalities and failure by parents and/or health professionals to appreciate the significance of symptoms and signs. Only three of the 20 children had no record of hip examination at any stage but seven had not been adequately screened. How far failure to screen contributed to late presentation is difficult to determine.

The absence of recorded evidence does not mean these children were not examined. However, different personnel may perform routine hip examinations and this can induce a false sense of security in the examiners, each believing the examination has been carried out by someone else. Staff in positions associated with regular turnover — paediatric senior house officers, health visitors, community midwives — need regular training. An emphasis on the Ortolani-Barlow manoeuvre (useful up to the age of three months) may distract from the importance of examining for limited or asymmetric abduction of the hip in the late neonatal period and infancy.[21] Staff should also be aware of the recognized risk factors for congenital dislocation of the hip: female sex, first born, family history of congenital dislocation of the hip, breech presentation, other congenital postural deformities, birth by caesarian section, oligohydramnios and fetal growth retardation. However, in 40% of affected children no risk factors are found.[20]

This study revealed that one fifth of the children presenting late with congenital dislocation of the hip had abnormalities noted at birth. This agrees with the findings of David and colleagues.[22] The trend towards earlier postnatal discharge from hospital increases the risk that parents may be inadequately informed about congenital dislocation of the hip or leave without appropriate follow-up arrangements. In this study failure to impress upon parents the significance of abnormal findings and poor liaison between community medical staff and general practitioners resulted in delayed referral in two further cases.

While two separate disease entities have been suggested, it is generally assumed that the unstable hip of the neonate and the dislocated hip of the toddler are early and late stages of the same process.[12] Two fifths of the children in this study presented as established walkers, most with long histories of limping or pain. This again emphasizes the need for heightened awareness on the part of parents and health professionals. In Sweden the most successful programmes have been carried out in hospitals at which one or two senior staff have a special interest in examining hips.[23]

There is a tendency to view all late presentations of dislocated hips as failures of screening. Not all such cases can be prevented but careful attention to organizational factors and regular surveillance until after the child starts walking may bring some to specialist attention sooner.

The new contract[24] is likely to increase the amount of developmental surveillance carried out by general practitioners. The Joint Working Party on Child Health Surveillance[25] recently endorsed the Department of Health guidelines[20] recommending examination at the following times: within 24 hours of birth, between seven to 10 days, at six weeks, between six and nine months, 18 and 24 months and at three years. District health authorities should have a clear policy on screening for congenital dislocation of the hip which should define who is responsible for examining children at each stage in their development and set out training requirements. An officer should be designated to monitor the whole programme.[26]

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