

Late diagnosed congenital dislocation of the hip

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During the years 1975 to 1979, 82 574 children from five counties in southeast Norway were live-born, 197 of whom were treated for late detected CDH, for an incidence of 2.4 per 1 000 live births, i.e., 0.4 promille dislocation, 0.6 promille subluxation, and 1.4 promille dysplasia of the acetabulum without dislocation. All the hips had been found stable at birth. Eighty-six percent were girls, and the left hip was affected in 48 percent, the right hip in 31 percent, and both hips in 21 percent. Only 6.5 percent were delivered in the breech position. This and the stability found neonatally may indicate an etiologic difference between neonatally and late diagnosed CDH.

The incidence in Norway of congenital dislocation of the hip (CDH) diagnosed after 1 month of age has been reported earlier (Bjerkreim 1974, Cyvin 1977, Bjerkreim & Årseth 1978). It was higher than in Malmö, Sweden (von Rosen 1962, Fredensborg 1976) and in Edinburgh, Scotland (Mitchell 1972). From other regions of Sweden (Palmén 1980) and from many other centers, a high incidence has also been reported (McKenzie 1972, Williamson 1972, MacAuley & MacManus 1973, Jones 1977, Catford et al. 1982, Dunn et al. 1985). We now add a new 5-year period to our incidence study, which started in 1960.

Patients and methods

One hundred and ninety-seven children with late diagnosed CDH were born in the years 1975 to 1979 inclusive, 172 of whom were treated at our hospital and 25 in other orthopedic departments in the five counties investigated (Akershus, Oslo, Hedmark, Oppland, and Buskerud). Children from other counties were excluded. The total number of live-born in our region during the period was 82 574. The hospital records and all radiographs were reexamined. Cases without obviously pathologic radiographs were excluded.

Results

The incidence of late diagnosed CDH was 2.4 promille; 35 (0.4 promille) had dislocation, 46 (0.6 promille) subluxation, and 116 (1.4 promille) dysplasia without dislocation (Table 1). The female predominance was 86 percent, 6.5 percent had been a breech presentation. The left hip was affected in 48 percent, the right in 31 percent, and both hips in 21 percent.

The age at diagnosis varied from 2 to 21 months; 15 were more than 1 years old, 74 between 6 and 12 months, and 108 between 2 and 6 months of age. The mean age at diagnosis was 6 months throughout the 5-year period.

Most of the cases (61 percent) were detected at the child welfare clinics, in 17 percent the presence of risk factors – family occurrence, congenital foot deformities, or breech presentation – contributed to the diagnosis. In 12 percent, parents or relatives had noticed suspicious signs of a hip disorder and the other cases were referred by a general practitioner or pediatrician.

Discussion

The incidence of late diagnosed CDH in southeast Norway has been fairly constant since 1960, and the incidence of dislocation and subluxation was the same as in the previous 5-year period (Bjerkreim & Årseth 1978). The incidence of late

Table 1. The incidence of late diagnosed CDH in five counties in southeast Norway 1976 to 1979

	Live births 1976-1979	Late diagnosed CDH			Total
		Dislocation	Subluxation	Dysplasia	
No	82 574	35	46	116	197
‰		0.4	0.6	1.4	2.4

diagnosed CDH (dislocation and subluxation) varies widely, from 0.2 promille in Malmö (Palmén 1980) to 1 promille in Ireland (Williamson 1972), Scotland (McKenzie 1972), Norway (Bjerkreim & Årseth 1978, Cyvin 1977), and England (Catford et al. 1982). The differences between Norway and Sweden may, however, to a great extent, be due to differences in registration and definition. In Sweden the incidence has increased from 1959, and in 1979 Danielson et al. (1983) found an incidence of 1 promille for the entire country, suggesting an insufficient reporting of late detected CDH in earlier years. Moreover, only about 20 per cent have acetabular dysplasia in Sweden compared with more than half in Norway. The incidence of neonatally diagnosed CDH in Sweden is not lower than in Norway; Danielson et al. (1983) reported 12 per 1 000 live births for Sweden compared with 9 in Norway in the same region and period as in this study (Medical Birth Register of Norway). Thus, a total of 11 out of 1 000 live-born were treated for CDH, and we do not think that there is any difference in the incidence of CDH between Norway and other countries.

The percentage of breech presentation was low, 6.5 percent, as found by others (MacAuley & MacManus 1973, Cyvin 1977, Bjerkreim & Årseth 1978, Palmén 1982, Dunn et al. 1985). In

neonatal cases the incidence of breech presentation is reported to be from 16 to 25 percent.

The fact that there is a difference in at least one etiologic factor (breech presentation) and the fact that the hips of all newborns were examined, many both by experienced pediatricians and orthopedists, has led us to assume that all the cases of CDH cannot be detected at birth and that there may be two types of CDH, one detectable at birth because of hip instability and the other probably not present at birth with progressive dysplasia of the acetabulum and dislocation developing during the first months of life. In the latter group postnatal environmental factors may be of significance for the manifestation of the hip disorder (Bjerkreim & van der Hagen 1974). This theory has been supported by others (Wynne-Davis 1970, Walker 1971, Illingworth 1978, Catford 1982).

Many cases of CDH are not detected or detectable at birth by physical examination or radiographs. Sonography is promising (Dahlström et al. 1986) but not yet a routine in most hospitals. Therefore, the hips of all infants should be examined by the abduction test at regular intervals, i.e., at 2, 4, and 6 months of age. In this way the great majority of the "missed" cases will be detected during the first 6 months of life.

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