Acta orthop. Scandinav. 37, 311–316, 1966

From the Department of Orthopaedic surgery, University of Lund.
Surg. in Chief: Prof. G. Wiberg.

SOME NEW ASPECTS OF THE TREATMENT OF CONG. DISLOCATION OF THE HIP (CDH) ACCORDING TO PALMÉN–VON ROSEN

By

HANS EMNÉUS

Received 14.i.66

Early diagnosis (*Ortolani* 1948) and prompt treatment (*von Rosen* 1956 and *Palmén* 1961) are now the rule in congenital dislocation of the hip (CDH) in newborns in Sweden.

According to *Andrén & Borglin* (1961), in CDH the excretion of oestrone and of oestradiol in the urine is increased during the first 6 days of life. *Andrén* (1962) demonstrated the presence of instability of the pubic symphysis in newborns with CDH. It appears that the hip joints are not stable either. This instability is no longer demonstrable after the sixth day of life. This prompted us to modify our principles of examination and treatment of newborns for CDH. While we formerly examined all suspect CDH roentgenographically, since 1961 we have relied on the clinical diagnosis. This modification was decided upon in collaboration with our chief radiologist (Dr. O. Norman), We always use the abduction frame at the slightest suspicion of CDH, but we have shortened the period of treatment to 6 weeks.

These modifications are based on the following grounds.

Some patients are referred to us from hospitals in small towns in the south of Sweden (Trelleborg, Ystad, Hörby and Landskrona). Many of these children are 5–6 days old or even older when first seen by us at the department of Orthopaedics, Lasarettet, Lund. Only one of these small hospitals has a department of paediatrics. In the others the diagnosis is made by the senior surgeon or his assistants.

If a case of CDH is suspected at any one of these hospitals and referred to us, and we cannot elicit a clicking sound by forced abduction, roentgenographic confirmation or exclusion of the condition would

require attempted dislocation of the hip, a procedure we consider inadvisable. We therefore decided to rely on the diagnosis made at the local hospital even if we cannot verify the click and to place the child in an abduction frame for 6 weeks. According to our radiologists (Dr. Norman), the first roentgen examination should be made when the child is 4–5 months old. The ossification centres of the proximal femora are then readily recognized and the roentgen examination offers no difficulties.

Since 1961 the following scheme has been used.

1. Examination of all newborns for CDH by the paediatrician or the surgeon in charge of the maternity ward.
2. Prompt transfer of all infants with suspect CDH to the department of Orthopaedics, Lasarettet, Lund, for examination by an experienced orthopaedic surgeon.
3. Irrespective of the clinical findings the child is placed in an abduction frame (von Rosen or modified type).
4. Re-examination 3 weeks later to check that the frame is properly applied and that the mother is co-operating.
5. After a further 3 weeks: removal of the frame and clinical examination of the hips.
6. Roentgen examination of the hips:

a) when the child is 4–5 months old,
b) again when the child is 1 year old or has begun to walk, and then
c) again one year later.

We have found this scheme satisfactory. *It appears that all these children have developed normal hips, although some of them were less than one year of age at the follow up. No child born in the county of Malmöhus during the years 1961–1964 has appeared at about the age of one with a subluxated or luxated hip.*[*]

It is obvious that our scheme carries a certain risk of overdiagnosis, especially if the examiner is less experienced. Our material consists of 63 patients (41 from the maternity department, Lasarettet, Lund, 3 from Trelleborg, 12 from Landskrona, 2 from Ystad and 5 from Hörby).

The clinical diagnosis was said to be *confidential* or certain when the examiner at the orthopaedic department in Lund could elicit a "click" on forced abduction of the hips. Otherwise it was said to be uncertain.

---

[*] While this paper was being prepared for the press, however, one case was missed in a child born in January, 1965. This case will be the subject of a separate paper.

The discrepancy between the results of the primary examinations and the re-examination at Lund can be explained by several factors, particularly by the difference in the age of the children at the time of the two examinations. Thus, the average age of the children in whom the diagnosis was *confidential* was 2.4 days, compared with 6.4 days for those in whom the diagnosis was uncertain (Table 1). This is in accord with the finding by *Andrén & Borglin* that the pubic pelvis becomes stable and the hormone balance normal on the fifth or sixth day of life. The diagnosis of CDH was *confidential* in 36 children. Of these, 27 had been born in Lund, 1 in Trelleborg, 1 in Hörby and 7 in Landskrona (Table 2).

Table 1. Mean age (days) of patients on arrival at the outpatient department of the orthopaedic department for treatment in a frame.

Places of birth	Lund	Lands-krona	Trelleborg	Ystad	Hörby	The whole material
Uncertain dislocations	3.5	5	2.5	13	12.5	6.4
Certain dislocations	1.5	5	6	–	7	2.4

Table 2. Places of birth and number of certain and uncertain dislocation 1961–1964.

Hospital in the town of	Lund	Lands-krona	Trelleborg	Ystad	Hörby
Number of uncertain dislocations	14	5	2	2	4
Number of certain dislocations	27	7	1	0	1
Total	41	12	3	2	5

During the last 4 years the frequency of diagnosed CDH has varied widely (Table 3). We can offer no explanation for this variation. Since no cases in the district covered by Lund or the aforementioned small hospitals have been referred to other large hospitals, *e.g.* Malmö and Hälsingborg, the cases seen at Lund must be representative of the entire district catered for by the Lasarettet, Lund. The patients' ages at the time of admission to the orthopaedic department in Lund are given in Table 4.

Table 3. Number of cases of dislocation of the hip in the district of Malmöhus excluding the towns of Malmö and Hälsingborg.

Year of birth	Clinically uncertain	Clinically certain
1961	9	12
1962	7	6
1963	5	12
1964	6	6

Table 4. Children's age (days) at first examinations at the department of orthopaedics in Lund.

Age in days	<1	1	2	3	4	5	6	7	8	9	12	13	16	20	23	25
Number of uncertain dislocations	5	0	6	2	2	2	2	1	0	1	1	1	1	1	1	1
Number of certain dislocations	3	12	8	5	2	2	2	1	1	–	–	–	–	–	–	–

Table 4 shows that 28 out of 36 children with certain CDH were examined within the first 3 days of life. Concerning children with uncertain CDH it appears that spontaneous reposition can occur within the first week of life or that it is very difficult to diagnose after this age or that there is an overdiagnosis.

The frequency with wich the condition is diagnosed at the various hospitals is given in Table 5, from which it is obvious that in the small hospitals this frequency is low. Since the condition may be easily missed, we think that a certain overdiagnosis is justified, especially in small hospitals. This is why we treat all children with suspect CDH in a frame whether later check-examination by the orthopaedic surgeon can produce Ortolani's click or not.

SUMMARY

Since 1961 all newborns referred to the Department of Orthopaedics, Lasarettet, Lund because of suspect congenital dislocation of the hip are placed in an abduction frame for 6 weeks whether Ortolani's click can be produced or not on admission to our department. In other words, we rely on the result of the primary examination soon after birth, even

Table 5. Number of viable infants born at 5 Scanian hospitals and number of certain and uncertain cases of dislocation of the hip.

	Lund			Landskrona			Trelleborg			Ystad			Hörby		
	Number of viable infants	Certain disloc.	Uncertain disloc.	Number of viable infants	Certain disloc.	Uncertain disloc.	Number of viable infants	Certain disloc.	Uncertain disloc.	Number of viable infants	Certain disloc.	Uncertain disloc.	Number of viable infants	Certain disloc.	Uncertain disloc.
1961	2.633	10	6	461	0	0	390	1	2	277	0	0	188	1	1
1962	2.670	5	3	488	1	1	352	0	0	278	0	1	121	0	2
1963	2.823	8	3	510	4	1	480	0	0	261	0	0	128	0	1
1964	3.249	4	2	528	2	3	473	0	0	283	0	1	45	0	0

though it may mean a certain degree of overdiagnosis. As far as we know from 1961 to the end of 1964 no cases of CDH have escaped detection and treatment.

RESUME

Depuis 1961 tous les nouveau-nés envoyés au Service Orthopédique de l'hôpital de Lund parce qu'on soupçonnait chez eux une dislocation congénitale de la hanche ont été placés dans un cadre d'abduction pendant six semainer, qu'il ait été possible de produire ou non le ressaut Ortolani à leur admission dans notre Service. En d'autres mots, nous fondons sur le résultat de l'examen primaire immédiatement après la naissance bien qu'il puisse s'agir à un certain degré d'un superdiagnostic. Pour autant que nous le sachions, de 1961 à la fin de 1964, aucun cas de dislocation congénitale de la hanche n'a échappé à notre attention et au traitement.

ZUSAMMENFASSUNG

Seit 1961 werden alle Neugeborenen, die an das orthopädische Lazarett in Lund wegen Verdacht auf kongenitale Hüftverrenkung gewiesen werden, in einen Abduktionsrahmen für 6 Wochen gelegt, gleichgültig ob das Ortolanische Zeichen bei der Aufnahme an unsere Abteilung nachgewiesen werden kann oder nicht. Mit anderen Worten, wir verlassen uns auf die primäre Untersuchung gleich nach der Geburt, obwohl das einen gewissen Grad von Überdiagnose bedeuten kann. So weit wir wissen ist von 1961 bis Ende 1964 kein Fall von angeborener Hüftverrenkung unentdeckt oder unbehandelt geblieben.

REFERENCES

Andrén, L. (1962) Acta radiol. Suppl. 212.
Andrén, L. & Borglin, N. E. (1961) Acta endocrin. **37**, 423 and 427.
Ortolani, M. (1948) La lussazione congenita dell'anca, Capelli, Editore, Bologna.
Palmén, K. (1961) Acta paediat. **50**, Suppl. 129.
von Rosen, S. (1956) Acta orthop. scand. **26**, 136.