

Department of Orthopaedics of the Ludwik Rydygier University School
of Medical Sciences in Bydgoszcz
University Pediatric Orthopaedic and Rehabilitation Department
Medical University of Lublin

STANISŁAW JUNK, SEBASTIAN PIETRZAK, PIOTR J. BILŃSKI,
JACEK KARSKI, JAROSŁAW KAŁAKUCKI,
TOMASZ M. KARSKI, MIROŚLAW MIAZGA

*The reasons of late diagnosed developmental hip dislocation
in childhood*

The early diagnosis of hip dysplasia (according to Bjerkreim (1974) not later than until the end of the 3rd week of the life of a child) in most cases enables a successful conservative treatment. Yet, despite the preventive programs there are still some cases of late diagnosed developmental dislocation of the hip (DDH). The authors analysed documentation of children admitted to the Orthopaedic Department of the University Hospital in Bydgoszcz-Poland and to the Pediatric Orthopaedic and Rehabilitation Department of the Medical University of Lublin-Poland.

CASE REPORT. MATERIAL AND METHODS

The hospital histories of 13 children admitted to the Orthopaedic Department in Bydgoszcz due to the developmental hip dislocation between 1997-1998 and of 25 children admitted to the Pediatric Orthopaedic and Rehabilitation Department in Lublin in the years 1999-2000 were reviewed. There were altogether 31 girls and 7 boys. The age of the children varied between 6 months and 17 years at admission to the hospital in Bydgoszcz. The age of the children in the Lublin group varied from 4 months to 18 months. In Lublin we analysed only the group treated by "over head extension", operated children were excluded from this study. The age of the children when the diagnosis was set varied from 3 months to 24 months. The data about the type of the labour, the method of diapering, call up in paediatrics and orthopaedics, previous treatment and parents education status were collected on the basis of anamneses from hospital documentation and the questionnaire filled up by parents.

In the last years in all Paediatric Orthopaedic Departments in Poland the number of children admitted for the conservative and operative treatments of DDH has increased. It is strange and alarming because the preventive activities of the Polish orthopaedic surgeons and the usage of the sonography have also increased. In the article we would like to answer the following questions: 1) What kind of diapering of newborns is practised in Polish newborn-wards and later at home? 2) What is the level of pediatric-orthopaedic education in Polish society – parents, grand-parents? 3) What is the level of orthopaedic education among pediatricians, family doctors, pediatric surgeons, rehabilitation doctors? 4) Are the parents well informed about the newborns nursery and diapering? 5) Is the time of directing the children with diagnosed dysplasia, subluxation or luxation to the orthopaedic surgeons right or wrong, it means – too late?

RESULTS

The children from the Bydgoszcz group were all born in maternal departments of the hospitals in the Bydgoszcz region. In five children the pediatrician took concern about abnormalities and necessity of calling up the orthopaedist. Three children were treated by quack, however all the children were regularly controlled in the outpatient clinics for the infants by pediatricians. Seven parents waited for orthopaedics consultation more than 2 months. Six mothers described that they had difficulties to get to orthopaedics surgeon. In five patients the parents were worried of some clinical signs. Five children were diapered tightly. Sixteen out of 25 parents had primary school education. Eleven mothers (out of 13) assessed their knowledge of DDH as poor.

The analysis of the material in the Lublin group showed that 25 children with subluxated or even luxated hip were admitted for the "over-head" extension treatment to the Pediatric Orthopaedic Department. Nine children were sent to the Department by pediatricians and five by other specialists. The remaining 11 children were brought to the Department by parents who noticed some abnormalities.

Further analysis of the material proved that the following are to blame for the late diagnosis: pediatricians in nine cases, orthopaedic surgeons in two cases, family doctors or other specialists in five cases, parents in seven cases because of delaying of the proper treatment, primary quack treatment in two cases. The incorrect information provided by different doctors caused the development of dysplasia and later leading to hip subluxation or luxation in 16 cases. The parents were advised to carry a child backwards in front of themselves without the hips in abductions. This is in accordance with the rules of the "new and modern" rehabilitations advice to let the children "observe the world". Other cases of the insufficient development of the hip joint and later sub- or luxation is the usage of "baby-carriers" which do not provide sufficient abduction of the hip and even press the nerves and muscles too tight.

In the Lublin group only four out of 50 parents had a high school education. The parents' knowledge of DDH in all Lublin cases as well as in Bydgoszcz was described as poor.

DISCUSSION

The importance of early diagnosed and treated hip dysplasia cannot be overestimated. The fixture of child's hip is settled within the first 4 months of life (4, 8, 11) or in the first 12 months of life (Karski, Graf and Schuler). The early-diagnosed hip dysplasia is in vast majority of cases treated successfully. The introduction of screening program reduced visibly the number of surgical procedures in the children (5). The children in the study in Bydgoszcz were not covered by such a system. Effecting 20th January 2000 all the infants can be directly sent to special outpatient units for the prevention of hip dysplasia. There, the child is examined clinically and by ultrasound and, if necessary, the treatment is introduced. The previous situation virtually with no system at all was characterized by relatively high number of children with late diagnosed hip dysplasia or dislocation.

A relatively high number of such late diagnosed children was reported by David et al. (2). His analysis shows that the hip examination was not done in 23% of newborns. From among 10 children with hip instability symptoms seven were not carefully followed-up in the early infancy period. The overlooked radiological signs of hip dysplasia were also found in that study. The children in our study had a control visit in Public Health System outpatients units where they were regularly examined by pediatricians. Dunn and O'Riordan (3) and Macnicol (12) stress out that the clinical hip examination should be performed by a small group of neonatologists with big experience. The rate of late diagnosed hip dislocation is reported from 30% to 50% of all the children with DDH (6, 10, 12, 14). Hazel et al. (6) report on five children diagnosed at walking age.

The problem of hip screening projects is resolved in different ways depending on the country. So far only Austria and Germany have introduced the obligatory clinical and ultrasound infants hip

examination (4, 5). The optimal program would include the newborns assessment in maternal wards and a repeated examination in the 3rd–8th week performed by the same well experienced physician. Such system is expensive and often impossible to be introduced. However, it seems possible to select some doctors in maternal wards and outpatients units who could do routinely hip screening. These pediatricians should participate in the instructional courses first. In Lublin (8, 15) we claim that the educational program concerning hip dysplasia diagnosis should be the part of national board in pediatrics programs. This policy is supported by Macnicol (12) who found that the number of neonates with hip dysplasia missed by well experienced doctors was significantly lower than that by their young inexperienced colleagues. There are still controversies if the decisive ultrasound examination should be done in the first days of life (5, 14, 15) or it could be postponed till the end of the 6th–8th week of life (7). Those who advocate the later ultrasound assessment point out that the primarily unstable hips become stable and develop correctly in most cases (13). We think that all the children with hip instability in their first day of life must be under careful control in the next three months or longer. Yngve and Gross (16) are less optimistic when reporting that late diagnosed dysplasia of the infants hip is almost impossible to eradicate.

The low or none knowledge of importance of hip dislocation prophylactics among the parents is characteristic in both reported groups. The role of parents is regarded as the second main cause of late diagnosed hip dislocation (2). It is crucial to convince parents about the hazards of heavy impairment, the necessity of treatment and to fix the appointment of the next follow-up. Under no circumstances can the child wait for weeks to be seen by a specialist. In the Lublin group we did not find any cases of this situation, although they were reported in Bydgoszcz.

We have not found a report on the educational level of parents of the children with late diagnosed hip dislocation. In our group most of the parents had primary education; they assessed their knowledge on the hip problem before the admittance of their child to the hospital as small. In the region of Bydgoszcz until now there were no information brochures available on hip dysplasia. In the Lublin region information brochures on DDH written by Wośko (15) can be found and more recently by Karski in 2000 (9). It is interesting that there was only one child in Bydgoszcz and two in Lublin with family history of hip problem. We explain this by special care and attention in such families. On the other hand, in the case with late diagnosed hip dislocation and family history the parents were delaying the treatment because they were doubtful of good outcome of the treatment. The fact that some of the parents addressed to the quack is not only the social aspect alone. This is another proof of the failure of public health system in preventing the developmental dislocation of the hip.

CONCLUSIONS

1. In the epidemiological analysis conducted in both regions the occurrence of hip dysplasia is 5% and dysplasia with instability of the hip is 1.2%.

2. In our material of DDH we notice 80% at girls and 20% at boys, left hip was affected in 62%, both hips in 21%, right hip in 17%, family occurrence of DDH at 1.2%.

3. The analysis of late diagnosed DDH shows that the main group of late diagnosed hip subluxation or luxation occurs because of poor qualified pediatricians, home doctors and insufficient education of parents.

4. In the Lublin region we observed 6% of children with luxated hips treated for some weeks or even months through abduction apparatus but without reduction of the hip. This is caused by underestimation of pediatric orthopaedics in Poland and unsatisfactory education and qualifications of orthopaedic surgeons.

5. We see an urgent necessity to develop the pediatric orthopaedics in Poland and even to create the speciality of “pediatric orthopaedics surgery”.

REFERENCES

1. Bjerkreim I.: Congenital dislocation in the hip joint in Norway. A clinical-epidemiological study, A/S Holstad-Trykk, Oslo, 1, 1974.
2. David T. J. et al.: Reasons for late detection of hip dislocation in childhood. *Lancet*, 16, 147, 1983.
3. Dunn D. M., O'Riordan S. M.: Late diagnosis of congenital dislocation of the hip. *Dev. Med. Child Neurol.*, 23, 202, 1981.
4. Graf R., Schuler P.: *Sonographie der Sauglingshufte*, Ferdinand Enke Verlag, Stuttgart, 135, 1989.
5. Grill F., Mueller D.: Results of hip ultrasonographic screening in Austria. *Orthopade*, 26, 25, 1997.
6. Hazel J. R., Beals R. K.: Diagnosing dislocation of the hip in infancy. *West J. Med.*, 151, 39, 1989.
7. Jones D. et al.: At the crossroads – neonatal detection of developmental dysplasia of the hip. *J. Bone Joint Surg. Br.*, 82, 160, 2000.
8. Karński T.: Wczesne leczenie wrodzonej dysplazji stawu biodrowego: *Chir. Narz. Ruchu Ortop. Pol.*, 63, 91, 1988.
9. Karński T.: Informacje o działalności naukowej Kliniki Ortopedii Dziecięcej, In: 30 Lat Kliniki Ortopedii Dziecięcej AM w Lublinie, *Folium*, 46, 2001.
10. Kernohan W. G. et al.: Sensitivity of manual palpation in testing the neonatal hip. *Clin. Orthop.*, 294, 211, 1993.
11. Łempicki A., Wierusz-Kozłowska M.: Uwagi w sprawie zasad rozpoznawania i wczesnego leczenia wrodzonego zwichnięcia stawu biodrowego. *Chir. Narz. Ruchu Ortop. Pol.*, 56, 29, 1991.
12. Macnicol M. F.: Results of a 25-year screening programme for neonatal hip instability. *J. Bone Joint Surgery Br.*, 72, 1057, 1990.
13. Malkawi H.: Sonographic monitoring of the treatment of developmental disturbances of the hip by the Pavlik harness. *J. Pediatr. Orthop. Br.*, 7, 144, 1998.
14. Tschauer C. et al.: Hip dysplasia-morphology, biomechanics and therapeutic principles with reference to the acetabular labrum. *Orthopade*, 26, 89, 1997.
15. Wośko I.: Propozycje organizacyjne powszechnej profilaktyki wrodzonej dysplazji stawów biodrowych u dzieci, *Chir. Narz. Ruchu i Ortop. Pol.*, LVII, Suplement 3, 113, 1992.
16. Yngve D., Gross R.: Late Diagnosis of Hip Dislocation in Infants. *J. Pediatr. Orthop.*, 10, 777, 1999.

SUMMARY

The aim of the study was to analyse the reasons of late diagnosed developmental dislocation of the hip (DDH). In Bydgoszcz and in Lublin together, it was the paediatrician who noticed first the necessity of calling up the orthopaedist in case of 21 children. Twelve parents waited for orthopaedics examination for more than 2 months and these parents claimed that they had difficulties in contacting the orthopaedics surgeon. Five children were treated by quacks, however all the children were regularly controlled in outpatients clinics. In 16 children the parents were the first to notice some clinical abnormalities. Nineteen children were diapered tightly. The children in our study were not covered by any orthopaedic preventive system but had regular pediatric control in public outpatients units. The parents in the reported group had low or none knowledge of the prophylactics of hip dislocation. It is crucial to convince the parents about the hazards of heavy impairment, the necessity of treatment and to fix the appointment of the next follow-up. Under no circumstances can the child wait for weeks to be seen by the specialist. Such cases were reported in the Bydgoszcz group. We have not found a report on the educational level of the parents of the children with late diagnosed hip dislocation. In our group most of the parents had primary educa-

tion; they assessed their knowledge on the hip problem before the admittance of their child to the hospital as insufficient.

Przyczyny opóźnień w rozpoznaniu wrodzonego zwichnięcia stawu biodrowego u dzieci

Analizę oparto na materiale 13 dzieci leczonych w Klinice Ortopedycznej AM w Bydgoszczy w latach 1997–1998 oraz 25 dzieci przyjętych do Kliniki Ortopedii Dziecięcej i Rehabilitacji AM w Lublinie w latach 1999–2000. Analizowano dzieci leczone wyciągiem *over-head*. Nie podlegały analizie dzieci operowane. Przeanalizowano czynniki etiopatogenetyczne w zależności od typu wady – a) w „zespolu przykurczów”, b) przy wadzie bioder wiotkich. Autorzy opisują czynniki epidemiologiczne i patogenetyczne rozwoju wrodzonej dysplazji stawu biodrowego. Rozpoczęcie działań profilaktycznych lub prawidłowego leczenia powinno nastąpić najpóźniej do trzeciego tygodnia życia dziecka. Wśród czynników istotnych w rozwoju wrodzonego zwichnięcia biodra autorzy wymieniają niekompetencję leczących, szkodliwości wynikające z tzw. „nowoczesnej” pielęgnacji dzieci oraz niekonsekwencje i nieprawidłowości leczenia z winy rodziców. Zarówno w Lublinie, jak i w Bydgoszczy w analizowanych okresach wzrosła liczba dzieci leczonych.