Acta orthop. scand. 45, 746–751, 1974

Department of Orthopedic Surgery, Gävle Sjukhus, Sweden.

TRAUMATIC DISLOCATION OF THE HIP IN CHILDREN

Report of Two Cases

L. HOVELIUS

Accepted 8.iv.74

Traumatic dislocation of the hip is very rare in children (Blount 1955). A material of 59 cases, most of them from the literature, was reported by Choyce in 1924 and about 350 cases have been published since then (Pearson & Mann 1973) but there are still not enough examples to yield definite percentages for the incidence of complications and so on (Freeman 1961). By circularizing 340 British orthopedists and adding 5 cases of their own, Glass & Powell (1961) collected 47 cases with an observation time of more than six months. In the Scandinavian literature, 76 traumatic hip dislocations have been described by Paus (1951), 19 of them in children. It is unusual for the dislocation to recur. A case with two recurrences has been reported by Gaul (1973), who was able to find only 12 other definite cases of this type in the literature.

Of the two cases presented here, case 1 was treated at this hospital and case 2, which recurred once, received primary treatment at another hospital.

CASE REPORTS

Case 1

A 3-year-old boy who knocked his right hip while riding on a tea-tray in the snow. Examination at this hospital the same day revealed impaired mobility in the hip. The patient lay with a slightly shortened, flexed leg with some inward rotation. X-rays revealed backward dislocation (Figure 1 a and b) and reduction was easily performed under anesthesia. After two days in bed, the patient was mobilized with a full load on the injured leg. An examination more than 1½ years after the injury showed no subjective complaints and an entirely normal clinical and radiographic picture.

Case 2

A boy, now 14 years old, who fell while skiing at the age of 12 and knocked his right hip. He was admitted to the local hospital the same day and X-rays showed

Figure 1 a. Case 1. Frontal projection showing right-sided luxatio coxae.

Figure 1 b. Case 1. With the hip rotated forwards, the neck of the femur projects laterally, indicating posterior dislocation.

backward and upward dislocation of caput femoris (Figure 2). Reduction under anesthesia caused no difficulty and the patient was kept in bed for 3 weeks. Nothing of note was observed during a walking test at a check-up after 1½ months.

Less than 3 months after the first dislocation the patient was tripped up and fell directly on the right hip. The resultant dislocation proved less easy to reduce

Figure 2. Case 2. Right-sided hip dislocation after the first accident.

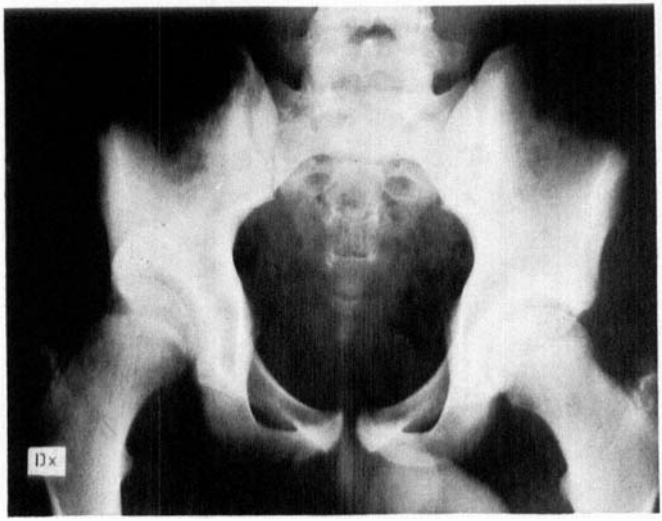

Figure 3. Case 2. Two years after the second accident the neck of the right femur has clearly increased its size compared with the left.

because the head of the femur tended to dislocate once more. Traction was therefore applied to the tibia for 5 weeks. The position of caput femoris appeared satisfactory in X-rays taken after this reduction but tomography revealed a small posterior acetabular fragment. A further radiographic examination about 1 month after the patient had been mobilized indicated latero-proximal subluxation of caput femoris.

At an examination 2 years after the second accident the patient reported slight discomfort in the hip in the form of pain after a great deal of physical exercise. Hip mobility called for no comment. Trendelenburg's sign was not present and the patient did not limp. X-rays showed status quo regarding the position of caput femoris and the acetabular fragment had healed in well. The head and, in particular, the neck of the femur on the injured side displayed greatly increased growth, the neck being 10 mm wider than on the left side (Figure 3). There were no signs of caput necrosis and no indication in the upright position of cartilage reduction.

DISCUSSION

Traumatic dislocation of the hip is relatively common among adults but rather rare in children. In many young patients the cause may be a trivial trauma (Glass & Powell 1961).

Hip dislocations are divided anatomically into posterior and anterior. In a review of traumatic dislocations in adults, Lamke (1970) found 102 posterior and 8 anterior. In children, however, it seems that the dislocation is almost always posterior (Freeman 1961, Glass & Powell 1961 and Schlonsky & Miller 1973).

There is general agreement about the immediate treatment of these dislocations—reduction as soon as possible under anesthesia—but opinions differ somewhat as to the manner and duration of immobilization. A hip cast for 4–6 weeks and no loading for the first 2–3 months are recommended by Freeman, whereas Schlonsky & Miller as well as Pearson & Mann hold that early loading does not appear to increase the number of complications. Lamke found that in adults the injured hip could be loaded after only 2 weeks.

The most likely complication is caput necrosis. In the 47 cases collected by Glass & Powell, avascular caput necrosis was noted in 4, arthrotic changes in 3, premature epiphyseal ossification in 1 and caput enlargement in 6. They found no other mention of the last of these changes; neither has it been reported more recently after hip dislocation.

The chief predisposing factor for complications is held by Glass & Powell to be age, because the avascular and arthrotic changes in particular usually followed dislocation in persons who were more than 10 years old. In adults the incidence of caput necrosis after dislocation is variously reported to be between 5 and 30 per cent. Lamke found 8 cases of necrosis among 110 dislocations.

As already mentioned, relatively few cases of re-dislocation have been reported in children (Gaul 1973). Other cases have been published

which are not included in Gaul's review (Body 1969, Masse & Florent 1964, Gula 1972). Re-dislocation occurred twice in Gaul's own case even though a primary hip cast had been applied for 6 weeks. Subsequent surgery revealed that the posterior part of the capsule had broken away from the acetabular margin and a synovial pocket had formed. The edges of the capsule were re-adapted and there was no further recurrence. Similar findings at surgery for recurrent traumatic dislocation in children have been described by, for instance, Aufranc et al. (1964) and Body (1969).

Symptoms of complications generally occur within 10 months (Freeman), though avascular necrosis may develop as much as 3 years after the accident (Pearson & Mann).

SUMMARY

Two cases of traumatic hip dislocation in children are presented. In one of these, a moderate trauma caused re-dislocation after 3 months. This type of dislocation is unusual. The younger the child, the slighter the trauma which may lead to dislocation, which is of the posterior type as a rule. The treatment is closed reduction under anesthesia with immobilization, which probably need not last longer than a few days up to a week. Complications are caput necrosis, osteoarthrosis, possibly an increased growth of the head or neck of the femur, and re-dislocation. Recurrent dislocation may have to be treated surgically, in which case it is recommended that the posterior part of the joint capsule is narrowed.

REFERENCES

Aufranc, O. E., Jones, W. N. & Harris, W. H. (1964) Recurrent traumatic dislocation of the hip in a child. *J. Amer. med. Ass.* **190**, 291.

Blount, W. P. (1955) *Fractures in children*, p. 151. The Williams & Wilkins Company, Baltimore.

Body, J. (1969) Luxation récidivante de la hanche chez un garcon de 7 ans. *Rev. Chir. orthop.* **55**, 65.

Choyce, C. C. (1924) Traumatic dislocation of the hip in childhood, and relation of trauma to pseudocoxalgia. *Brit. J. Surg.* **12**, 52.

Freeman, G. E. (1961) Traumatic dislocation of the hip in children. *J. Bone Jt Surg* **43**-A, 401.

Gaul, R. W. (1973) Recurrent traumatic dislocation of the hip in children. *Clin. Orthop.* **90**, 107.

Glass, A. & Powell, H. D. W. (1961) Traumatic dislocation of the hip in children. *J. Bone Jt Surg.* **43**-B, 29.

Gula, D. L. (1972) Recurrent traumatic dislocation of the hip in children. *J. Amer. Osteopath. Assoc.* **72**, 32.

Lamke, L.-O. (1970) Traumatic dislocations of the hip. *Acta orthop. scand.* **41**, 188.

Masse, P. & Florent, J. (1964) Une luxation récidivante de la hanche chez une fille de 6 ans. *Rev. Chir. orthop.* **50**, 705.

Paus, B. (1951) Traumatic dislocations of hip. *Acta orthop. scand.* **21**, 99.

Pearson, D. E. & Mann, R. J. (1973) Traumatic hip dislocation in children. *Clin. Orthop.* **92**, 189.

Schlonsky, J. & Miller, R. (1973) Traumatic hip dislocations in children. *J. Bone Jt Surg.* **55**-A, 1057.

Thompson, V. P. & Epstein, H. C. (1951) Traumatic dislocation of the hip. *J. Bone Jt Surg.* **33**-A, 746.

Correspondence to:

Dr Lennart Hovelius
Department of Orthopedic Surgery
Gävle Sjukhus
807 07 Gävle
Sweden