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TRAUMATIC HIP DISLOCATION IN CHILDHOOD

A Report of Three Cases

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Three cases of traumatic dislocation of the hip joint in children are presented. All were subjected to immediate closed reduction under general anesthesia, followed by immobilization by means of skin traction for 2 weeks. Weight-bearing was resumed 2–3 weeks after the injury, and at follow-up examinations 23 to 27 months later the hip joints were found to be normal both clinically and radiographically.

Key words: hip dislocation; children

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Traumatic dislocation of the hip joint is an uncommon injury in children, and there is no general agreement in the literature as to the treatment and prognosis of these patients. During a period of 5 weeks three children with this injury were seen at Akershus Central Hospital, and this paper relates our experience with them.

CASE REPORTS

Case 1. H.H., a 4-year-old boy, fell off while riding a toboggan. He arrived at the hospital within an hour of the accident. His left hip was flexed and adducted and the greater trochanter was displaced posteriorly. Attempts to move the leg were painful. X-rays confirmed the diagnosis of posterior dislocation; no fractures were seen. Reduction under general anesthesia was accomplished easily and successfully, as confirmed by X-rays. Skin traction was applied for 15 days, then mobilization without weight-bearing was allowed. The intention was to postpone weight-bearing for 3 months. However, once free of the traction apparatus, the patient resumed full activity including weight-bearing. This seemed to have no adverse effects, and 27 months after the injury the hip was completely normal both clinically and radiographically.

Case 2. I.L.S., a 5-year-old girl, sustained an injury to the left hip while skiing. She arrived at the hospital 9 hours later, her left hip in flexion and adduction. X-rays showed a posterior dislocation of the hip joint, but no associated fracture. The dislocation was reduced under general anesthesia, and skin traction was applied for 15 days. As with the first patient we tried to prevent weight-bearing for a period of time, but without success. The course was, how-

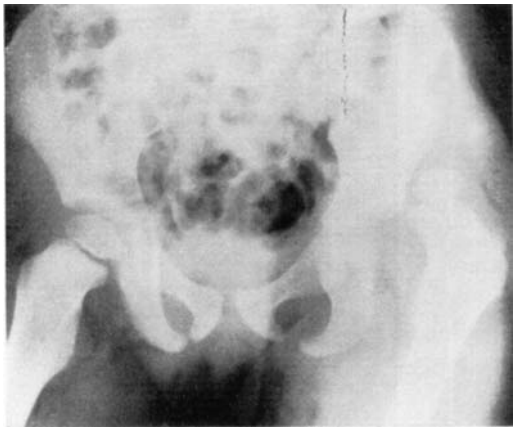

Figure 1. Frontal radiograph (Case 3) showing posterior dislocation of the left hip. No fractures are seen.

Figure 2. Frontal view of the same patient as in Figure 1 showing a normal left hip immediately after closed reduction.

ever, uneventful and at follow-up 24 months later the hip was normal.

Case 3. B.S.G., a 3-year-old girl. Her left hip was crushed beneath a slab of rock while she was playing. On admission to the hospital 2 hours later she had both clinically and radiographically (Figure 1) a posterior dislocation of her left hip. No fracture was seen. Immediate closed reduction was performed under general anesthesia (Figure 2), and skin traction applied for 12 days. As with the other patients weight-bearing could not be prevented for very long, and normal activities were resumed after approximately 3 weeks. At follow-up 23 months later the hip showed a full range of painless movement, there was no shortening of the extremity, and the radiographs were completely normal (Figures 3 and 4).

Figure 3. The same patient at follow-up examination 23 months after the injury. Frontal view shows a completely normal left hip.

Figure 4. Lateral view of the same hip.

DISCUSSION

Traumatic dislocation of the hip in children is a rare injury, and no single author has experienced sufficient cases to draw valid conclusions regarding treatment and prognosis. A larger number of patients, however, have been collected from various institutions and reviewed (Epstein 1973, Funk 1962, Glass & Powell 1961, Pearson & Mann 1973, Pennsylvania Orthopaedic Society 1968). The results of these investigations give certain guidelines for treatment.

There is general agreement that early reduction, i.e., within 24 hours, is of utmost importance in preventing sequelae. Closed reduction of uncomplicated, fresh dislocations is almost always possible, leaving open reduction for only a small proportion of the neglected cases and the otherwise exceedingly rare irreducible fresh ones.

There is, however, little agreement as to the post-reduction treatment. Most surgeons have used some sort of immobilization, lasting from a few days to

about 2 months. This has been achieved by traction, spica cast or bed-rest alone. We used skin traction for 12–15 days in our patients. It was well tolerated and seemed to be adequate.

It is more difficult to assess the importance of the non-weight-bearing period. Recommendations regarding duration of this period differ from a few days (Hovelius 1974) or until the hip is painless (Pearson & Mann 1973), to 3 months (Freeman 1961, Funk 1962). A correlation between the period of non-weight-bearing and the frequency of avascular necrosis of the femoral head has been proposed (Funk 1962), but according to other authors there is no such correlation (Piggot 1961, Epstein 1973). Our patients were immobilized for 2 weeks and started weight-bearing on their own after 2–3 weeks in spite of our intention to avoid weight-bearing for another 2–3 months. It is also the experience of others that these children cannot be kept from starting their normal activities once the protective device is removed (Pearson & Mann 1973). This probably indicates that already the synovial irritation has subsided. None of our patients has developed avascular necrosis or other sequelae.

According to the literature, there seems to be a distinct age variation with regard to post-traumatic avascular necrosis. This complication is almost unknown in children under 6 years of age, while in older children the frequency is about 10 per cent (Piggot 1961, Pennsylvania Orthopaedic Society 1968). This could partly be explained by the findings of Trueta (1957), studying the vascular anatomy of the femoral head during growth. He was able to show that the vessels of the ligamentum teres do not contribute to the nourishment of the femoral head during the first 3 or 4 years, and that these vessels do not reach their full importance until after 8 or 9 years of age. Our patients were in the younger age group, thereby supporting the evidence that these children have an excellent prognosis.

Our patients were observed for a minimum of 23 months after the injury. There is still some disagreement as to when the final outcome can be evaluated. There are, however, only two cases reported in the literature where the diagnosis of avascular necrosis was made later than 23 months after the injury (Haliburton et al. 1961, Pearson & Mann 1973), and one of these was a neglected case where the reduction took place a week after the dislocation. The final prognosis should nevertheless be reserved until skeletal maturity is reached (Pennsylvania Orthopaedic Society 1968).

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