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Hip dislocation combined with femoral shaft fracture

Two cases treated with the Lardennois hoop

The early treatment of hip dislocation associated with ipsilateral femoral shaft fracture often causes problems. The authors report the use of a Lardennois hoop apparatus in two cases with a satisfactory primary result.

Key words: dislocations; femoral fractures; hip joint; traction.

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Combined femoral shaft fracture and posterior hip dislocation is a very rare injury. From 1824, when Astley Cooper published the first documented case, until 1977 only 99 cases were reported (Schoenecker et al. 1978). Wiltberger et al. (1948) estimated its incidence at 1 in 100 000 fractures.

Several methods of management have been reported (Lyddon & Hartman 1971). In our service we have treated two cases with the Lardennois hoop apparatus (Lardennois 1959).

Case reports

Case 1.
A 17-year-old man was admitted to the emergency ward after having been involved in a motor cycle accident. X-rays disclosed a transverse fracture of the middle one-third of the femur with adduction of the proximal fragment and posterior dislocation of the ipsilateral hip.

With the patient under general anaesthesia, attempts at reduction were made using traction, manipulation and direct pressure on the femoral head. These remained unsuccessful. A K-wire was then inserted anteriorly to posteriorly into the greater trochanter and a traction bow was applied to obtain reduction by manipulation. This also failed. A Lardennois hoop apparatus was then applied and reduction could be achieved by increasing the distraction force. Skeletal traction, applied to the tibial tubercle, was installed and the Lardennois hoop removed according to a previously described operative technique (Glynn & Dunlop 1980–81). Three weeks later osteosynthesis of the femur with Küntscher nailing was performed and the patient was able to leave our department 6 weeks post-injury.

Case 2.
A 27-year-old man with a treated femoral shaft fracture and a non-reduced posterior hip dislocation was sent to us from an outlying hospital 2 weeks post-injury. A Lardennois hoop was applied and 3 days later transcondylar K-wire traction was installed. After 6 weeks the hoop was removed and after another 3 weeks traction was also discontinued. A plaster spica was applied for 3 months.

Discussion

In the case described by Cooper (1824), the fracture was allowed to heal before closed reduction was performed. Direct traction and manipulation would be the most natural treatment but is effective in less than 50 per cent of all cases. Dehne & Immerman (1951), however, were successful in only three out of 16 cases. Operative exposure of the fracture site and direct manipulation of the proximal fragment have been described by several authors (Dehne & Immerman 1951, Helal & Skevis 1967). Open reduction of both the dislocation and the fracture and internal fixation are recommended by Watson-Jones (1976). However, most authors agree that this procedure has a high percentage

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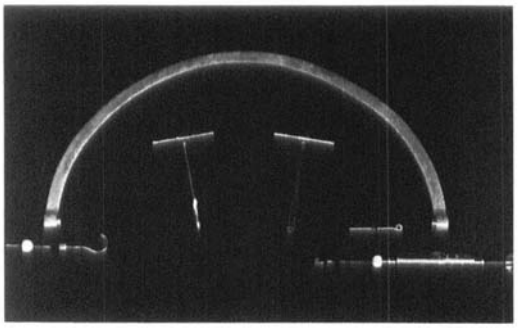

Figure 1. The components of a Lardennois hoop.

of poor results (Helal & Skevis 1967). Internal fixation of the fracture, followed by closed reduction of the dislocated hip, is by far the most logical approach, but this procedure is often not possible due to the patient's critical condition (Anderson 1971). Closed reduction using a device in the trochanter to facilitate manipulation was first described in 1879 (Allis 1879, 1896). It is in this group that we would place our method.

A Lardennois hoop apparatus (Figure 1) consists of four components: a hook placed in the spina iliaca superior at the non-injured side of the pelvis; a spiral screw inserted into the greater trochanter at the injured side; an adjustable spring hooked onto this screw; and a hoop connecting both sides of the pelvis. The apparatus was originally designed for traumatic protrusions of the femoral head in the acetabulum, but its value has also been proven for irreducible hip dislocations.

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