PROXIMAL AVULSION OF THE ILIACUS WITH PARALYSIS OF THE FEMORAL NERVE

Report of a Case

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A syndrome characterised by pain in the groin, a tender swelling in the iliac fossa, flexion deformity of the hip and a femoral nerve lesion is a common complication of haemophilia or Christmas disease (Goodfellow, Fearn and Matthews 1967). It has also been described in patients having anticoagulant therapy (Fearn 1968; Sigler, Raut and Vollman 1970). The syndrome is caused by haemorrhage into the iliacus muscle. A haematoma develops in the closed compartment formed by the iliac fascia and the ilium, and the femoral nerve is compressed as it lies in this compartment (Goodfellow et al. 1967). A similar condition can rarely occur in individuals without a bleeding tendency, as is shown by the following case report.

CASE REPORT

A schoolgirl aged sixteen was doing a gymnastic exercise which involved turning a somersault on a vaulting horse (Fig. 1). She fell heavily on her back with the hips extended. She complained of pain in the right buttock after the accident, but this was not severe and she was able to walk. A few hours later she had severe pain in the right groin and front of the right thigh. The front of the knee became numb, and she was unable to control the knee when she attempted to stand.

Enquiry into the past history revealed that she had had thrombocytopenic purpura when she was aged seven. She had made a good recovery from this and had had no recurrences. She had never had excessive bleeding from accidental wounds.

Six days after the accident she was able to stand only with great difficulty, and the right hip was held in 45 degrees of flexion. There was a tender swelling in the right iliac fossa (Fig. 2). Extension of the right hip was painful and restricted, but other movements were almost normal. There was complete paralysis of the right quadriceps, with absence of the patellar tendon reflex and sensory loss in the distribution of the femoral nerve. The platelet count, bleeding time and clotting time were normal. A radiograph of the pelvis showed no abnormality.

Operation—Twelve days after the accident the physical findings were unchanged. At operation the swelling was explored through a gridiron incision and retroperitoneal approach. The iliac fascia was found to be tense and bulging. This was incised and a large clotted haematoma was evacuated from deep to the iliacus muscle. It was then evident that the iliacus muscle had been avulsed at its origin, as the denuded bone of the inner aspect of the right ilium could be seen. No attempt was made to explore the femoral nerve. The wound did not bleed excessively.
Progress—The patient was kept in bed with traction on the limb for three weeks. Thereafter she resumed walking, with crutches at first. The femoral nerve lesion remained complete for three months and then started to recover. A year after the accident recovery was almost complete.

DISCUSSION

This patient presented a diagnostic problem and some doubt existed as to the cause of the femoral nerve lesion. Clinically there was a swelling of the iliacus and the psoas was not involved. It was difficult to decide whether the nerve had been damaged by pressure of the haematoma, or by a traction injury. As the patient gave a clear history of femoral nerve symptoms starting a few hours after the accident, it was thought that pressure of the haematoma was the more likely cause. It was decided that evacuation of the haematoma was indicated. Exploration of the nerve was considered, but it would have required a relatively large exposure.

**Fig. 2**
The swelling in the right iliac fossa six days after the injury.

Only a few case reports of this condition have appeared in the literature. Tallroth (1940) described a case in a boy aged sixteen who developed symptoms after a fall while vaulting. The femoral nerve was explored four months after the injury and appeared normal. Complete recovery occurred within a few months. Strandell (1942) described two patients. One was a boy of eighteen who felt pain in the right hip while jumping over a fence. The other was a youth of nineteen who injured himself while making a somersault over a vaulting horse. The haematomata were evacuated at intervals of nine days and three weeks respectively after the accidents. In one of these patients it was noted that the ilium was “exposed” and the iliacus “lifted up”. Recovery of the femoral nerve lesion occurred in each case. Tomishige and Morita (1965) described a case in a boy aged sixteen who fell on his back while doing a handstand. Exploration of the iliacus showed that there was tearing of the muscle fibres and separation of the iliac periosteum from the bone. Negishi (1966) described a similar case in which the haematoma was aspirated. Recovery of the femoral nerve lesion occurred in both.

Although these case reports refer to the “iliopsoas” rather than to the iliacus, it is evident from the descriptions that the iliacus was mainly involved. The injuries were all caused by athletic activities such as somersaulting, and most of the reports describe a sudden extension of the hip. It seems that this type of injury can rarely cause rupture of the proximal part of
the iliacus, or avulsion of the origin of the muscle from the ilium. Early recognition of this condition and evacuation of the haematoma may prevent the development of a complete femoral nerve lesion.

SUMMARY
1. The case of a girl aged sixteen years who avulsed the iliacus muscle from the ilium during a gymnastic exercise is reported.
2. The lesion was complicated by paralysis of the femoral nerve from pressure by the haematoma. Recovery occurred after decompression.
3. Reports of similar cases from the literature are reviewed.

REFERENCES