Massive psoas haematoma causing lumbar plexus palsy: a case report

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ABSTRACT

An 84-year-old man who was receiving oral anticoagulation therapy presented with complete lumbar plexus palsy caused by a massive psoas haematoma. Conservative treatment rather than drainage of the haematoma was undertaken, because of the risk of bleeding complications and mortality. At the one-year follow-up, the patient had no clinical signs of neurological recovery. The patient died 2 months later due to his concurrent medical problems. A high degree of suspicion is needed for the diagnosis because of the insidiously developing neurological deficit.

Key words: femoral nerve; hematoma; lumbosacral plexus; obturator nerve

INTRODUCTION

A haematoma in the iliacus is a rare cause of femoral nerve palsy.1–14 A haematoma at the lumbosacral plexus compressing the musculature of the femoral and obturator nerves is even rarer. This condition is usually caused by haematomas located cephaladly at the psoas.15–17 This type of haematoma mainly occurs in haemophilia patients,17 anticoagulant recepients,6,10,15,16 young people with arteriovenous malformations who sustain a low-energy trauma,2,9,12–14 and persons who have had hip arthroplasty.2,9,12–14 These injuries are difficult to diagnose because of the considerable time lapse before manifestation of neurological symptoms. Delayed diagnosis can result in neurologic damage and irreversible disability.5,9,12,14

CASE REPORT

In April 2005, an 84-year-old man presented with a 20-day history of right groin pain after a fall. Over the previous 2 days, he had progressive difficulty in walking and a loss of sensitivity at the anterolateral portion of the iliopsoas and anteromedial aspect of the right leg. He was receiving oral anticoagulation therapy for atrial fibrillation. There was a large
haematoma at the groin and anteroexternal area of the right thigh. Radiographs showed no anomalies or fractures. He was diagnosed with contusion of the hip and tendonitis of the adductors. Acute vascular brain pathology was dismissed by a neurologist.

Neurological examination showed a complete functional deficit of all muscles dependent on the right lumbar plexus (femoral and obturator nerves), with hypoesthesia of the anteromedial aspect of the thigh and leg, and abolition of the ipsilateral knee reflex. The line of the right psoas was obliterated (Fig.). Computed tomography of the pelvis showed a massive haematoma, measuring 18x10x8 cm, extending from the most cephalad portion of the psoas to the iliac muscle (Fig.).

Blood tests showed coagulation within the therapeutic range for the patient’s heart condition (Quick value, 29%; PTT, 50/29 s; INR, 1.7), and severe anaemia (Hb, 8.8 g/dL; Ht, 26%). Blood products were transfused and anticoagulation discontinued. The need to drain the haematoma was evaluated.

Following transfusion, haemoglobin levels remained stable for 3 days, thereby excluding active bleeding. However, complete functional deficit of the lumbar plexus musculature persisted, despite treatment with corticoids. Considering the blood condition of the patient and the manifested neurological injury, drainage of the haematoma was rejected, because of the increased risk of bleeding complications and mortality. Conservative management was continued.

Five weeks later, functional deficit of the lumbar plexus musculature persisted. Electromyographs showed complete denervation of the quadriceps femoris (vastus lateralis, rectus femoris, and vastus medialis) and the adductor longus. These muscles depend on the ipsilateral femoral and obturator nerves, respectively. At the one-year follow-up, the patient had no clinical signs of neurological recovery. The patient died 2 months later due to his concurrent medical problems.

DISCUSSION

The mechanism of compression injury to the lumbosacral plexus caused by retroperitoneal haemorrhage in haemophilia patients has been described. The most common cause is a haematoma at the iliacus compressing the femoral nerve, followed
by a haematoma at the psoas compressing the femoral and obturator nerves and causing diffuse injury to the lumbar plexus.15,16,18

The lumbar plexus is formed by the first 4 lumbar nerves (L1–L4) deep within the psoas (Table). Only 3 cases of complete lumbar plexus injury secondary to compression by a haematoma have been reported in patients with haemophilia or other diseases (leukaemia, disseminated intravascular coagulation) that cause coagulation disorders, or in those who are on anticoagulation treatment. Low-energy trauma in young patients with arteriovenous malformations or patients with total hip arthroplasty may lead to compression injury of the femoral nerve.2–4,6,7,10,12–19

A high degree of suspicion is needed for the diagnosis, because of the insidiously developing neurological deficit. Patients usually consult for pain at the groin with progressive difficulty in walking several days after a low-energy trauma. In most cases, the first neurological symptom detected is hypoaesthesia in the suprapatellar area.17 Magnetic resonance imaging has high sensitivity for the detection of small haematomas, but is not widely available. Computed tomography is the most common imaging tool.2,4,9,13–15 Obliteration of the psoas margin on radiographs indicates a mass in the retroperitoneal space, but this sign is noted in only a few patients with psoas haematomas.

Treatment ranges from drainage of the haematoma to monitoring of the neurological injury. Surgery is recommended for trauma patients, large haematomas, and those with progressive neurological impairment, whereas conservative treatment is reserved for haemophilia patients and those with coagulation disorders.2,12,14 Percutaneous drainage should be attempted first before surgical decompression, despite the difficulty of draining intramuscular haematomas.6 This enables faster recovery and avoids sequelae.3,8,15,16 Nonetheless, the natural evolution of the injury is spontaneous resolution.9 Our patient had several co-morbidities and was receiving anticoagulation for a heart condition. He had complete injury to the lumbar plexus for almost 3 days after a fall 4 weeks earlier. Surgical drainage of the haematoma at the psoas was rejected because of the increased risk of bleeding complications and mortality. Periodic monitoring of the neurological injury was thus performed.

### Table

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<tr>
<th>Innervated muscles</th>
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**REFERENCES**