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CASE REPORT

Spontaneous hematoma of the iliopsoas muscle. The report of three cases and review of the literature

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KEYWORDS

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PALABRAS CLAVE

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Neuropatía femoral;
Tratamiento
conservador

Abstract

Introduction: Haematomas of the iliopsoas muscle are uncommon problems that are seen in patients with predisposing factors. They have a varied clinical presentation which may even alter haemodynamic maintenance.

Case reports: We present 3 clinical case reports on patients treated conservatively at our hospital. The outcome was successful in two of them and resulted in death in the other.

Comments: Iliopsoas muscles are essential structures in the maintenance of posture and hip flexion. Haematomas of these muscles usually occur in patients with coagulation disorders, causing from mild local discomfort to hypovolemic shock. They can be diagnosed by imaging tests such as ultrasound and computed tomography, which enable us to decide the most appropriate therapeutic approach, usually requiring conservative management that includes rest and analgesia, together with the recovery of blood clotting ability.

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Hematoma espontáneo del músculo psoas-ilíaco. Aporte de 3 casos y revisión de la literatura médica

Resumen

Introducción: Los hematomas del músculo psoas-ilíaco son problemas infrecuentes que veremos en pacientes con factores predisponentes. La presentación clínica es muy variada, lo que puede afectar al mantenimiento de la hemodinamia.

Casos clínicos: Presentamos 3 casos clínicos atendidos en nuestro hospital, todos ellos con tratamiento conservador: fue efectivo en 2 casos y una paciente falleció.

Comentarios: Los músculos psoas-ilíacos son estructuras fundamentales en el mantenimiento de la postura y la flexión de la cadera. Los hematomas de estos músculos suelen aparecer en pacientes con alteraciones de la coagulación, y causan desde ligeras molestias locales hasta cuadros de *shock* hipovolémico. Deberán estudiarse mediante pruebas

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de imagen, como ecografía y tomografía computarizada, que permitirán decidir la actitud terapéutica más adecuada, generalmente requerirán tratamiento conservador con reposo y analgesia, y recuperarán siempre la capacidad coagulante de la sangre.
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Introduction

Haematomas of the iliopsoas muscle are infrequent entities, usually appear in patients with clotting alterations, whether due to illnesses, such as haemophilia and other blood dyscrasias, or as a result of the anti-coagulant treatment.¹⁻⁴ It may be seen less frequently in healthy individuals,¹ generally due to traumatic muscle damage.³

On occasions, these bruises can be caused by major bleeding, with repercussions on the patient's haemodynamic status. The symptoms produced are characterized by pain in the groins, lumbar area and lower abdomen, a hypersensitive mass in the iliac fossa and flexion contracture of the hip,¹⁻³ all accompanied by functional impotence of the limb affected.⁵⁻⁷ Neuropathy due to compression of the femoral nerve is the most serious and common complication.^{1-3,5,7,8}

We present here 3 cases of spontaneous haematoma of the iliopsoas muscle, as well as a review of the medical literature on the treatment of these lesions.

Case reports

Case 1

Male, 34 years of age, with a history of bilateral hip prosthesis due to avascular necrosis secondary to treatment with high doses of corticosteroids, came to the clinic complaining of abdominal pain lasting for 3 days in the left iliac fossa and discomfort when flexing and extending the hip. He did not present any fever or mention any alterations in his bowel movements. He only reported a strenuous physical effort a few hours prior to the start of the episode.

In the physical examination, his abdomen was soft and depressible, with selective pain and voluntary muscle defence at the level of the left iliac fossa, increasing with flexion and extension of the hip. The digital exam of the rectum showed nothing of interest. The significant finding in the blood test was haemoglobin at 10.5 g/dL, with conservation of the rest of the biochemical and haemostasis parameters. The X-ray of the abdomen was normal and the abdominal ultrasound examination showed a discrete amount of free fluid in the pelvis. The images obtained using computed tomography (CT) revealed a large haematoma in the left iliopsoas muscle.

The patient was admitted and ordered to observe absolute rest with painkillers; he remained haemodynamically stable at all times and the haemoglobin figures returned to normal in the subsequent follow-up analyses; he was discharged without symptoms after three days in hospital.

Case 2

Female, 82 years of age, came to the clinic complaining of general weakening in the previous few days and fever. Noteworthy episodes in her personal history included anti-coagulant treatment following a bout of pulmonary thromboembolism, high blood pressure, Parkinson's disease and repeated cerebrovascular accidents with residual hemiplegia of the right arm.

During the physical examination, the patient maintained arterial pressure at 100/60 mm Hg with pumped dopamine in intravenous perfusion, a pulse of 126 beats per minute and oxygen saturation of 95% with oxygen therapy. She was seen to be confused and her speech was incoherent; she referred to a diffuse abdominal pain without signs of peritonism. Her blood analysis results showed anaemia, with haemoglobin at 7.8 g/dL and leukocytosis at 15,000. The abdominal CT scan (fig. 1) revealed mild diffuse atheromatosis and a haematoma of the right lumbar quadratus and psoas muscles measuring 66×99×140 mm, with the craniocaudal diameter longer.

During her admission, she received transfusions of 4 haematite concentrates; hypoventilation, oligoanuria and blood pressure persisted at limit values despite treatment with vasoactive drugs. Anti-coagulant therapy was withdrawn and vitamin K and pro-coagulant factors were administered. Despite the treatment applied, the patient gradually deteriorated, suffered multiple organ failure and died 7 days after admission.



Figure 1 Computed tomography image showing the extensive haematoma including the right iliopsoas and lumbar quadratus muscles.

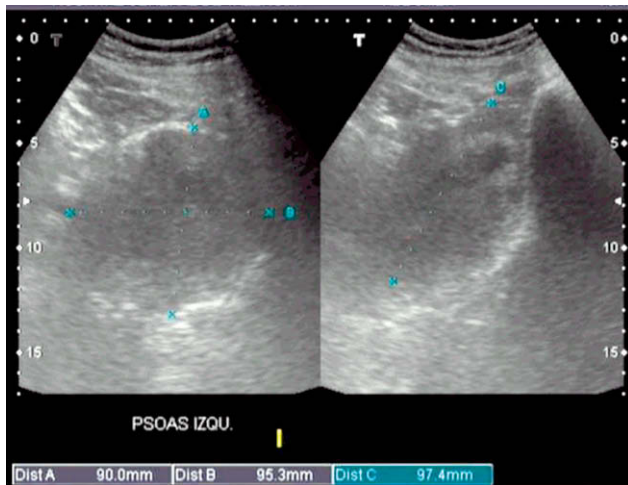


Figure 2 Ultrasound image showing the size of the haematoma in the left iliopsoas muscle.

Case 3

Male, 80 years of age, complaining of abdominal pain and pain at the root of the left thigh that increased with flexion of the ipsilateral hip, without association with fever or any other symptoms. The only matter of note in his personal history was a prior bout of pulmonary thromboembolism, for which he continued to have oral anti-coagulant treatment.

On examination, he presented a good general status, with stable haemodynamic parameters. His abdomen was soft and depressible, without peritoneal irritation. A haematoma was observed in the peri-umbilical region with functional impotence, and considerable pain on flexion of the left hip.

A blood analysis showed haemoglobin at 10.5 g/dL, a Quick index of 5% and an INR of 11.4. The rest of the biochemical parameters were normal. The ultrasound scan of the abdomen highlighted an increase in the size of the left iliopsoas muscle, with a collection measuring 90×95×97 mm compatible with haematoma (fig. 2).

The patient required 3 haematite concentrates in order to recover normal values in subsequent blood panel tests; oral anti-coagulants were replaced by low molecular weight heparins and vitamin K was administered to improve the coagulation status. A follow-up ultrasound scan was performed after 72 h, and no growth was seen in the bruise, so he was discharged on the sixth day after admission with clinical recovery.

Comments

The iliopsoas muscle contributes to the maintenance of posture with flexion the body and the thigh.³ Haematomas of this muscle are more frequent in patients with clotting alterations,^{1,5} mainly in those with anti-coagulant treatment (as in the patients in cases 2 and 3); they are an extraordinary finding in patients without any prior history or known blood

dyscrasia,^{1,3} generally due to trauma affecting young patients (as in case 1).

The most frequent clinical manifestations are pain in the lower back or on the ipsilateral side, sometimes associated with autonomic symptoms and nausea or vomiting. With a frequency between 37-57%, it is possible to observe neuropathy due to compression of the femoral nerve^{2,9} due to the special arrangement of the nerve between the muscular fibres on its way towards the thigh. The examination highlighted functional impotence of the affected limb, with impossibility to flex the hip.^{2-5,7} Occasionally, there may be haematomas or echymosis on the abdominal wall, the groin region or in the upper part of the thigh.³ Patients with large haematomas on the psoas may present signs of hypovolemia and even a state of shock,¹ as the muscle may contain a large volume of blood. In other cases, the third patient presented a discrete peri-umbilical echymosis, whereas in the patient in case 2, the form of presentation was totally atypical: she presented fever and non-specific abdominal pain.

This diagnosis must be suspected in the light of a good anamnesis and a meticulous physical examination, and is confirmed by complementary imaging tests. In all patients, a complete blood analysis is essential, including haemostasis parameters that help verify the status of the patient's coagulation.^{1-3,7} An ultrasound scan of the abdomen may provide a lot of information in view of its usefulness for studying deep soft tissue.^{2,3} In fact, it is practically enough in most cases to detect these lesions, although other tests such as CT or angio-CT and magnetic resonance present greater sensitivity and specificity.^{1,2,7-9} Tomography is useful to differentiate haematomas from other retroperitoneal lesions, such as abscesses, lymphomas and other tumours.³ An ultrasound scan of the abdomen on all our patients and in only one of the cases was abdominal CT omitted.

Angiography may be a gorier test than the preceding ones, but it may in compensation provide a diagnostic and therapeutic function as it is possible to perform embolization of the bleeding vessel.¹

The differential diagnosis of this condition must consider^{3,10} acute appendicitis, muscle abscesses, retroperitoneal tumours, nephritic colic,⁸ arthritis or haemarthrosis⁹ of the hip, fracture of the posterior superior iliac spine and herniated discs, among others.

The treatment of haematomas in the psoas is controversial, but there seems to be consensus on certain aspects. In this way, in small or moderately-sized haematomas without any major repercussions on the patient's haemodynamics, conservative treatment is recommended^{1-7,9,10} with hydroelectrolytic replenishment, absolute rest and adequate analgesia. Some authors apply traction to the ipsilateral limb to correct the reflex contracture of the hip, align the articulation and so diminish the pain.² On the other hand, for the correction of the problems, haemostasis is a fundamental point in the treatment of these patients: anti-coagulant medication must be withdrawn, a transfusion provided for the necessary elements and pro-coagulant factors administered where required.

In the case of large haematomas that are spreading or cause major compression with functional alteration of

adjacent structures, the adoption of a more radical attitude would be indicated.^{1,3,4,7} This is considered, apart from avoiding or combating possible hypovolemic shock, in order to reduce the pressure on nerve roots and trunks and to minimize the possibility of permanent neurological damage.³ These manoeuvres may vary, depending on the characteristics of the patient and the availability and infrastructure at the centre, from a simple percutaneous drainage of the haematoma to surgical drainage for direct control of the haemostasis, including percutaneous embolization. In the event of compression of the femoral nerve, the alteration of the function is generally reversible and recovery is spontaneous; permanent lesions have been documented on few occasions.^{2,3,7}

In the cases reported here, it has not been necessary to apply radical measures in any of them; normal analytical parameters were recovered and symptoms improved in 2 of them. The patient who died did not respond to the treatment administered, her poor general status persisted and she presented multiple organ failure that ended up causing the death of the patient.

Haematomas of the iliopsoas muscle are unusual entities more frequent in patients with risk factors for haemorrhage, with blood dyscrasias or taking anti-coagulants. For their diagnosis it is recommendable to perform an imaging test to define the size and possible spread, and their treatment will depend on the patient's haemodynamic status and the problems derived from the haematoma, although conservative measures with rest and the correction of

predisposing factors are sufficient to solve the problem in most cases.

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