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ABSTRACT

Traumatic pseudoaneurysms of the deep femoral artery are only encountered infrequently in sports medical literature. We present the case of a male who, after practising full-contact karate, experienced pain and oedema in the right thigh. The ultrasound results and the arteriography showed the presence of a pseudoaneurysm in a branch of the deep femoral artery. Traumatic pseudoaneurysms of the deep femoral artery are normally secondary to endovascular interventions or to mycotic infections in injecting drug users. The majority appear asymptomatically as a pulsatile mass, although on occasions clinical signs of compression (pain, neurological or venous symptoms) may occur or, if the aneurysm bursts, hypovolemic shock.

Traumatic pseudoaneurysm during sport is a rare occurrence.[1 2] Normally it is caused by the interruption of arterial flow with extravasations of blood to the peripheral tissues, independent of the process that initiated it: surgery, trauma, infection, vasculitis or interventionist percutaneous procedures. The majority of cases described in the literature refer to false aneurysms in other locations such as the temporal artery, carotid artery and digital artery.[3–5] In all of these cases the result is the formation of a fibrous capsule that spreads out in a progressive manner because of the constant arterial pressure in the area. The diagnosis is normally clinical, supported by radiological scans, with Doppler ultrasound providing information about the location and morphology of the aneurysm.[6] The arteriography is necessary before surgery or endovascular treatment. Although it does not produce significant mortality, this process does generate an important injury effect in sportspeople.

CASE REPORT

A 17-year-old male patient with no medical or surgical history of interest, a habitual sportsman who practised full-contact karate for 3 hours a day, 6 times a week, was admitted to our hospital after receiving various blows to the surface of the right thigh. He reported an increase in the diameter of the thigh accompanied by pain under physical examination and swelling without deformation. The injury occurred after a training session against an opponent with little experience who hit the patient's thigh in a violent and technically incorrect manner. At the time of the traumatism the patient was wearing all the regulation protection for this sport. The permitted hits in full-contact are all punches, kicks and sweeps that strike above the waist, except punches with the turning of the body and the downward kick.

Doppler ultrasound of the thigh was performed, identifying the presence of a large intramuscular haematoma in the vastus internus and the iliotibial tract secondary to the muscular tear that made examination of deeper structures such as the superficial or deep artery difficult. Surgical drainage of the haematoma, guided by Doppler ultrasound, was performed under local anaesthetic with subsequent compressive dressing and rest. The patient was released to outpatient follow-up after 5 days because the pain had gone and he was in good physical condition.

He returned 48 hours later because the pain had returned and his thigh had increased in diameter. Physical examination from the vascular perspective was normal showing all the pulses in both lower limbs to be symmetric. Auscultation of the groin region showed the presence of a minimal murmur without thrill. A new Doppler ultrasound was performed and it identified the presence of a pseudoaneurysm in the deep femoral artery of 1.7×3.3 cm maximum diameter and with a long and narrow aspect. In the selective arteriography of the right leg the presence of a small round image was observed next to a lateral branch of the deep femoral, which corresponds with a partially thrombosed pseudoaneurysm (fig 1). He was treated with conservative treatment of rest and Doppler ultrasound-guided compression treatment while the thrombosis was checked. This treatment is suitable when the pseudoaneurysm is of a small size, the lumen is partially thrombosed and the aspect is long and narrow and ony when the patient is hemodynamically stable and there is no indication of complications (such as rupture and fistula). Twenty minutes of compression were required to create the thrombosis.

During outpatient checks and after a month in external examinations the thrombosis of the injury continued to reduce, as did the intramuscular haematoma in the healing phase. The pain disappeared and the oedema of the right thigh diminished.

DISCUSSION

The possibility of a pseudoaneurysm occurring after trauma in any artery and its clinical manifestation varies according to the anatomical region affected. However, because of its position and depth the occurrence of injuries in the deep femoral artery is much lower than in other areas, being mentioned in the literature on very few occasions.[1]

The advance of percutaneous techniques has increased the yatrogenic damage in the femoral artery and its branches, this being the most

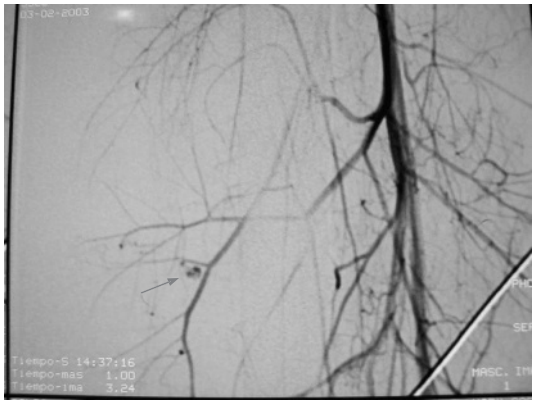

Figure 1 Partially thrombosed pseudoaneurysm.

frequent aetiology of pseudoaneurysms at this level.[7] Other causes found in the literature are those secondary to punctures in injecting drug users[8] (mycotic pseudoaneurysms), or traumatic ones after hip and femoral trochanter surgery.[9]

The clinical diagnosis is supported by radiological examinations; the Doppler ultrasound gives information about location and morphology and arteriography is necessary for treatment.[6]

The chosen treatment for these injuries continues to be ultrasound-guided compression treatment, this is a well-tolerated procedure with little cost and a low mortality rate. In cases of pseudoaneurysms of a large size, when they are complex or if a mycotic pseudoaneurysm is suspected, surgical resection with ligature or reconstruction of the artery would appear to be the most appropriate technique. Other options such as ultrasound-guided injection of thrombin,[10] percutaneous embolisation with coils, alcohol ethyl ethynyl or other types of embolising liquid substances are taking on a special importance even in complex cases because of a lower mortality rate compared with surgery.

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Patient consent: Obtained.

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