

Acute Compartment Syndrome of the Thigh 10 Days Following an Elective Primary Total Hip Replacement

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SUMMARY

Acute compartment syndrome (ACS) of the thigh is an uncommon condition usually treated surgically by emergency dermofasciotomy. We report a rare case of acute delayed compartment syndrome of the anterior compartment of the thigh following an uncemented Total Hip Replacement (THR). Surgical decompression was performed and patient had full recovery.

Key words: compartment Syndrome, antiplatelet, hip arthroplasty complications, fasciotomy

BACKGROUND

ACS of the thigh is an uncommon condition probably due to the large volume of the thigh compartments. Although rare, it can result in serious complications including ischemic contractures and paralysis. It most commonly follows blunt trauma and usually not associated with fractures [1]. Other aetiologies include anticoagulation, compression by a tourniquet, vascular injury, acute ischaemia and strenuous exercise [2-3].

CASE REPORT

A 67-year-old gentleman presented to our hospital with acute severe left thigh pain, eight days following an uneventful elective uncemented left THR. He had been discharged three days postoperatively and was mobilizing well with the aid of two crutches. The pain was only present on moving and was alleviated by rest with no history of preceding trauma. He had been performing at least twice the amount of physiotherapy exercises recommended to him. He reported no constitutional symptoms and had no previous co-morbidities. His was on oral analgesia and Low Molecular Weight Heparin (LMWH) (Tinzaparin®) as deep vein thrombosis (DVT) prophylaxis.

Clinically he had thigh swelling with tenderness across the anterolateral aspect of the thigh. The wound was dry with no signs of infection. Passive rotation of the left lower limb with the hip in extension was comfortable. He was able to actively flex the hip to 50° but passive rotation in this position exacerbated the pain severely. There were no signs of DVT or neurovascular deficit. Radiographs on admission showed a well-positioned implant with no obvious fracture. The patient had a normal full blood count and renal function, but the CRP was 110 mg/L. A CT scan was done confirming no fracture. The patient continued to have regular analgesia with oral morphine as required and subcutaneous Tinzaparin.

Overnight his opiate requirements increased. By the morning he was in severe pain at rest, could not tolerate any passive movement of the limb and complained of pins and needles radiating to his leg. The anterior aspect of the left thigh had become tensely swollen and exquisitely tender. Using a hand-held digital compartment pressure monitor an intracompartmental pressure of 48 mmHg was recorded with-

in the anterior compartment of the thigh. His diastolic blood pressure was 65 mmHg (Delta pressure = 17mmHg). A diagnosis of compartment syndrome was made and the patient had an immediate surgical decompression through a single incision. On incision of the fascia lata, marked muscle bulging was noted. A large hematoma was evacuated between the deep fascia and vastus lateralis muscle, no active bleeding was found. All muscles appeared well perfused and contractile. On recovery from general anaesthetic, the patient reported immediate relief of the previously severe thigh pain. Delayed primary wound closure was done 72 hours later. Gradual mobilisation was commenced and the patient was discharged after 10 days. Two weeks later, he was reviewed in the outpatient clinic. He was mobilising well with a healthy looking wound.

DISCUSSION

Contusion-related compartment syndromes are frequently associated with intramuscular bleeding in the involved compartment, which may accumulate slowly or worsen with further activity. It would appear that a postoperative thigh hematoma was the cause of the compartment syndrome in this case, but the sudden onset of pain 8 days postoperatively suggests a delayed intramuscular haemorrhage rather than ongoing postoperative bleeding. Anticoagulation and excessive physiotherapy may have magnified the intramuscular bleed.

We are aware of two published case reports of acute compartment syndrome after THR. Nadeem and Clift describe two cases of ACS after cemented revision THR [4]. The first had been taking warfarin preoperatively for recurrent DVT and pulmonary embolism and was anticoagulated postoperatively with IV Heparin. The second was prescribed subcutaneous LMWH for routine thromboprophylaxis. These cases were diagnosed at three and six days postoperatively respectively, whereas our patient had completed an eight-day course of LMWH on the day he presented to our hospital with thigh pain. Both cases were cemented arthroplasties, in contrast to the uncemented arthroplasty in our case. The second report developed an early postoperative ACS following an uncemented cup and a cemented stem and had been started on Tinzaparin for DVT prophylaxis [5].

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