

# Swelling of the Thigh and Adductor Muscle Rupture - A Case Report

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## Abstract

Swelling around the thigh is a common clinical finding in the paralysed patient, heterotrophic ossification and deep vein thrombosis being the usual etiological factors. This case report illustrates another unusual cause – an adductor muscle rupture – a complication which occurred due to overenthusiastic stretching of the spastic adductor muscles.

**Key Words :** 1. adductor 2. rupture 3. paralysis

## Introduction

Unilateral swelling of a paralysed limb is commonly associated with deep vein thrombosis, or heterotrophic ossification. We report a paralysed patient who presented with an acute swelling of the thigh, due to an unusual aetiological factor – an adductor muscle rupture.

## Case Report

A twenty six-year-old man was admitted to our unit, a year after a road traffic accident, in which he sustained a head injury. A CT scan of his brain showed evidence of diffuse brain damage. He was unable to move all four limbs, had significant spasticity, and multiple joint contractures. He had sustained a fracture of the right femur and tibia, which were nailed at the referring hospital. He had a tracheostomy tube and was being fed through a naso-gastric tube at the time of admission. His bladder was drained with

an indwelling catheter. His perineal hygiene was poor due to severe adductor muscle spasm. The range of movement in the right hip was restricted, possibly due to inadequate mobilisation of the hip following the fracture. A diagnosis of traumatic brain injury sequelae with total body involvement was made. To reduce the spasticity, and aid in perineal hygiene, he was started on Tab Tizanidine, and subsequently, phenol blocks were given to the Obturator nerves. This was supplemented by prolonged stretching of the adductor muscles, both by the therapist, and the patient's relatives. A month after admission and twenty-five days after the Obturator nerve block, the patient was noticed to have a swelling of the right thigh. The thigh was reportedly normal earlier in the day and the swelling had developed suddenly. On examination, there was only minimal distal oedema. There was mild induration of the medial thigh, but no obvious mass was palpable. There was no abnormal mobility of the femur, and the range of movement in the hip was not altered. Clinical examination of the abdomen

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was also normal. A Doppler examination of the pelvic and lower limb vessels was negative for deep vein thrombosis, and the X-ray and Ultrasonography of the hips did not show any evidence of any Heterotrophic Ossification around the hip, nor any fracture. As there was a swelling and induration in the medial aspect of the thigh (Fig 1), an adductor muscle rupture was suspected. A CT scan of the thigh confirmed our clinical suspicion (Fig 2). The scan showed marked swelling of the adductor muscles, with evidence of a probable bleed into the muscle bulk, as seen on the scan. On discussing the findings with the father, he admitted that he had been vigorously stretching the adductors a few hours before the swelling was noticed. The swelling settled in a few days time, with anti-inflammatory drugs.



Fig.1 Swelling of the thigh

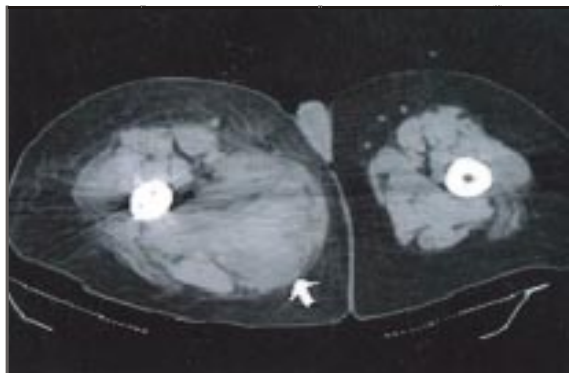


Fig.2 CT Scan of the thigh

## Discussion

Unilateral swelling of the lower limb in any bedridden patient with neurological deficits, is most commonly associated with deep vein thrombosis (DVT), or heterotrophic ossification (HO). DVT is usually detected in the second to fifth week post injury, and a second peak around the twelfth week has also been described among paraplegics<sup>1</sup>. There is an increase in the girth of the calf muscle, and the thigh (in case of a femoral DVT), with distal pitting oedema. There is an increased firmness of the calf on palpation. The usual signs of pain on squeezing the calf (Homan's sign), or on dorsiflexion of the ankle, do not cause pain in a paralysed individual, and this subjective 'firmness' of the muscle compartment is one of the signs to be looked for in a suspected DVT. In HO, there may be swelling of the thigh, associated with distal oedema, but the firmness of the calf is usually absent. There may be induration/ firmness around the hip joint, with restriction of the range of movement. A Doppler scan is usually taken to detect DVT, and an X-ray or ultrasonography of the hip is used to detect HO. Ultrasonography picks up the HO earlier than routine X-rays do. If there is no other obvious cause like trauma, or abscess, one should consider an adductor rupture – especially if associated with induration and swelling in the medial aspect of the thigh, and minimal pedal oedema. The muscle is seen to be bunched/ swollen in the medial aspect of the thigh (Fig 1). This could be confirmed with ultrasonography, or with a CT scan. The traumatic rupture could subsequently lead onto heterotrophic ossification in the medial compartment of the thigh, and this could cause restriction of movement in the spastic hip.

Previous case reports of adductor muscle rupture have been in sports injuries. The muscle has been reported to rupture either proximally or distally<sup>2,3,4</sup>. This case highlights one of the

potential complications associated with unsupervised, excessive stretching of the spastic adductor muscle – a common problem in the paralysed patient. Care should be taken to prevent such problems.

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