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## CASE REPORT

### Fascia iliaca compartment block in dislocated hip reduction



#### *Bloc du compartiment ilio-fascial dans la réduction de luxation de la hanche*

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**Introduction:** Femoral dislocation constitutes an orthopaedic emergency. For pain control in these cases, apart from procedural sedation, a regional block can be applied.

**Case report:** A 26-year old male was brought to the emergency centre after being struck by a motor vehicle. Dislocation of the left femur was determined on direct radiograph. It was decided to apply a fascia iliaca compartment block instead of procedural sedation due to the risk of side effects. After sufficient anaesthesia was provided, the dislocation was successfully reduced on the first attempt with the Allis technique.

**Conclusion:** The fascia iliaca compartment block (FICB) can be performed easily and successfully under ultrasound guidance. The pain associated with femoral dislocation is decreased and the reduction procedure can be achieved successfully. In many cases, FICB is easy to apply and carries a low risk of side effects.

**Introduction:** La luxation de la tête fémorale est une urgence orthopédique. Afin, dans ce cas, de contrôler la douleur, en dehors de la sédation, un bloc nerveux régional peut être appliqué.

**Rapport de cas:** Un homme de 26 ans a été amené au centre d'urgence après avoir été heurté par un véhicule à moteur. Une luxation du fémur gauche a été diagnostiquée sur radiographie directe. Il a été décidé d'appliquer un bloc nerveux du compartiment ilio-fascial au lieu d'une sédation en raison du risque d'effets secondaires. Après qu'une anesthésie suffisante ait été administrée, la luxation a été réduite avec succès à la première tentative en utilisant la manoeuvre d'Allis.

**Conclusion:** Le bloc du compartiment ilio-fascial (BCIF) peut être réalisé facilement et avec succès avec un guidage échographique. La douleur associée à la dislocation du fémur est réduite et la procédure de réduction peut être réalisée avec succès. Dans de nombreux cas, le BCIF est facile à appliquer et entraîne un faible risque d'effets secondaires.

#### African relevance

- Fascia iliaca compartment block with ultrasound guidance is a procedure that can be applied easily in emergency centres in Africa.
- It is particularly beneficial for hip dislocations and in geriatric patients, including those who have prostheses.

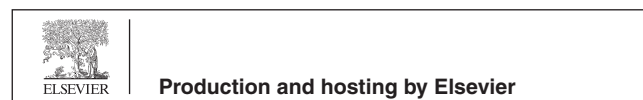
#### Introduction

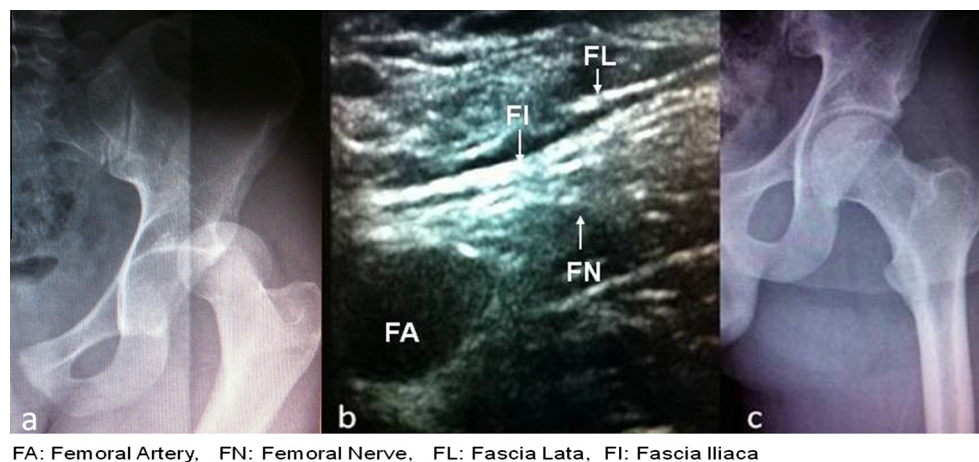
Femoral dislocation constitutes an orthopaedic emergency. The majority of dislocations occur from high-energy trauma

such as motor vehicle accidents and in the young ages, often from sport injuries or falls from a significant height. In cases of knee dislocation and severe ligament lesion, hip dislocation should also be suspected. In 70% of cases, acetabulum fracture accompanies the dislocation.<sup>1</sup> Hip dislocations are in a posterior direction in 80–90% of cases and towards the anterior region in 10–15%. Central dislocation is seen in 2–4% of cases.<sup>2</sup> In cases with a posterior dislocation, the leg is typically held in a position of adduction and internal rotation. The extremity generally has an appearance of shortness. Damage to the femoral vein and nerves may be seen, particularly in anterior dislocations. To diagnose major dislocations, AP pelvis radiographs are usually sufficient.<sup>3</sup> In the emergency centre (EC), the patient experiences very severe pain from transportation on a trolley, the taking of radiographs, and the reduction procedure.<sup>4</sup> For pain control in these cases, apart from procedural sedation, a regional block can be applied. Fascia iliaca compartment and femoral nerve block may be used for pain control in cases that have presented at the EC with a femoral fracture.<sup>5,6</sup> However, the efficacy of a regional block applied

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FA: Femoral Artery, FN: Femoral Nerve, FL: Fascia Lata, FI: Fascia Iliaca

**Figure 1** a: Radiograph of dislocated right hip, b: ultrasound image showing landmarks of injection site, c: Radiograph image following enlocation.

for hip dislocation reduction is not fully understood. Application in hip dislocations may provide pain control during the reduction procedure and also help prevent complications associated with sedation or analgesia procedures. There is an increasingly widespread use of ultrasound guidance during the application of the regional block. Fascia iliaca compartment block (FICB) under ultrasound guidance can be applied easily in the EC.<sup>6</sup> This case report is that of a patient who presented with hip dislocation and underwent FICB under ultrasound guidance for reduction in the EC.

### Case report

A 26-year old male was brought to the EC after being struck by a motor vehicle. The patient was found to have BP of 135/85 mmHg, pulse of 90/min, and SpO<sub>2</sub> 95%. GCS was 15 and in the systemic examination, apart from pain in the left hip and difficulty with movement, no emergency pathology was determined. The left lower extremity sensory and peripheral artery examination was normal. Dislocation of the left femur was determined on direct radiograph (Fig. 1a).

It was decided to administer pain control before a reduction procedure, as the patient was in severe pain. Although the patient was haemodynamically stable, it is known that complications including respiratory depression may occur due to procedural sedation. For this reason, FICB with ultrasound guidance was applied instead of procedural sedation. A total of 30 mL injection was used during the procedure, comprised of 10 mL normal saline, 10 mL bupivacaine HCl (0.5%) and 10 mL lidocaine HCl (1%).<sup>5</sup> After sterilisation, the injection was applied 2/3 of the distance distally down an imaginary line conjoining the spina iliaca anterior superior and symphysis pubis (Fig. 1b). The injection was applied to the fascia iliaca compartment region by passing through fascia lata and fascia iliaca under ultrasound guidance. After sufficient anaesthesia was provided, the dislocation was successfully reduced on the first attempt using the Allis technique (Fig. 1c). There were no complications associated with the regional block. Following the reduction procedure, the patient was hospitalised to the orthopaedics clinic for observation.

### Discussion

Hip dislocations should be reduced within 6 h for optimal outcome. In the majority of posterior dislocation reductions, the Stimson and Allis techniques are used.<sup>3</sup> Reduction of hip dislocation is a difficult and painful procedure, and procedural sedation is generally used. However, various life-threatening complications may develop with procedural sedation. FICB may also be used in EC management of femoral fractures and dislocation.<sup>5,7</sup> Femoral nerve block for pain control associated with femoral fractures provides pain reduction by a significant degree after 15–30 min, and this relief is known to be able to last for up to 4 h.<sup>6</sup> In hip dislocations in patients with a femoral prosthesis, pain control for the reduction procedure can be accomplished with FICB.<sup>8</sup> The block can be performed easily and successfully under ultrasound guidance.<sup>9</sup> FICB is easy to apply and carries a low risk for the development of side effects. Pain relief and facilitation of the reduction procedure can increase the satisfaction of both the patient and physician. In addition, as in the case presented here, the time spent in the EC is decreased and the risks of side effects associated with sedation medications are avoided.

### Author's contribution

UK and YEE conceived the original idea, UK and IA designed the case, and UK, FD and SKT prepared the manuscript. All authors contributed to the final manuscript.

### Conflict of interest

The authors declare no conflict of interest.

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