

ORIGINAL ARTICLE

**Should lower limb fractures be treated surgically in patients with chronic spinal injuries? Experience in a reference centre** ☆



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**KEYWORDS**

Lower limb fractures;  
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injury;  
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Conservative  
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**Abstract**

*Objective:* To report the outcomes of surgical treatment of lower limb fractures in patients with chronic spinal cord injuries.

*Material and method:* A total of 37 lower limb fractures were treated from 2003 to 2010, of which 25 fractures were treated surgically and 12 orthopaedically.

*Results:* Patients of the surgical group had better clinical results, range of motion, bone consolidation, and less pressure ulcers and radiological misalignment. No differences were detected between groups in terms of pain, hospital stay, and medical complications.

*Discussion:* There is no currently consensus regarding the management of lower limb fractures in patients with chronic spinal cord injuries, but the trend has been conservative treatment due to the high rate of complications in surgical treatment.

*Conclusions:* Chronic spinal cord injuries patients with lower limb fractures who are treated surgically achieved a more reliable consolidation, practically a free range of motion, low rate of cutaneous complications, and pain associated with the fracture. This allows a quick return to the previous standard of living, and should be considered as an alternative to orthopaedic treatment in these patients.

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**PALABRAS CLAVE**

Fractura extremidad inferior;  
Lesión medular crónica;  
Tratamiento quirúrgico;  
Fijación quirúrgica;  
Tratamiento conservador

## ¿Se deben tratar quirúrgicamente las fracturas de extremidad inferior en pacientes con lesiones medulares crónicas? Experiencia en un centro de referencia

**Resumen**

**Objetivo:** Conocer los resultados del tratamiento quirúrgico de las fracturas de extremidad inferior en los pacientes con lesiones medulares crónicas.

**Material y método:** Entre el 2003-2012 se trataron 37 fracturas de extremidad inferior, divididas en 2 grupos según su tratamiento, 25 en el grupo quirúrgico y 12 en el grupo conservador.

**Resultados:** El grupo quirúrgico presentó mejores resultados en cuanto a balance articular, consolidación ósea, alineación radiológica y menor número de úlceras por presión. No se detectaron diferencias entre grupos en cuanto a estancia hospitalaria, número de complicaciones médicas y control del dolor.

**Discusión:** Actualmente no hay consenso respecto al manejo de las fracturas de extremidad inferior en lesionados medulares crónicos, pero la tendencia ha sido el tratamiento conservador escudándose en la alta tasa de complicaciones del tratamiento quirúrgico.

**Conclusiones:** En fracturas de extremidad inferior en lesionados medulares crónicos, la estabilización quirúrgica presenta mejores resultados de consolidación ósea, un balance articular prácticamente libre, una baja tasa de complicaciones cutáneas y dolor asociado a la fractura. Todo ello permite un rápido retorno al nivel previo de la lesión, por lo que se debe tener en cuenta como alternativa al tratamiento conservador.

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**Introduction**

Bone density decreases in patients with chronic spinal cord injuries (cSCI) due to the absence of neurological and load stimuli.<sup>1-4</sup> However, this observation is yet to be quantified in paraplegic and tetraplegic patients with associated fractures.<sup>5</sup> There is currently no consensus on the best therapeutic strategy for these types of fractures.<sup>6-14</sup> In lower limb fractures (LLF) occurring simultaneously with an acute spinal cord injury, internal fixation is preferred.<sup>12,15-20</sup> By contrast, conservative treatment is preferred for cases of LLF in patients with chronic paraplegia or tetraplegia.<sup>7,8,11,17</sup> However, this tendency has been a matter of debate in recent years.<sup>19-24</sup>

In our unit, a spinal cord injury reference centre in Spain, therapeutic decision making has been made difficult by a lack of scientific evidence, and is based on the experience of our surgical team. The aim of this article is to establish the outcomes of surgical treatment for lower limb fractures in cSCI. Our working hypothesis is that surgical treatment of LLI is better than nonsurgical treatment, and our null hypothesis is that both treatments achieve similar outcomes.

**Material and method**

A retrospective analysis between 2003 and 2012 that recorded 37 LLF in 25 patients with cSCI (6 tetraplegias and 19 paraplegias). The fractures included occurred at least



**Figure 1** (A) Antero-posterior and lateral radiography of a right tibial plateau fracture 41.B1. (B) Synthesis using lateral plate with locking screws; very good outcome according to Schmeiser et al. criteria.

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