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Traumatic Posterior L4-L5 Fracture Dislocation of the Lumbar Spine: A Case Report

Abstract

Study Design

Case report.

Objective

The diagnosis and surgical management of a patient with traumatic bilateral posterior dislocation of L4-L5 is presented with a thorough review of the existing literature.

Summary of Background

Data Traumatic dislocation of L4-L5 has been reported in the English literature in only five cases; of these, only two were retrolisthesis.

Methods

A 20-year-old patient was involved in a high-energy vehicular accident and presented with back pain and inability to ambulate. Neurological assessment showed motor strength grade 2/5 in the lower-extremity muscle groups (L1-L3 myotomes) and 0/5 strength distally (L4-S1 myotomes); in addition, incontinence of sphincters was found. X-rays and computed tomography (CT) scan revealed a three-column ligamentous injury with posterior fracture-dislocation of the L4 vertebral body with complete posterior displacement of L4 to L5 vertebral body. The patient underwent posterior approach with reduction, transpedicular fixation, and posterolateral fusion with autologous bone graft.

Results

At 1-year follow-up, the patient had recovered muscular strength in proximal lower-extremities muscle groups, sphincter function had fully recovered, and he was able to ambulate with crutches. There was no recovery of distal extremity sensorimotor function. Plain radiograph and CT scan showed good alignment and progressive maturation of his fusion procedure.

Conclusion

Traumatic retrolisthesis of L4-L5 is a high-energy unstable fracture; reduction of the dislocation is challenging because of the heavy forces acting in the lower lumbar spine. Instrumented fusion restores alignment and maintains segmental stability.

## 創傷性腰椎後 L4-L5 骨折脫位的病例報告

### 研究設計

病例報告。

### 目的

報告一位創傷性雙側後 L4-L5 脫位病人的診斷和手術治療 並徹底檢閱現有的文獻。

### 背景資料摘要

關於 L4-L5 創傷性脫位的報告，在英文文獻中只有 5 個病例；在這些病例中，只有兩個是後滑脫的。

### 方法

一個 20 歲的病人在一個高能量的車禍中受傷和出現背部疼痛和不能走動。神經系統評估顯示近端的下肢肌肉群（L1-L3 的肌節）的活動強度等級是 2/5，而遠端（L4-S1 肌節）的活動強度是 0/5；此外，還發現括約肌失禁。X-射線和計電腦斷層掃描（CT）顯示三列的韌帶損傷和後 L4 椎體的骨折脫位，並發現完整的 L4 至 L5 椎體後移。患者接受了後路手術包括復位，椎弓根內固定，後外側植骨融合與自體骨移植。

### 結果

在 1 年的跟進中，病人近端下肢肌肉群的肌肉力量已經恢復，括約肌功能完全恢復，和他能夠用拐杖走動。遠端肢體的感覺運動功能則沒有康復。X 光片和 CT 掃描顯示腰椎融合手術有良好的調整和逐步成熟。

### 結論

創傷性 L4-L5 後滑脫是一個高能量不穩定的骨折，因為重力作用在下腰椎位置，因此對脫位的位置進行復位手術也是很具挑戰性的。內固定融合修復整體排列和保持節段的穩定性。