

Surgical Outcomes of Osteoporotic Vertebral Collapse: A Retrospective Study of Anterior Spinal Fusion and Pedicle Subtraction Osteotomy

Abstract

The purpose of this retrospective study was to demonstrate the surgical outcomes of anterior spinal fusion (ASF) and posterior subtraction osteotomy (PSO) for osteoporotic vertebral collapse (OVC). Forty patients who underwent surgery for OVC at the thoracolumbar junction with neurological deficits were included in this study. ASF was primarily chosen for patients without vertebral compression fracture at other levels, and PSO was chosen for patients with more severe kyphosis or with multiple vertebral fractures. ASF was performed in 26 patients and PSO was performed in 14 patients. We evaluated the pre- and postoperative clinical status consisting of pain, gait, paralysis, and bladder function analysis. Additionally, pre- and postoperative kyphosis, correction angle, correction loss, and upright balance were investigated radiologically. Improvements in pain level, gait, paralysis, and bladder function were obtained in both groups. Average correction angles in the ASF and PSO groups were 16 and 37, respectively. Average correction losses at the final follow-up in the ASF and PSO groups were 7 and 13, respectively. Newly developed postsurgical vertebral compression fracture adjacent to the level of instrumentation was observed in four patients (15%) in the ASF group and in 11 patients (79%) from the PSO group. ASF provided satisfactory outcomes for patients with thoracolumbar OVC, who have no vertebral compression fracture at other levels. Although PSO has benefits for the correction of kyphosis, several problems persist with this procedure, especially for patients with severe osteoporosis.

骨質疏鬆性椎體崩塌的手術結果: 前路脊柱融合和經椎弓根椎體截骨的回顧性研究

本回顧性研究的目的是為了顯示以前路脊柱融合手術 (ASF) 和經椎弓根椎體截骨術 (PSO) 對骨質疏鬆性椎體崩塌 (OVC) 的手術結果。這項研究中包括了 40 名已接受手術的患者，他們都在胸腰椎交界處出現 OVC 並有神經功能缺損的。ASF 是首要選擇給其他節段沒有椎體壓縮性骨折的患者，而 PSO 則被選擇給定為更嚴重的脊柱後凸或多個椎體骨折的患者。26 名病人進行了 ASF 和 14 名病人進行了 PSO。我們評估了術前和術後的臨床狀態，包括疼痛，步態，癱瘓，和膀胱功能分析。此外，術前和術後脊柱後凸，角度校正，校正損失，和直立平衡都透過放射影像進行分析。在這兩個組別中疼痛程度，步態，癱瘓，膀胱功能得到了改善。在 ASF 和 PSO 組別的平均校正角度分別為 16 和 37。在最後的跟進中，ASF

和 PSO 組別的平均校正損失分別為 7 和 13。中觀察到 4 例（15%）在 ASF 組別中，有 4 名病人（15%）在術後內固定節段相鄰出現新發展的椎體壓縮性骨折，而 PSO 組別中則有 11 名病人（79%）出現以上情況。對胸腰椎 OVC 而沒有其他節段椎體壓縮性骨折的患者，ASF 提供了令人滿意的成果。雖然 PSO 對矯正脊柱後凸有好處，但此手術仍然有一些問題存在，特別是對嚴重的骨質疏鬆症患者。