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骨密度与退行性腰椎滑脱症手术疗效的相关性分析

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The correlation between bone mineral density and surgical outcomes of lumbar degenerative spondylolisthe

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摘要 目的 探讨接受腰椎后路椎体间融合术(posterior lumbar interbody fusion, PLIF)的退行性腰椎滑脱症患者骨 密度(bone mineral density, BMD)与术后疗效的相关性。方法 回顾性分析2006年1月至2010年12月，接受PLIF术治疗 的69例退行性腰椎滑脱症患者资料。根据腰椎BMD，将患者分为骨量正常组(T ≥-1.0)33例[男16例，女17例；年龄 (56.5±9.0)岁；L4，5滑脱20例，L5S1滑脱13例]和骨量减少组(T＜-1.0)36例[男13例，女23例；年龄(60.5±7.8)岁； L_4，$_5$滑脱21例，L_5S_1滑脱15例]。记录两组患者手术时间、术中出血量及手术并发症等。应用视觉模拟评分(visual analogue scale, VAS)评估手术前、后腰腿痛情况；应用Roland-Morris(RM)量表评估患者手术前后功能障碍改善情况。对两组患者的年龄、体重指数、术中出血量、VAS改善、RM改善的差异进行比较；分析不同骨量与性别、年龄、椎弓根螺钉松动、融合器沉降、融合率及病变节段的相关性。结果 骨量正常组患者术后VAS和RM评分分别为(2.42±0.83)分和(4.06±1.34)分，骨量减少组VAS和RM评分分别为(2.61±1.02)分和(4.61±2.39)分，与各自术前VAS和RM评分比较，差异均有统计学意义。骨量正常组平均出血量(415.5±105.8)ml，显著低于骨量减少组(528.3±128.7)ml，两组比较差异具有统计学意义。骨量正常组平均手术时间为(169.7±44.3)min，骨量减少组平均手术时间为(176.4±42.6)min，两组比较差异无统计学意义。 骨量正常组的VAS和RM改善与骨量减少组比较，差异均无统计学意义。手术出血量与BMD呈负相关(r=-0.407，P=0.001)，BMD越低，手术出血量越多。而BMD与手术时间、VAS改善、RM改善、融合器沉降、不融合、螺钉松动等无明显相 关性。结论 退行性腰椎滑脱症患者接受PLIF术治疗时，BMD与出血量呈负相关，BMD越低，手术出血量越多；其他手术 指标和并发症与BMD无明显相关性。

关键词： 骨密度 腰椎 脊柱融合术

Abstract: Objective To observe the correlation between bone mineral density (BMD) and surgical outcomes of posterior lumbar interbody fusion (PLIF) for lumbar degenerative spondylolisthesis (DS). Methods From January 2006 to December 2010, 69 patients with DS had undergone PLIF by the same surgical team. According the BMD, the cases were divided into two groups. Normal group (T ≥-1.0) had 33 cases [Male 16 cases, Female 17 cases; mean age, (56.5±9.0) yrs; L4, 5 20 cases, L5S1 13 cases]. The osteopenia group (T＜-1.0) had 36 cases [Male 13 cases, Female 23 cases; mean age, (60.5±7.8) yrs; L4, 5 21 cases, L5S1 15 cases]. Blood loss, surgical duration, intra? and post?operative complications were collected. The clinical improvement was quantified by measurement of pain (visual analogue scale, VAS) and Roland?Morris (RM) Disability Questionnaire. Between two groups, the differences of age, body mass index, blood loss, VAS improvement, and RM improvement were compared. The correlation between BMD and sex, age, segment, screw loose, nonunion, and cage subsidence was analyzed. Results In two groups, the difference between pre? and post?operative RM and VAS was significant respectively. The blood loss was 415.5±105.8 ml in normal group, significantly less than 528.3±128.7 ml in osteopenia group. There was no significant difference in the duration between normal group (169.7±44.3 min) and osteopenia group (176.4±42.6 min). The improvement of VAS and RM between two groups had no significant difference. There was a negative correlation between the BMD and blood loss（r=-0.407, P=0.001）. The other surgical outcomes (surgical duration, VAS improvement, RM improvement, cage subsidence, nonunion, screw loose and etc.) had no correlation

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with BMD. Conclusion There is a negative correlation between the BMD and blood loss in DS patients managed by PLIF. BMD has no effect on other surgical outcomes

Key words： Bone density Lumbar vertebrae Spinal fusion

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