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腰椎管狭窄症肥厚黄韧带的病理学研究及其与腰椎过度伸屈运动的相关性 [点此下载全文](#)

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摘要:

摘要目的: 观察弹性纤维与胶原在正常黄韧带和肥厚黄韧带内不同应力部位的变化情况, 探讨腰椎过度屈伸活动造成黄韧带损伤后其内部胶原过度表达所致纤维化与黄韧带厚度的相关性。方法: 腰椎手术中收集黄韧带标本20例, 其中10例来自腰椎间盘突出患者正常厚度黄韧带, 设为对照组 (n=10); 10例来自因黄韧带肥厚导致腰椎管狭窄患者的黄韧带 (n=10)。对比正常黄韧带和肥厚黄韧带及肥厚黄韧带不同应力部位 (腹侧部、中间部、背侧部) 之间的弹性纤维和胶原表达差异; 鉴定表达胶原类型; 分析黄韧带厚度与黄韧带纤维化程度的相关性。结果: 两组患者黄韧带厚度存在显著性差异 ($P<0.01$); 肥厚黄韧带内弹性纤维减少、胶原表达增多, 纤维化程度明显高于正常黄韧带组; 应力集中的肥厚黄韧带背侧部胶原表达增多、纤维化程度明显高于中间部和腹侧部; 过度表达的胶原为 I 型和 III 型胶原; 黄韧带厚度与黄韧带纤维化程度呈显著正相关 ($r=0.77$)。结论: 弹性纤维减少、I 型和 III 型胶原表达增多形成纤维化是导致黄韧带肥厚造成腰椎管狭窄的主要病因, 在应力集中的黄韧带背侧部表达更显著, 脊柱康复运动应避免过度腰椎屈伸活动。

关键词: [黄韧带肥厚](#) [弹性纤维](#) [胶原](#) [纤维化](#) [腰椎管狭窄](#) [腰椎康复运动](#)

Pathological analysis of ligamentum flavum hypertrophy from lumbar spinal canal stenosis and its relation with excessive flexion-extension movement of lumbar spine [Download Fulltext](#)

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Abstract:

Abstract Objective: To investigate the distribution of elastic fiber and collagen in the ventral part, middle part, dorsal part of normal ligamentum flavum(LF) and hypertrophic LF and to discuss the relation between excessive flexion-extension movement and LF fibrosis and thickness of LF. Method: Twenty LF were collected from patients with lumbar spinal stenosis(LSS) and lumbar disc herniation(LDH) in surgery. There were 10 patients with LSS and 10 patients with LDH selected as an experimental group and control group respectively. The contents of elastic fibers and expression of collagen in normal LF and hypertrophic LF were assessed and the types of collagen were evaluated. Data were collected from 3 regions of LF: ventral, middle, and dorsal parts. The correlation between fibrosis score and thickness of LF was analyzing. Result: The thickness of LF was significantly thicker in the patients with LSS than in those with LDH ($P<0.01$). Elastic fiber decreased and collagen increased in hypertrophic LF, and the fibrosis scores in LF were significantly higher in the patients with LSS especially in dorsal parts. The over-expression collagens were identified as collagen type I and collagen type III. The fibrotic scores increasing with thickness of LF showed a significant positive linear correlation ($r=0.77$). Conclusion: Elastic fiber decreasing and collagen type I, III increasing cause fibrosis and LF hypertrophy of especially in dorsal part. This is a risk factor for lumbar spinal canal stenosis. Excessive flexion-extension movement in lumbar spine should be avoid in rehabilitation treatment.

Keywords: [ligamentum flavum hypertrophy](#) [elastic fiber](#) [collagen](#) [fibrosis](#) [lumbar spinal canal stenosis](#) [rehabilitation treatment of lumbar spine](#)

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