

Do autologous growth factors enhance transforaminal lumbar interbody fusion?

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Received: 12 August 2002
Revised: 18 December 2002
Accepted: 14 February 2003
Published online: 22 May 2003
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Abstract Pseudarthrosis remains a significant problem in spinal fusion. The objective of our study was to investigate the effects of autologous growth factors (AGF) in instrumented transforaminal lumbar interbody spinal fusion (TLIF). A prospective review was carried out of 23 patients who underwent TLIF with application of AGF, with a minimum 2-year follow-up. Comparison with our historical cohort (without AGF application) was performed. Mean age at surgery was 44.3 years in the AGF treatment group. Twelve had a positive smoking history. Fourteen had undergone previous spinal surgeries. Thirteen received one-level fusions and ten received two-level fusions. The radiographic results showed a fusion rate of 100% in one-level fusions and 90% in two-level fusions.

There was no significant difference in pseudarthrosis rates between the AGF treatment group and historical cohort. Excluding the cases with pseudarthrosis, there was faster bony healing in patients who had been treated with AGF application. This study indicates that although AGF may demonstrate faster fusions, it does not result in an overall increase in spinal fusion rates. Further studies are needed before AGF can routinely be used as an adjunct in spinal fusion.

Keywords Autologous growth factors (AGF) · Platelet derived growth factor (PDGF) · Pseudarthrosis · Transforaminal lumbar interbody fusion (TLIF) · Transforming growth factor-beta (TGF- β)