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Paper Title:	The study of a new tethering device on the biomechanics of short-segment fusion in the lumbar spine: A finite element analysis
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Abstract

This study focused on the feasibility and effects of a new tethering device with various configuration parameters on short-segment fusion of the lumbar spine. A finite element model of the human lumbar spine (L1-L5) was used to simulate posterior lumbar interbody fusion (PLIF) with and without the new tethering device across the conventional instrumentation. The results were calculated in terms of range of motion (ROM), intradiscal pressure (IDP), and facet joint force (FJF), which are biomechanical factors related to adjacent segment disease (ASD). The results show that the new tehthering device has potential to improve the biomechanical factor when compare to standard PLIF. The finding in this study will be helpful to understand the behavior of tethering device and optimal configuration for most effective clinical result.