PEEK Versus Ti Interbody Fusion Devices: Resultant Fusion, Bone Apposition, Initial and 26 Week Biomechanics


THE INFLUENCE of material properties and surface finish on initial stability and resultant spinal fusion remains controversial. This in vivo sheep fusion study directly compared a titanium coated, axially compliant titanium cage to a solid PEEK cage to evaluate fusion and bone apposition at 13 and 26 weeks.

All levels in both groups were fused at 26 weeks and range of motion in all modes was reduced by over 70% compared to intact values. Although bone apposition was higher on the titanium coated surface, the fusion rates and mechanical properties of the fusions were equivalent in both groups. This study demonstrates that a coated titanium device engineered with axial compliance can produce a fusion equivalent to a PEEK device (when similar volumes of bone graft are used).
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