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47

Bone graft substitutes for spine fusion: A brief review

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Abstract

Bone graft substitutes are widely used in the field of orthopedics and are extensively used to promote vertebral fusion. Fusion is the most common technique in spine surgery and is used to treat morbidities and relieve discomfort. Allograft and autograft bone substitutes are currently the most commonly used bone grafts to promote fusion. These approaches pose limitations and present complications to the patient. Numerous alternative bone graft substitutes are on the market or have been developed and proposed for application. These options have attempted to promote spine fusion by enhancing osteogenic properties. In this review, we reviewed biology of spine fusion and the current advances in biomedical materials and biological strategies for application in surgical spine fusion. Our findings illustrate that, while many bone graft substitutes perform well as bone graft extenders, only osteoinductive proteins (rhBMP-2 and OP-

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