Initial Experience with BoneBac PressTM a Novel Autologous Bone Graft Harvesting and Collection Device

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Introduction

Spinal fusion surgeries have become more common as indications have expanded and clinical data regarding sustained outcomes improvements are being published. Spine fusion is used to treat traumatic fractures, degenerative disease, and pain from abnormal motion. For a successful fusion, there must be growth of new bone which provides a more ideal stiffness and modulus than the initially -implanted instrumentation.

Even though there has been tremendous growth in the number of bone graft extenders, biologic factors, and other materials to replace or regenerate bone, autograft bone graft material remains the gold standard for fusion.

Learning Objectives

By the conclusion of this session, participants should be able to: 1) Describe the importance of autograft use in spinal fusion procedures, 2) Discuss the morbidity of autograft collection from the iliac crest, 3) Identify how this autograft collection device can prevent waste of good autograft material and reduce surgical costs.

BoneBac Press

The press has an intake port for bone chips and dust and an output port which connects to OR wall suction.

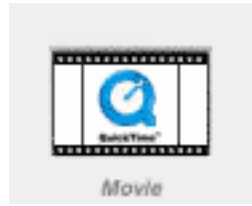
Initial Series Results

Methods

Twenty-nine patients underwent fusion procedures in the cervical, thoracic, or lumbar spine using the BoneBac PressTM. We describe our initial clinical experience with a novel reusable bone-collecting system that is able to effectively recycle bone drilled from the surgical site. Procedures preformed included anterior cervical discectomy or corpectomy, thoracic corpectomy, and posterior lumbar surgery in which fusion was performed. The amount of bone graft collected from each level was determined as well as the need for additional bone graft extenders.

Results

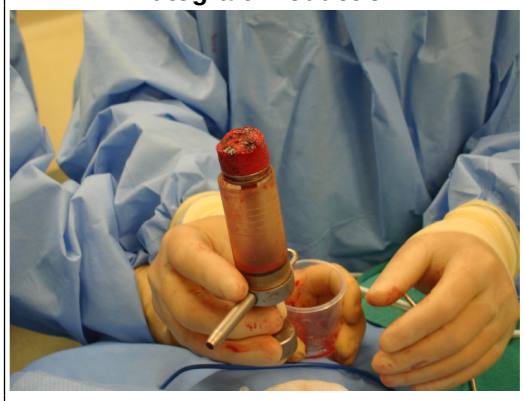
A total of 39 levels were operated upon collecting a total 91.0 cc of autograft. The average amount of bone collected was 2.3 cc/level. In the cervical, thoracic and lumbar spine the average amount of bone collected per level was 1.75 cc, 8.5 cc, and 3.5 cc respectively. In most cases no additional bone graft extender was needed. An independent analysis of fusion rates using same site bone collected revealed a greater than 95% fusion rate was achieved at 6 months. The autologous bone collected had excellent handling characteristics and was easily packed into cages or placed posterolaterally.



Conclusions

The use of autograft bone material collected using the BoneBac PressTM is cost-effective and provides excellent fusion rates while significantly reducing bone graft cost and donor graft site morbidity.

Autograft Production



After bone chips and dust are suctioned into the canister and pressed, the autograft is easily produced in the form of a circular disc.