

Polyaxial Bone Screw with Lag (Cervical)

Summary

This polyaxial bone screw is designed for use in orthopedic procedures to connect cervical vertebrae with spinal rods. Unlike existing screws which may lose their polyaxial functionality, this screw is designed to maintain its range of motion. This improved design may result in added intraoperative control for surgeons, as well as superior results for patients post-procedure when compared to use of existing technologies.

Key Investigator

Christopher Chaput, MD

Field

Orthopedics

Technology

Bone Screws and Systems for Cervical Vertebrae Fusion

Key Features

- Preserves polyaxial functionality
- Provides opportunity for multi-screw constructs
- Provides added intraoperative control for surgeons

Stage of Development

Preclinical

Status

Available for licensing—cervical field

Patent Status

Patent Pending
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Market

It is estimated that as many as 465,000 spinal fusion procedures are completed annually. Polyaxial Bone screws and lag screws are often used in spinal surgery to complete fusions.

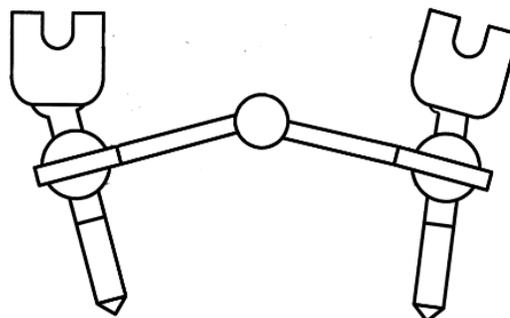
However, current polyaxial bone screws can be screwed in too far or at an improper angle such that the rounded head becomes incapable of being polyaxially coupled to the cap, and lag screws are not designed with intrinsic polyaxial ability making them difficult to incorporate into a multi-screw construct at varying angles.

This bone screw invention provides a solution to these issues as it is designed to preserve the polyaxial functionality while also providing a lag.

Technology

This bone screw encompasses a dilated portion of the screw shaft located between the screw head and the threaded portion that allows for preservation of the polyaxial functionality of the screw head.

This bone screw also provides a lag effect allowing two fractured bones or joints to be compressed by the force of the screw when coupled with another polyaxial screw and lag plate. This design allows for coupling of crosslinks for multi-screw constructs at the dilated point of the screw shaft.



One Embodiment of the bone screw system comprising two bone screws and a crosslink