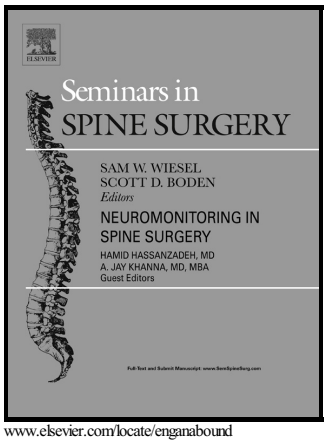

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Operative Techniques for the Management of Traumatic Instability in the Cervical Spine

Joseph S. Butler[1], C. Chambliss Harrod[2], Ashley R. Poynton[3]

[1]Rothman Institute & Thomas Jefferson University, 925 Chestnut Street, 5th Floor, Philadelphia, PA, 19107.
[2]The Spine Center, Bone & Joint Clinic of Baton Rouge, Baton Rouge, USA.
[3]Poynton SpineCare Institute, Mater Private Hospital, Dublin, Ireland.

Abstract

Operative techniques to treat traumatic cervical instability have evolved with the development of techniques such as occipital segmental plating, C1 lateral mass screws, a variety of C2 fixation techniques, C1/C2 transarticular screw fixation, in addition to lateral mass and pedicle screws in the subaxial cervical spine. These advances have led to benefits, such as improved construct strength and enhanced biomechanical stability. In the current era, it is essential to have a good familiarity with the types of instrumentation available and a comprehensive understanding of the regional anatomy to avoid complications and optimize clinical outcomes.

Introduction

Cervical spine fixation techniques have undergone significant advances in recent decades. Prior to the introduction of modern rod-and-screw fixation techniques, treatment strategies for cervical instability were limited to wire fixation and external immobilization with halo vests, Minerva casts, and cervical collars. Recent advances in surgical technology have transformed the management of cervical spine trauma, resulting in superior biomechanical stability and higher rates of fusion[1]. Irrespective of the type of instrumentation, the goals of internal fixation in the cervical spine remain the same; to facilitate reduction, provide stability, maintain alignment, promote satisfactory fusion and allow early rehabilitation[2].

The purpose of this article is to review the current surgical techniques for treating traumatic instability of the cervical spine, providing a thorough understanding of the indications and utility of the various types of instrumentation available, and an