

Spine (incl. trauma)

## **Utility of intra-operative Cone-Beam Computer Tomography (O-Arm) and Stereotactic Navigation in acute spinal trauma surgery**

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### **Abstract**

#### INTRODUCTION

Intra-operative cone-beam computed tomography (O-ARM), frequently coupled with stereotactic navigation, has an emerging role in the surgical management of acute spinal trauma

#### OBJECTIVES

The purpose of this study was to describe the emerging role of intra-operative cone-beam computed tomography (O-ARM), frequently coupled with stereotactic navigation, in the surgical management of acute spinal trauma. By detailing our initial 2-year experience highlighting its potential advantages and include technical tips to guide its effective use.

#### METHODS

All acute spinal trauma cases that utilized O-arm with/without stereotactic navigation between May 2009 and May 2011 were identified from a prospectively collected spine database. During the same period of time, cases with or without O-arm support were compared for their rates of implant malposition requiring revision surgery. Technical factors associated with successful application of this technology in the setting of acute spinal trauma were recorded and are described.

#### CONCLUSION

Keys to successful use of O-arm include meticulous pre-operative planning and proper set-up. Intra-operative awareness and attentiveness to the potential inaccuracies in the image-guidance due to movement is imperative in these unstable injuries.