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## Analysis of radiation dose in open versus percutaneous posterior spinal stabilisations – a prospective single surgeon experience.

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With the advent of improved understanding of spinal biomechanics and advances in the development of new minimally invasive approaches to the spine, the number of posterior spinal stabilisations (PSS) procedures being performed is increasing. As a result of the need for fluoroscopy during stabilisations, radiation exposure is a potential patient issue. The aim of this study was to analyse the radiation dose used in open versus percutaneous PSS. An analysis of a prospectively maintained database of all patients undergoing PSS carried out by a single surgeon from 2007-2015 was performed. Radiation dosage and data was collated from hospital databases, theatre registers and patient charts. Statistical analysis was performed using Minitab V18 with  $p < 0.05$  considered significant. In our unit PSS was performed on 130 patients for trauma and metastatic disease. Of these 72% were open 28% were percutaneous ( $p < 0.05$ ). Higher radiation doses were associated with percutaneous intervention, 3D imaging and newer generation equipment. Spinal surgery is a field with ever increasing influx of new technologies and the search for improved image quality with guidance systems is a major goal. It is prudent to monitor and control excessive doses of ionising radiation to allay any potential morbidity and risk to patient care.

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