

AB191. Predictors of conversion from minimally invasive to open adrenalectomy—a systematic review and meta-analysis of observational studies

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Background: Minimally invasive adrenalectomy is the standard of care internationally in benign disease. Intra-operative conversion to open surgery is associated with increased morbidity and prolonged hospital stay. The aim of this systematic review is to identify risk factors associated with intra-operative conversion of minimally invasive adrenalectomy.

Methods: This systematic review was conducted according to MOOSE guidelines. PubMed, EMBASE and Cochrane library were systematically searched for observational studies evaluating risk factors for intra-operative conversion of minimally invasive adrenalectomy to open surgery. The main outcomes were patient demographics, patient

characteristics, tumour characteristics and histology.

Results: Eight studies met the inclusion criteria for analysis with a total of 2,547 patients. 5.46% (n=139) required intra-operative conversion. 71.9% (n=1832) underwent laparoscopic transperitoneal adrenalectomy. There were no significant associations between patient demographics or characteristics and intra-operative conversion. Tumour characteristics such as right sided tumours [pooled odds ratio (OR), 1.51; 95% CI, 0.98–2.32; P=0.06] and increasing tumour size (OR, 2.29; 95% CI, 1.4–3.74; P=0.001) were shown to be significantly associated with an increased risk of conversion. Pheochromocytoma (OR, 2.21; 95% CI, 1.89–2.58; P<0.0001) and malignancy (OR, 5.38; 95% CI, 2.1–13.81; P=0.0050) were also significant predictors of intra-operative conversion.

Conclusions: Minimally invasive adrenalectomy has significantly reduced post-operative morbidity in patients requiring adrenal surgery but the need for intra-operative conversion remains significant. Identifying patients at increased risk of conversion pre-operatively may assist intra-operative decision making and contribute to improved patient outcomes.

Keywords: Adrenalectomy; laparoscopic surgery; pheochromocytoma

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