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Trauma Laparoscopy – Challenges and Future Applications

Aims

Recent innovation in the fields of robotics, optics, miniaturisation and computing hold promise that minimally invasive surgery (MIS) will result in a paradigm shift in the future of surgical trauma care. This article assesses the current and future applications of laparoscopy in trauma management.

Methods

A literature search of the PubMed/MEDLINE, Cochrane Library, Web of Science and National Institute for Health and Care Excellence Evidence databases using entry sets of Medical Subject Headings (MeSH) for Abdomen (or Abdominal), Trauma and Laparoscopy (or Laparoscopic) as well as a comparative search of the grey literature was also carried out.

Results

2,623 unique articles were screened. Following abstract review, 64 articles were selected for further analysis. Results show laparoscopy in abdominal trauma is associated with fewer complications, reduced length of stay, morbidity and negative laparotomy rates in haemodynamically stable patients. Current systematic reviews are based on low quality studies with great degrees of heterogeneity. Alternative MIS methods such as endoscopy and angioembolisation have been successfully used as adjuncts during non-operative management of abdominal trauma.

Conclusions

To increase preparedness for the inevitable rise in the worldwide trauma burden, a concerted effort must be made to focus research efforts on multi-centre, prospective studies to produce meaningful guidelines. Hybrid non-operative and minimally invasive techniques will have a greater role to play in future trauma management. Dedicated training in MIS and increased research efforts are still needed if we are to effectively combat the societal and global burden of trauma.