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A systematic review of the reporting of surgical quality assurance and learning curve in robotic oesophagectomy

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Introduction: There is an increasing trend in novel robotic-assisted oesophagectomy in place of standard techniques, potentially due to its perceived technical benefits and improved post-operative outcomes. However, safety and efficacy remain uncertain and little is known about surgeons' expertise in this complex procedure. This review aims to summarise the reporting of surgeons' expertise in studies evaluating robotic oesophagectomy.

Method: Systematic searches of OvidSP, MEDLINE and Cochrane Library were conducted using key words for robotic surgery and oesophageal cancer. Searches were limited to human studies published up to February 2020. Studies reporting any type of outcome for robotic oesophagectomy were included. Data on quality assurance measures (e.g. type of centre, surgeons' experience, study entry criteria) and learning curve assessments were recorded.

Results: Of 954 abstracts screened, 226 full texts were reviewed and 103 included. Two studies were clinical trials. There were 85 (82.5%) single and 6 (5.8%) multi-centred institutions. Forty-four (43%) stated the type centre(s) involved: general (n = 1), specialist (n = 41) or mixed (n = 2). Thirteen (13%) reported centres' caseload of robotic and non-robotic oesophagectomies within a defined period. Seven described surgeons' prior experience in robotic oesophagectomy, and 5 described experience in open/laparoscopic surgery. Two stipulated entry criteria for surgeons (training qualification and number of robotic oesophagectomies performed). Eighteen (17%) assessed the learning curve through changes in operating time, complications and conversion rates.

Discussion: There is currently inadequate reporting on surgeons' expertise in robotic oesophagectomy, making comparisons with standard techniques challenging. This highlights the need for better transparency when reporting surgical innovation, as outlined by the IDEAL framework.