



Commentary

Outcomes of single versus two stage oesophagectomy for squamous cell carcinoma

Paul R Burton^{*,a}

^a Monash University Department of Surgery, Alfred Hospital, Level 6, Alfred Centre, 99 Commercial Road, Melbourne VIC Australia 3004

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Xue and colleagues [1] have conducted a systematic review and pooled analysis comparing available data on outcomes of two different operations performed for middle and lower third oesophageal squamous cell carcinoma. These data are most relevant to 'Eastern' centres, where high volume oesophageal surgery for squamous cell carcinoma is performed. Data provided is also highly applicable to 'Western' centres where surgery for oesophageal squamous cell carcinoma is still part of the workload, but far less common.

Oesophageal cancer remains a global health care challenge and a major cause of mortality worldwide. The majority of the worldwide burden of oesophageal cancer is squamous cell carcinoma [2]. This is despite marked increases in the incidence of oesophageal adenocarcinoma (up to 400%), over the past 40 years, in many countries such as United Kingdom, Australia and The United States [3].

Surgery remains the mainstay of curative treatment for both histological types of oesophageal cancer, particularly lower and middle third thoracic tumours. Localised carcinoma of the upper thoracic or cervical oesophagus is often treated with curative intent chemoradiotherapy. Pre-operative treatment of T2 or greater lower third oesophageal adenocarcinoma with chemotherapy or radiotherapy is almost always indicated [4]. In contrast, single modality therapy with surgery alone, is still used in many centres for squamous cell carcinomas (less than 10% of the cases included in Xue's study received neoadjuvant therapy).

This study aimed to conduct a pooled analysis comparing a single incision (left sided thoracotomy) procedure, which would be considered to provide more efficient surgery, with the better exposure provided by a two phase (Ivor-Lewis) approach using separate abdominal and (right sided) thoracic incisions. The two-phase approach requires dividing the surgery into two separate components, with closure of the abdominal cavity, prior to repositioning the

patient and a new incision being made to perform the thoracic component.

Xue determined, from a pooled analysis of 2451 patients derived from seven studies, that there were no substantial differences in key outcome measures of survival and post-operative complications. Lymph node yield was significant higher, but only by a mean of 4, using the two-phase approach. This was at the expense of a very substantially increased operating duration of over 100 min. Hospital length of stay was similar despite the difference in operative time.

The difference in lymph node yield did not translate to an effect on overall outcomes. Whether increasing lymph node salvage is an indicator of better surgical quality or potentially provides improved survival in oesophageal squamous cell carcinoma remains unclear. Data from squamous cell carcinomas arising in other areas would suggest a correlation between increased lymph node yield and better outcomes [5]. Alternatively, in adenocarcinoma of the oesophagus or gastro-oesophageal junction there is limited evidence to suggest improved outcomes with more extensive surgical resection.

A key limitation of the study is the lack of large, high quality randomised control trials to permit a reliable meta-analysis. Only one centre has produced a prospective study [6]. Studies included in the analysis demonstrated substantially more patients (1503 vs. 948) undergoing a single incision approach. Propensity matching may have partially offset the potential systematic biases. Despite those endeavours and the detailed statistical analysis conducted by Xue et al. [1] (including evaluations of heterogeneity), inclusion of non-randomised, retrospective studies does introduce the potential for significant bias. Ultimately, the quality of most studies included in this review would be considered weak.

This study highlights the need for high quality, multi-centre randomised control trials evaluating efficacy of different surgical techniques. Those studies need to be adequately powered to definitively answer key outcomes such as survival and peri-operative morbidity as well as important considerations of quality of life and patient reported outcome measures [7]. Other areas of interest worldwide include evaluations of the efficacy of minimally invasive and robotic approaches [8].

Future endeavours need to better stratify for use of adjuvant and neoadjuvant therapy and incorporate those into comparisons of surgical technique. In particular, combined chemo-radiotherapy, appears to achieve high response rates for oesophageal squamous cell carcinoma and improved survival whilst being well tolerated [9].

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* Corresponding author.

E-mail address: paul.burton@monash.edu

Overall, Xue and colleagues [1] have compiled the available literature comparing two surgical approaches to a significant problem. A comprehensive analysis has not determined superiority of one approach over another. It, most importantly, demonstrates that evidence does not support an optimal surgical approach. Surgical technique should be guided by local expertise and must include ongoing contemporaneous audit and benchmarking, until more comprehensive data is available [10].

Declaration of competing interests

Dr Burton has nothing to disclose

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