



Fast Track Process and Oesophageal Surgery

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Abstract

Enhanced Recovery after Surgery (ERAS) guidelines and protocols have been well established and published for multiple and different surgical procedures that their implementation has led to improving patient outcomes with decreasing morbidity and hospital stay length. Since its introduction in oesophageal surgery, this multimodal and multidisciplinary care process has evolved overtime. Despite the large variation in implemented protocols and protocol components, the fast track care process implementation has showed an improvement in outcomes with reduced hospital stay length. This present review work aimed to give an overview on the evolution of the fast track process and its benefits on the patient outcomes in oesophageal surgery by reviewing the published literature.

Keywords: Fast track process; Oesophageal surgery; Patient outcomes

Introduction

First introduced in colonic surgery in 1999 [1], the fast track perioperative care process. Implementation revealed an improvement of patient outcomes by decreasing the hospital stay length and reducing both the incidence and severity of postoperative complications [1-5]. Subsequently, this surgical care process evolved into a multidisciplinary and multimodal strategy commonly known as Enhanced Recovery after Surgery (ERAS). This new approach of perioperative care (ERAS) aimed to reduce the surgical stress response and improve postoperative recovery with rapid return of functional status. The ERAS program incorporates multiple perioperative elements that form the ERAS protocol. The ERAS group published a consensus protocol for colonic surgery in 2005. Since then, the ERAS program has been implemented in multiple surgical disciplines and several meta-analyses have documented the ERAS program benefits on outcomes [6-8], resulting in the publication of a number of guidelines for different surgical procedures [9-12]. As a multimodal and multidisciplinary approach, The ERAS program implementation involves a multidisciplinary team including surgeons, anesthetists, nurses, dieticians and physiotherapists, and aiming to improve care quality by introducing evidence-based changes into clinical practice [13]. Instead of other surgical procedures, there are no official ERAS guidelines for oesophageal surgery. The number of papers documenting the benefits of modern multimodal perioperative care is sparse, and the published reports include most of perioperative care elements widely used in other types of surgical procedures [3,12,14]. This present review work aimed to give an overview on the evolution of the fast track process and its benefits on the patient outcomes in oesophageal surgery by reviewing the published literature.

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Received Date: 01 Aug 2019

Accepted Date: 12 Sep 2019

Published Date: 17 Sep 2019

Citation:

Boukerrouche A. Fast Track Process and Oesophageal Surgery. *Clin Surg.* 2019; 4: 2572.

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Fast Track Protocols and Oesophageal Surgery

Surgery is the main treatment of the oesophageal cancer [15] and oesophageal surgical procedures involve three operating fields (abdominal, thoracic and cervical), and the need to use an abdominal digestive organ to reconstruct the removed diseased oesophagus. The oesophageal surgery is considered technically demanding and oesophageal resection remains a high-risk surgical procedure with high mortality (2.4% to 4.5%) and morbidity (40% to 80%) [16,17]. The high complexity and the huge technical variations of the surgical procedure have limited the introduction of the fast track protocols following oesophagectomy. The fast track process in oesophageal surgery has been first introduced in 2004, and its feasibility has been documented [18], as demonstrated by a published report of systematic review and meta-analysis including 12 comparative studies and one RCT and enrolling 1,982 patients with 1,028 and 954 in fast track group and traditional care group respectively, the fast track protocol implementation is feasible esophageal surgery for cancer with potential benefits on outcomes [17]. Instead of other surgical disciplines, the absence of published perioperative care guidelines for oesophageal surgery resulted in a significant diversity in implementing the fast track process elements [17,19]. Also multiple studies investigated the fast track

process effects in oesophageal surgery have showed a large variation of the implemented protocols in term of type and number of items depending on the surgical care unit implementing the protocol [19]. Furthermore, some aspects in oesophageal surgery such as delayed oral intake and maintain of naso-gastric tube, are highly controversial with the fast track components including early enteral feeding and removal of naso-gastric tube before anesthesia reversal. Interestingly, recent published meta-analysis has highlighted the positive influence of standardized multimodal perioperative care process on non-surgical complications without affecting the surgical morbidity [17,19]. Therefore, this result shows that the implementation of the multimodal modern care process in oesophageal cancer surgery could be considered as safe and beneficial. Since its introduction in oesophageal surgery in 2004, the fast track process has evolved and evaluated leading to the publication of multiple reports that highlighted the feasibility of this perioperative care process and its benefits on the patient outcomes without affecting the surgical complications [17,19]. These published positive results have led to the recent publication (2019) of the guidelines for oesophagectomy by the ERAS society with aiming to standardize the protocol and performing audit to improve patient outcomes and making changes in care practice [20].

Fast Track Benefits on Patient Recovery

The implementation of the fast track process in oesophageal surgery has been studied and assessed. The published reports have highlighted the large variation in implemented protocols, the feasibility and the safety of this perioperative care process and the benefits on patient outcomes [19]. As believed, the fast track perioperative care process reduces postoperative stress response leading to faster recovery [21]. Currently; complete functional recovery and reduced postoperative hospital stay are the main goal of the modern surgical care under ERAS program [22]. The improvement of outcomes with significantly reduced hospital stay length and decreased non-surgical morbidity rate has been confirmed with the ERAS protocols implementation in gastrointestinal surgery including colorectal, pancreatic, gastric and liver surgery [6-8,23]. As shown by published reports [17], the implementation of the fast track care process resulted in reducing the hospital stay length and decreasing overall non surgical and pulmonary complications; however, the surgical morbidity and anastomotic leakage rate have not been affected. Also, there was no difference in mortality and readmission rates between study groups. Despite the large variation in the implemented protocols and the compliance with protocol components variable [24-28], this documented improvement in outcomes is a well argument for the feasibility, the potential safety and benefits of implementing this multimodal modern perioperative care or ERAS process in oesophageal surgery for cancer. So, studies based on standardized protocols and guidelines will facilitate to performing a full evaluation of the ERAS process and improving care practice and patient outcomes which constitute the future perspectives of publishing the ERAS guidelines for oesophageal surgery recently (2019) by the ERAS society.

Conclusion

Despite the variation in protocols, protocol items and compliance, the published studies clearly demonstrated the feasibility, the safety and the benefits on outcomes of the fast track care process in oesophageal cancer surgery. Furthermore, the implementation of the recently published guidelines for oesophageal surgery by the ERAS

society will allow performing a complete assessment of the ERAS process benefits on patient outcomes following oesophagectomy.

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