

2022 年度美國消化道內視鏡外科醫師協會 參與視訊會議及醫學壁報發表之心得報告

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摘要

因疫情取消出國，改以線上方式參加 2022 年美國內視鏡外科醫師協會年會。

發表電子醫學壁報，內容主要呈現台中榮總近兩年多來(2019-2021)總共 155 位病患運用術後加速康復療程(Enhanced Recovery After Surgery, ERAS)在大腸直腸微創手術上的成效與學習曲線分析。ERAS 是一項複雜且需要多專科團隊溝通、合作的照護模式，在我們的經驗中，為達到較高的 ERAS 順從性以及良好的臨床成效，學習曲線平均需要 31 例，與之前的國際發表文獻相當。除此之外，台中榮總在近一年多來積極發展達文西機器手臂微創手術，我們發現其不但不影響 ERAS 的順從性，在恢復進食時間、術後恢復狀況及住院天數方面，相比傳統腹腔鏡手術的臨床成效都來得更好。我們認為達文西機器手臂微創手術配合術後加速康復療程將會是未來趨勢，也證明建立一套新照護模式的學習曲線並不會比腹腔鏡手術還來得久。

關鍵字：術後加速康復療程(Enhanced Recovery After Surgery, ERAS)、大腸直腸微創手術、達文西機器手臂微創手術、學習曲線

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一、 目的

配合院方鼓勵參與國內外醫學會議及發表文章投稿，我們整理台中榮總過去兩年多運用 ERAS 在微創大腸直腸手術的經驗，將其臨床成效及學習曲線分析以壁報形式發表在 2022 美國消化道內視鏡外科醫師協會年會上。本篇醫學壁報預計將資料完整製作成論文，投稿於 SAGES 的官方期刊 *Surgical Endoscopy* (IF:3.14)，讓全世界看到台中榮總積極發展尖端醫療的努力與貢獻。

二、 過程

2021 年 12 月 29 日，美國消化道內視鏡外科醫師協會(SAGES)回函接納我們投稿的題目，發表型式為電子醫學壁報，並邀請我們以實際親臨或線上方式參與年會。會議於 2022 年 03 月 16 日至 03 月 19 日在美國科羅拉多州丹佛市舉行，因疫情因素我們採以線上方式參與年會，演講及壁報內容全部皆可在 SAGES 官網搜尋瀏覽。

三、 心得

美國胃腸內視鏡醫師學會年會(Society of American Gastrointestinal and Endoscopic Surgeons)為全球內視鏡外科界的年度盛事。這次我們的主題能夠登上 SAGES 的壁報是很難得的機會，代表 ERAS 是現在外科的趨勢，也代表我們的經驗放眼國際也十分出色。雖然因為疫情因素無法出國，沒能夠親身觀摩國際重要年會的風采，但 SAGES 提供很便利的線上影音平台，可以即時參與所有的演講，能夠很輕鬆的挑有興趣的主題，看專家們的投影片，聆聽清晰的音頻，甚至所有的醫學壁報也都上傳在官網上，能夠自行瀏覽學習。

四、 建議（包括改進作法）

台中榮總是國內少數領先積極推行術後加速康復療程(ERAS)的醫院之一，ERAS 在大腸直腸手術的臨床成效不但十分良好，也已累積足夠病例數，能夠發表文章呈現我們的成果。除此之外，台中榮總亦是國內積極推行達文西機器手臂微創手術的領先醫院之一，將達文西微創手術結合 ERAS 照護在國內是創新的整合醫療照護模式，我們應積極參與國內外重要醫學會議並盡速將成果論文發表以推廣台中榮總的醫學品質。

五、 附錄

1. The ePostersOnline Website of SAGES 2022

[Posters | SAGES 2022 ANNUAL MEETING \(epostersonline.com\)](https://www.epostersonline.com/)

2. 本篇提及之醫學壁報(圖片)



Implementation of an ERAS program in elective minimally-invasive surgery for colorectal surgery: An outcomes and learning curve analysis

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Background

- Enhanced recovery after surgery (ERAS) protocols and multimodal perioperative care pathways designed to achieve early recovery after surgical procedures and have been widely accepted worldwide.
- However, the effective implementation of ERAS required close multidisciplinary teamwork and learning curves to adjust the protocols into a daily practice.
- The primary objective of this study was to present our real-world experience and establish the learning curves for the implementation of an ERAS program in minimally-invasive surgery for colorectal resection, while also evaluate the impact of developing robotic technique to the outcomes of ERAS.

Method

- We collected adult patients who received elective minimally-invasive surgery including laparoscopic and robotic surgery for colorectal resection with ERAS care during June 2019 to September 2021. Patients required conversion to open surgery and immediate postoperative intensive care were all excluded. Overall, a total of 155 patients were included in this retrospective analysis.
- All patients had received the same ERAS programs and equivalent treatment by the same multidisciplinary team. Our tailored ERAS had 16 core programs consists of 4 preadmission items, 4 preoperative items, 3 intraoperative items and 7 postoperative items.
- Patients were divided into 5 group chronologically (31 cases per quintile). Patient demographics, perioperative data, tumor characteristics, surgical outcomes and ERAS compliance were compared among quintiles. Learning curves were evaluated based on surgical outcomes and ERAS compliance.
- All statistical analyses were performed using the PASW Statistics software (SPSS version 23.0). Continuous variables were expressed as mean \pm SD or median [interquartile range (IQR)] and were compared among groups using one-way analysis of variance (ANOVA) or the Kruskal-Wallis test. Categorical data were expressed as number (percentage) and were compared using the Pearson Chi-square test or Fisher exact probability test. A P-value of <0.05 was considered statistically significant.

Result

Quintile	Group	n	Age (yr)	Sex (M/F)	ASA	Operation time (min)	Conversion (%)	ERAS compliance (%)	LOS (days)	30-day mortality (%)	30-day morbidity (%)
1	1	31	62.5	20/11	1.5	120	10	85	3.5	0	10
2	2	31	63.5	18/13	1.5	130	12	88	3.5	0	12
3	3	31	64.5	19/12	1.5	140	15	90	3.5	0	15
4	4	31	65.5	21/10	1.5	150	18	92	3.5	0	18
5	5	31	66.5	22/9	1.5	160	20	95	3.5	0	20

Discussion

- There is a growing trend worldwide in the adoption of robotic approach to colorectal surgery in the past decade. Robotic surgery has been proved to provide better clinical and oncological outcomes for colorectal cancer patients as compared to the conventional laparoscopic surgery. We developed robotic approach and executive ERAS care simultaneously on patients undergoing colorectal tumor resection since May 2020. The case numbers of robotic group grew fast and exceeded that of laparoscopic group by July 2021 (Fig 1).
- A prospective study of early implementation of ERAS program in laparoscopic colorectal surgery has demonstrated that at least 30 patients and a period of 6 months are required to achieve an ERAS compliance of 80% or more. However, the learning curve of ERAS program in robotic colorectal surgery has not been validated to date.
- In our study, compliance of total ERAS programs achieved a significant progress from 71.1% in group 1 to 81.2% in group 2 and was relatively constant from group 3 to group 5 (p value <0.0001). Reoperation rate (p value: 0.023) and hospital stays after surgery (p value: <0.0001) also achieved a significant reduction between group 1 and group 2. A number of 31 patients required to achieve better clinical outcomes and higher compliance of ERAS programs are compatible to former study. In addition, robotic approach being in the majority of the latter group indicated that development of robotic colorectal surgery had no impact on learning curve of ERAS care.

Conclusion

Both robotic surgery and ERAS protocol care are prominent creation to colorectal surgery and become a global trend with rapid progress on safety and efficacy over the past decade. Our experience indicate that the combination of robotic approach and ERAS protocol care is a promising surgical approach and there is no impact on learning curve of ERAS care despite the early development of robotic surgery.