

Safety and efficiency of an articulating needle driver in advanced laparoscopic abdominal surgery

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Introduction

- Straight stick needle drivers provide limited dexterity
- Robot assisted articulating needle drivers are associated with high costs and limited usability
- Laparoscopic articulating needle drivers (LAND) offer enhanced dexterity without these limitations

Objective

Assess safety and efficiency during the clinical implementation of the LAND

Methods

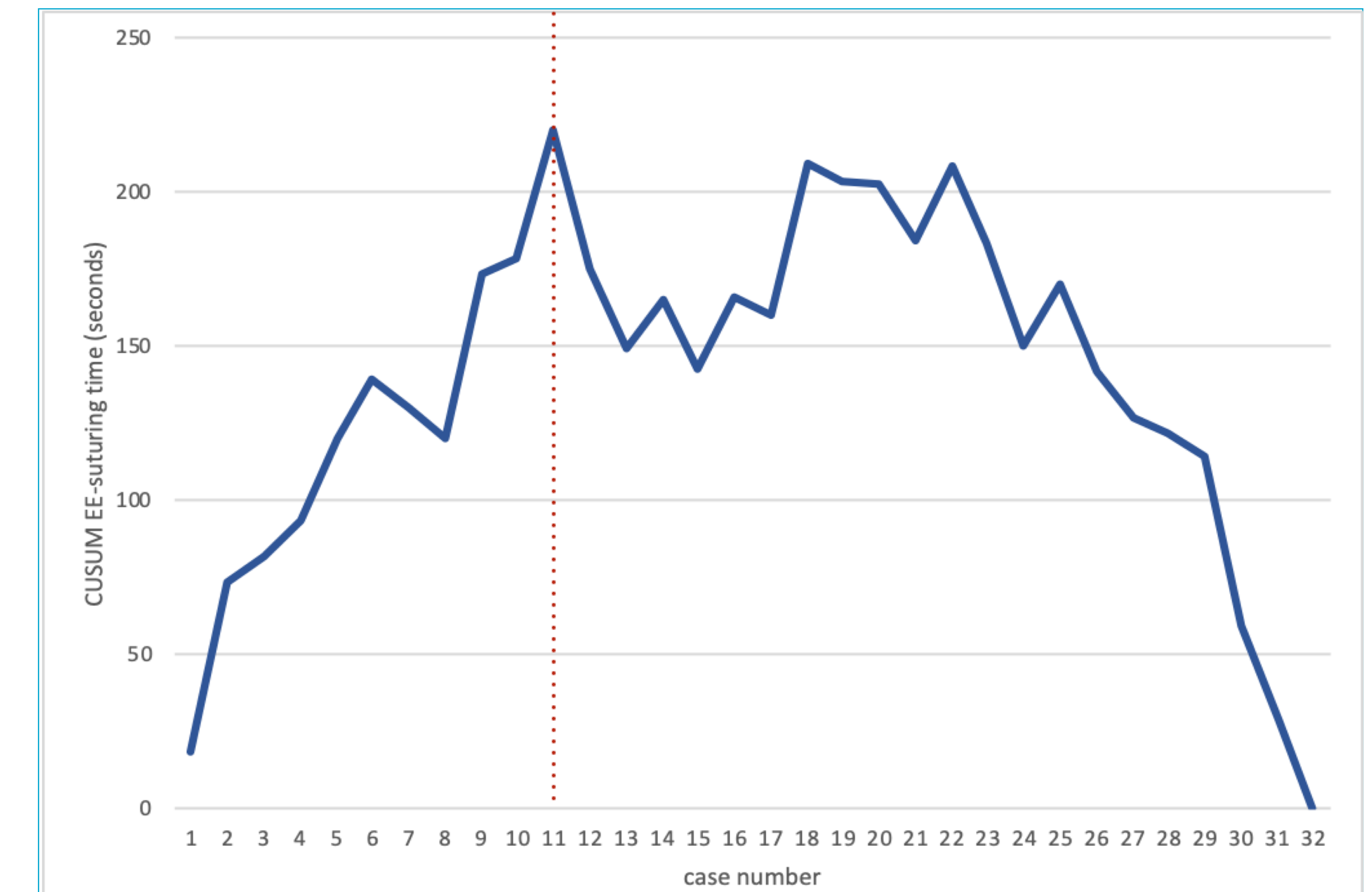
- Retrospective cohort study, n=45
- Patient records and intra-operative video footage
- Domain-based 90-day postoperative outcome analysis
- Enteroenterostomy suturing time learning curve for RYGB

Results

Procedures	N (%)
Roux-y-gastric bypass	34 (76)
Roux-y-gastric bypass + Nissen	7 (16)
Right hemicolectomy	2 (4)
Reduction diaphragmatic hernia + Nissen	2 (4)
Safety	N (%)
Intraoperative adverse events	1 (2)
90-day postoperative morbidity	2 (4)
Efficiency	Mean (SD)
Operative time	75 (33)
Enteroenterostomy suturing time for RYGB	156 (28)



Results



CUSUM analysis: 2 phases of the learning curve: accumulation of experience (trough case 11) and optimization (from case 11).

Conclusion

- LAND can be implemented safely and efficiently and is associated with a limited learning curve
- Cheap and efficient platform for enhanced dexterity