

Introducing Robotic Component Separation into Practice

Jeremy FREE¹, Lara Hookway-Becares¹, Romilly K Hayward^{1,2},

Christopher Nicolay², Oliver J Warren^{1,2}

¹Imperial College London, London, United Kingdom; ²Chelsea and Westminster Hospital NHS Fdn Trust

Background

- Hernia surgery is being revolutionised by the introduction of **robotics**
- Component separation techniques (CST)** are used in the management of large and complex defects to reduce tension through redistribution of abdominal muscles
- These techniques require **considerable expertise** and can **increase operative times**
- A robotic approach to CST has shown promise, though safety concerns have arisen around its rapid adoption.

Method

- Prospective** data capture
- Patients undergoing **robotic transversus abdominis release (rTAR)**.
- Conducted during the introduction of robotics into a single-surgeon, high-volume complex abdominal wall reconstruction practice.

Results

Feb 2023-Nov 2024: **8** rTAR procedures were performed.

Median console time: 134 minutes (IQR 120-205)

Demographics:

- Male n=5
- Median age **63** (IQR 56-65)
- ASA I** (12.5%), **ASA II** (50%), **ASA III** (37.5%)

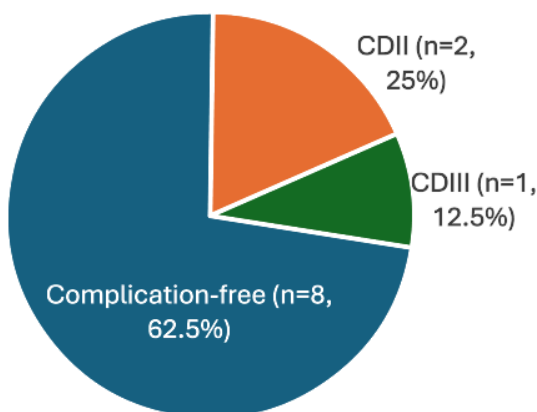


Figure 1: outcomes following robotic transversus abdominis release
 CD=Clavien-Dindo Grade

Outcomes

- Median blood loss: **20mL** (no transfusions)
- Conversion to open: **1**
- Median length of stay: **1.5 days**
- Complication-free** recovery: **n=5** (62.5%)
- Major complications** (CDIII/above): **n=1** (12.5%)
- No** readmissions, **no** returns to theatre
- No** deaths within 60 days
- No** early recurrences
- Median follow-up: 105 days

Clavien-Dindo Grade	N(%)
II	2 (25%) (hypomagnesaemia – IV replacement; DVT)
III	1 (12.5%) (infection requiring IR-guided drainage)

Table 1: complications following robotic transversus abdominis release
 DVT=deep vein thrombosis; IR= interventional radiology

Conclusion

Our results demonstrate the **safe introduction** of robotic CST into practice, with **acceptable** postoperative outcomes and length of stay, **no readmissions or returns to theatre**, and no early recurrences. Further assessment of larger cohorts alongside learning curve analysis is necessary to confirm long-term benefits and cost-effectiveness.