

Learning Curve in Robotic Primary Ventral Hernia Repair Utilizing Intraperitoneal Onlay Mesh: A Cumulative Sum (CUSUM) analysis

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OBJECTIVE

- Cumulative Sum (CUSUM) learning curves (LC) analyze individual performance by evaluating the acquisition of new skills and the evolution of those skills with experience.
- The purpose of this study is to present a CUSUM-LC based on the operative times of robotic intraperitoneal onlay mesh ventral hernia repair (rIPOM-VHR), and identify differences observed throughout its phases.

METHODS

- rIPOM repairs for elective-primary-midline hernias were evaluated retrospectively.
- Cumulative sum analysis (CUSUM) and risk adjusted (RA)-CUSUM were used to visualize the LC of rIPOM-VHR, based on operative times and complications.
- All procedures were performed by one surgeon within a 5-year period.

RESULTS

- Out of ninety rIPOM repairs, 25, 40, and 25 patients were allocated using a CUSUM analysis to early, middle, and late phases, respectively.
- Skin-to-skin times:
 - Middle phase has a mean duration 23 minutes shorter than the early phase ($p<0.001$)
 - Late phase has a mean duration 34 minutes shorter than the early phase ($p<0.001$).
- A gradual decrease in operative times was observed after thirty-six cases, and a RA-CUSUM revealed improving outcomes after fifty-five cases.

CONCLUSION

- This study elucidates interval improvement in operative efficiency in rIPOM-VHR.
- Consistently decreasing operative times and accumulated complication rates were observed after fifty-five cases.

DISCLOSURES

The authors have no financial conflicts of interest to disclose concerning the presentation

