

The Learning Curve for the Shouldice Repair: a pilot analysis of post-training specialized surgeons at the Shouldice Hospital

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Introduction

The Shouldice Repair of inguinal hernias is a widely recognized gold standard non-mesh hernia repair [1]. However, reported outcomes vary, likely due to differences in surgical accuracy, experience, volume, and training [2-6]. The aim of this study was to evaluate operative time and postoperative complications of 4 post-training specialized surgeons.

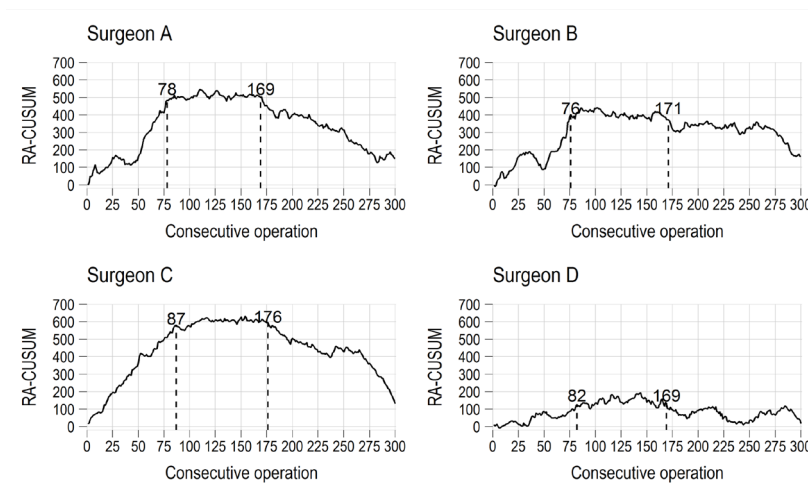
Material & Methods

This was a pilot retrospective chart review from the Shouldice Hospital. The first 300 Shouldice Repairs (early learning block-EB) were compared to their 900-1,000 repairs as the primary operating surgeon (late learning block-LB).

Results

- ❖ Mean EB operative time was 59.2 ± 11.2 minutes versus the significantly reduced LB cases (53.4 ± 10.5 minutes, $p = .001$).
- ❖ The only other significant characteristics that differed between EB and LB was higher ASA ($p < .001$) in the LB.
- ❖ A nonsignificant reduction in the rate of reported recurrences ($n=16$ vs. $n=0$) and surgical site occurrences (hematoma, seroma, infection; $n=27$ vs. $n=2$) was found between the early and late learning block cases.
- ❖ All four surgeons had a plateau in operative time after 78 to 88 operations. **Figure 1** depicts the RA-CUSUM learning phases for each surgeon, with the learning (1-86 cases), competency (87-165 cases), and mastery (166+ cases).

Figure 1 RA-CUSUM graph depicting learning phases for each surgeon



Discussion To our knowledge, similar results have not been published on increased operative times in a group of specialized surgeons. Compared to studies that examined the learning curve of other hernia repairs [7,8] the learning curve appears flatter, supporting the belief that the Shouldice Repair is more technically demanding and takes longer to master.

Conclusion The operative time for the Shouldice Repair plateaued after 78-88 operations by fully trained surgeons from the Shouldice Hospital. This suggests the learning curve for efficiency is achievable within a reasonable timeframe. However, the learning curve for reducing postoperative complications remains unclear and future research is needed.

