LEARNING CURVE FOR ROBOTIC HIATAL HERNIA REPAIR SURGERY

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Introduction:

With the advent of robotic surgery, the learning curve for the performance of operations robotically has been found to affect operative time and outcomes. The exact number of operations required to be performed by a surgeon in order to attain expert performance is different for each operation. [1] [2] [3] The surgeon's overall total robotic surgical experience also needs to be considered.

Methods:

We tracked the operative time and complexity of 112 successive robotic hiatal hernia repair surgeries performed by a single surgeon at a single center community hospital. The size of the hiatal hernia was used as a surrogate measure of the complexity of the case. The surgeon who performed the surgeries was Fellowship trained in Minimally Invasive and Bariatric Surgery prior to the beginning of our study. At the beginning of our study period, he had 3 years' experience in practice of robotic surgery and had been performing robotic cholecystectomy, robotic ventral hernia, robotic hiatal hernia repairs and robotic sleeve gastrectomy. He had performed over 75 robotic surgery cases in practice.

Results:

We found that the operative time did not differ throughout our study, when corrected for the size of the hiatal hernia (i.e. complexity of the case).

Conclusion:

The learning curve for robotic hiatal hernia repair appears to flatten out after a minimum number of cases, which is about 75 total robotic cases. Further studies are required to define the number of cases that are required to be performed robotically in order to attain expert level skill in various other individual surgical procedures. This will further help standardization of requirements for training programs in order to produce surgeons with a consistent skill set.

References:

1) Alexandra D Power, Peter J Kneuertz et al, "Defining the learning curve of robotic thoracic surgery: what does it," *Surgical Endoscopy (2019) 33:3880–3888,* pp. 3880-3888, 2019

2) Rosa M Jiménez-Rodríguez, F D la Portilla et al, "Learning curve in robotic rectal cancer surgery: current state of affairs," *Int J Colorectal Dis (2016) 31:1807–1815,* pp. 1807-1815, 2016.

3) LIM Pernar, DS Smink et al, An appraisal of the learning curve in robotic general surgery

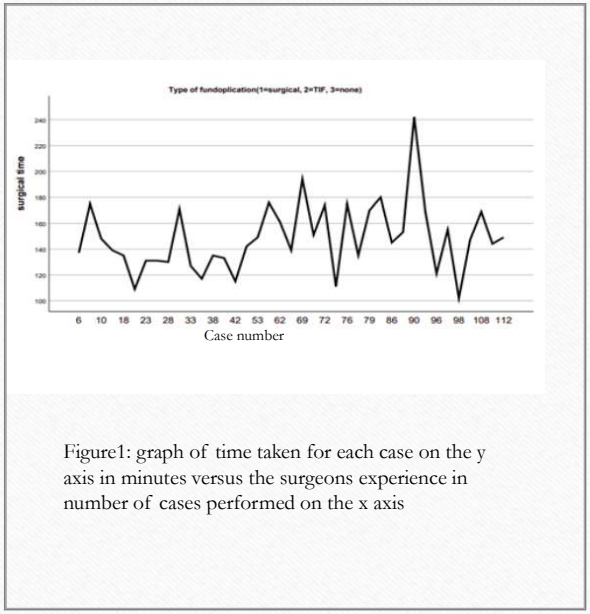


Figure1: graph of time taken for each case on the y axis in minutes versus the surgeons experience in number of cases performed on the x axis