PROSPECTIVE ANALYSIS OF IMPACT OF LEARNING CURVE IN ROBOTIC ASSISTED RECTAL SURGERY IN HIGH VOLUME INDIAN TERTIARY CARE CENTER

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INTRODUCTION

Robotic surgery
Major application in the colorectal procedures
Limitations encountered in open or laparoscopic surgeries due to funnel shaped orientation of the pelvis .
Overcomes Restricted exposure in pelvis in open and laparoscopy
Major advantage of preservation of the fine neural plexus responsible for the bowel and bladder functions.
But learning curve is there for any new technique and very important. Learning Curve is usually defined as the number of cases that a surgeon needs to perform before reaching competency for a given procedure based on comparisons with the outcomes of prior standard procedures
Its uses are : (a) Work scheduling & time management, (b) Material requirement planning, (c) Training programme for young surgeons, (d) Cost estimation, (e) Capital requirement planning.

AIMS AND OBJECTIVES

To assess of impact of learning curve in robotic assisted rectal surgery

PATIENTS AND METHODS

From the time Da Vinci robotic system was installed in our Institute from July 2011 till December 2019, first 262 Rectal Carcinoma cases which were operated , were considered for study.
Prospective analysis done for procedures like Robotic LAR & APR.
Parameters compared were-
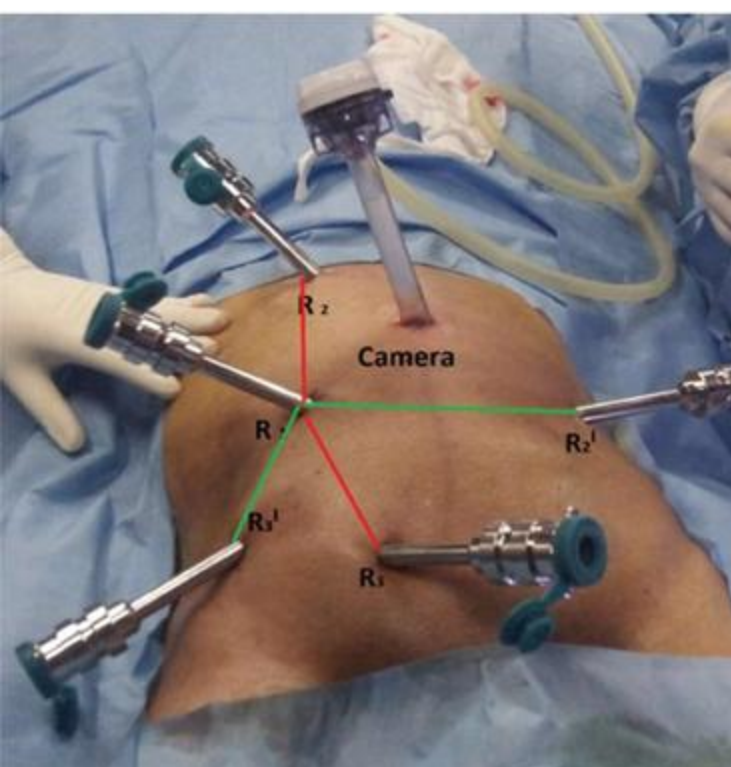   Console time
   Males versus Female pelvis
   Docking time
   Type of surgery
   Total procedure time.
After the analysis of data, the CUSUM curve was plotted, for various above mentioned parameters.

1. Initial metastatic survey of the abdomen
2. Identification and isolation of IMA and IMV
3. Safeguarding autonomic nerves followed by clipping and transection of IMA and IMV
4. Medial to lateral dissection (identification of ureter and gonadal vessels)
5. Left colon mobilization up to splenic flexure
6. Pelvic dissection and mesorectal excision
7. Distal transection, exteriorization of specimen
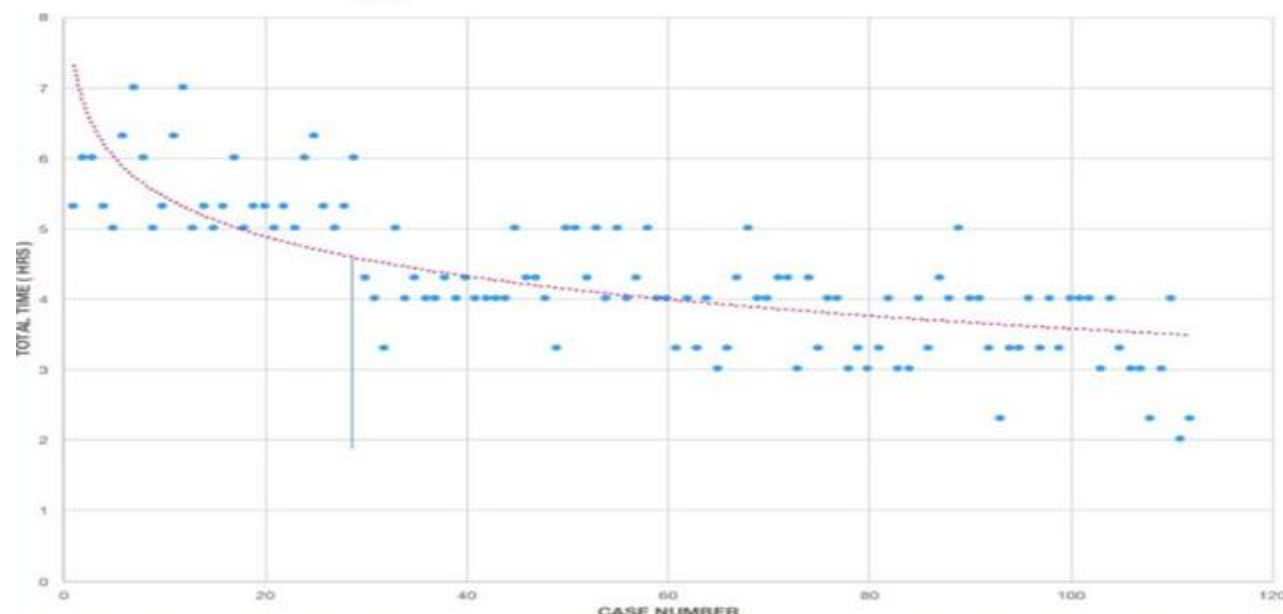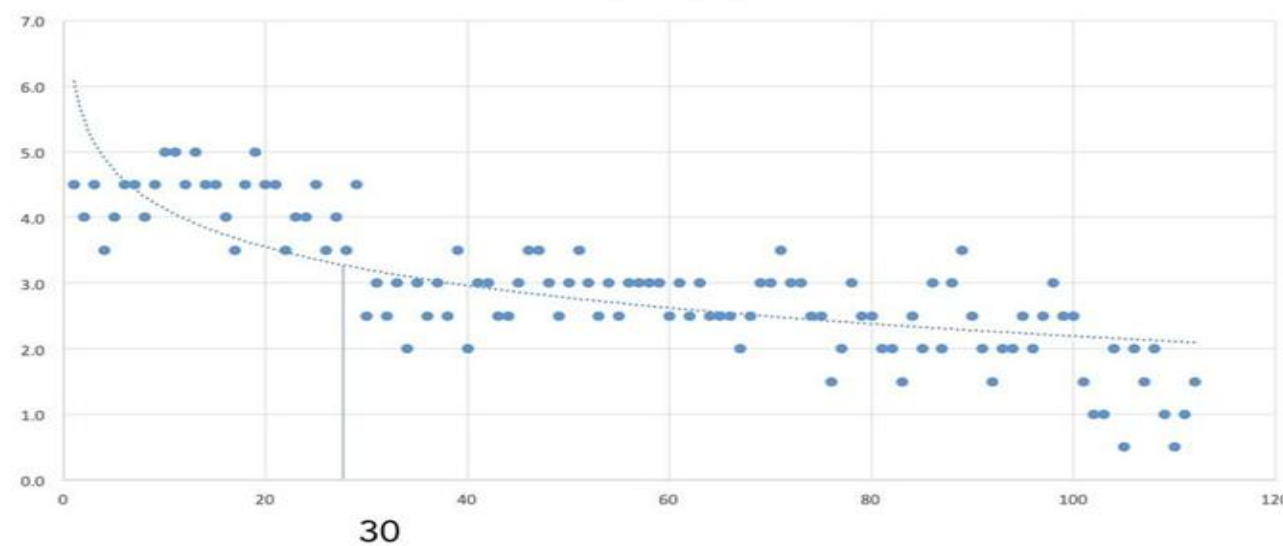8. Anastomosis

New port placements used in the last 15 cases
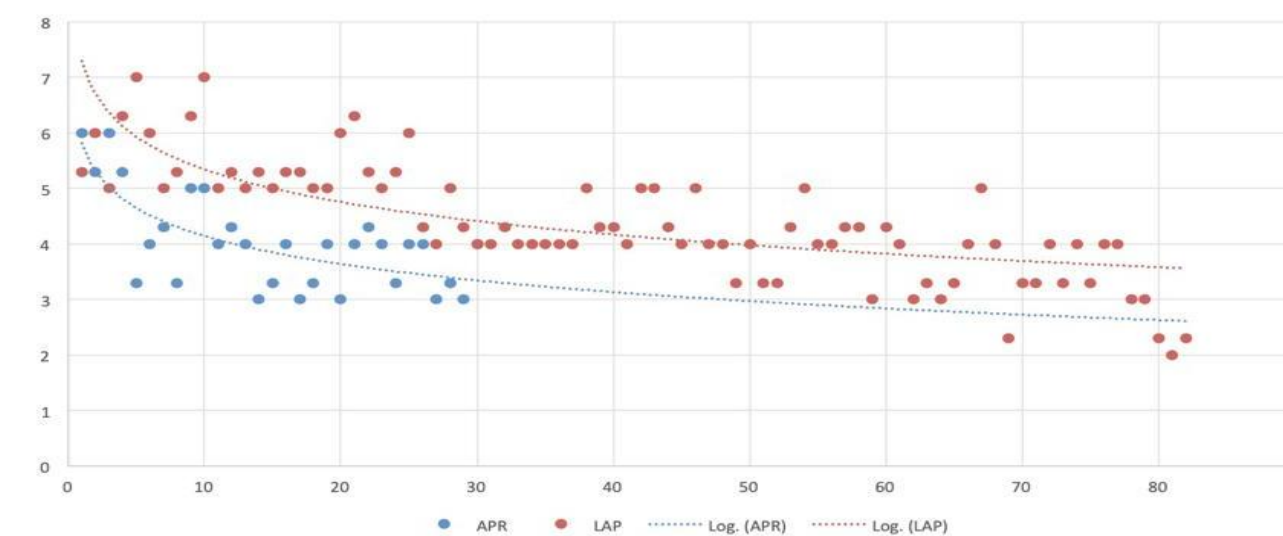

CUSUM CURVE

RESULTS

CONSOLE TIME

30
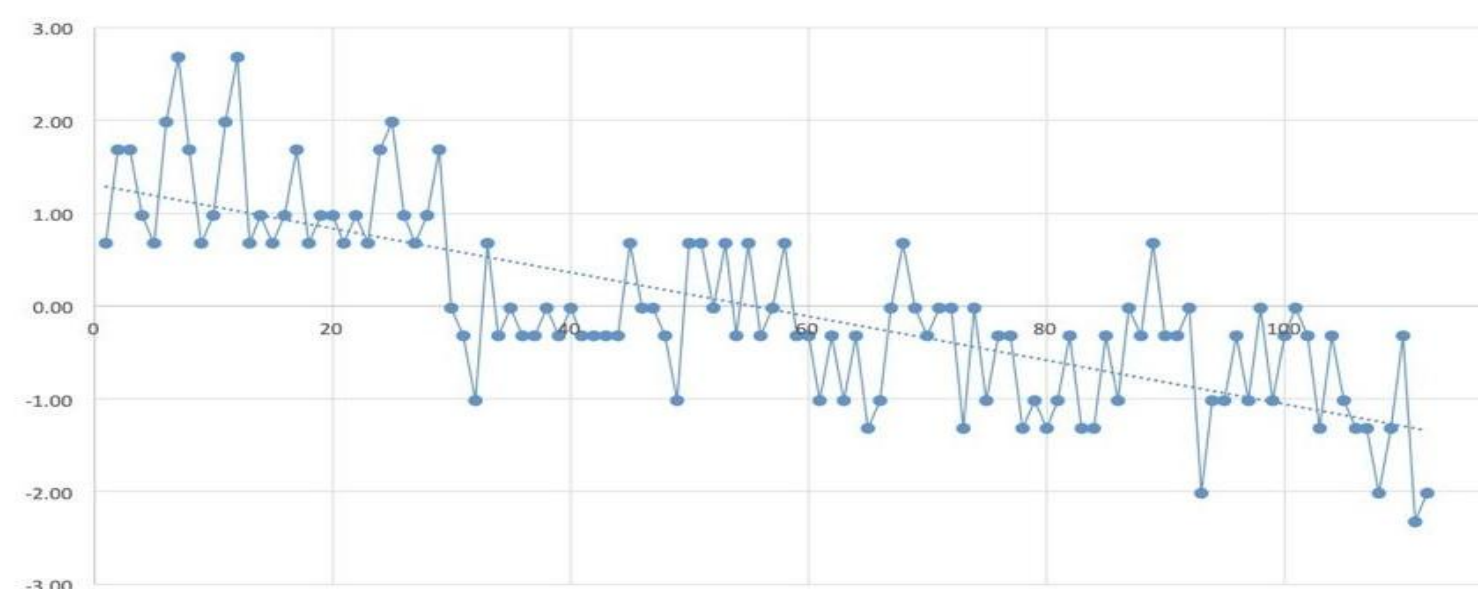
LAR VERSUS APR

APR   LAP   ...... Log. (APR)   ...... Log. (LAP)

roper patient selection

ial discussion and planning by the team

Structured robotic training program

Discussion of the steps of surgery and reviewing the criticial steps

Proctoring and mentoring

To figure out the optimal patient positioning

To figure out the optimal angle of robot docking

To figure out the optimal port placements

To figure out the optimal tissue handling

To break down the surgery into a series of steps and to master each step (parallel learning).

Good communication between console and bed side assistant

Self auditing of the surgeries done

Peer / online review of the surgeries performed.

Dual console

Tips and tricks to shorten the learning curve in robotic rectal surgeries

CONCLUSION

Robotic assisted surgeries for rectal cancer has got good oncological and functional outcomes in high BMI, male pelvis and low rectal cancers. Learning curve can be shortened with constant self auditing of the surgeon, teaming with each surgeries performed, reviewing the steps & by improvising techniques

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