

Barton GG Bradshaw MD
Chair, Cancer Committee
Sutter Auburn Faith Hospital

Quality Study 2

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Introduction

Recently the surgical and oncology literature has demonstrated increasing interest in patient recovery after surgical operations including cancer operations. Enhanced recovery after surgery or ERAS protocols have been used to improve the post-operative care of cancer patients.(1,2) In May, 2017 Sutter Auburn Faith Hospital implemented an ERAS protocol for colectomy patients which included preoperative carbohydrate loading, early feeding and ambulation and limited post-operative narcotic administration. Two years ago we retrospectively reviewed our experience with colectomy patients to establish a pre-ERAS baseline for length of hospital stay. This study retrospectively evaluated our hospital length of stay for patients who were treated with our ERAS protocol since May 2017.

Methods

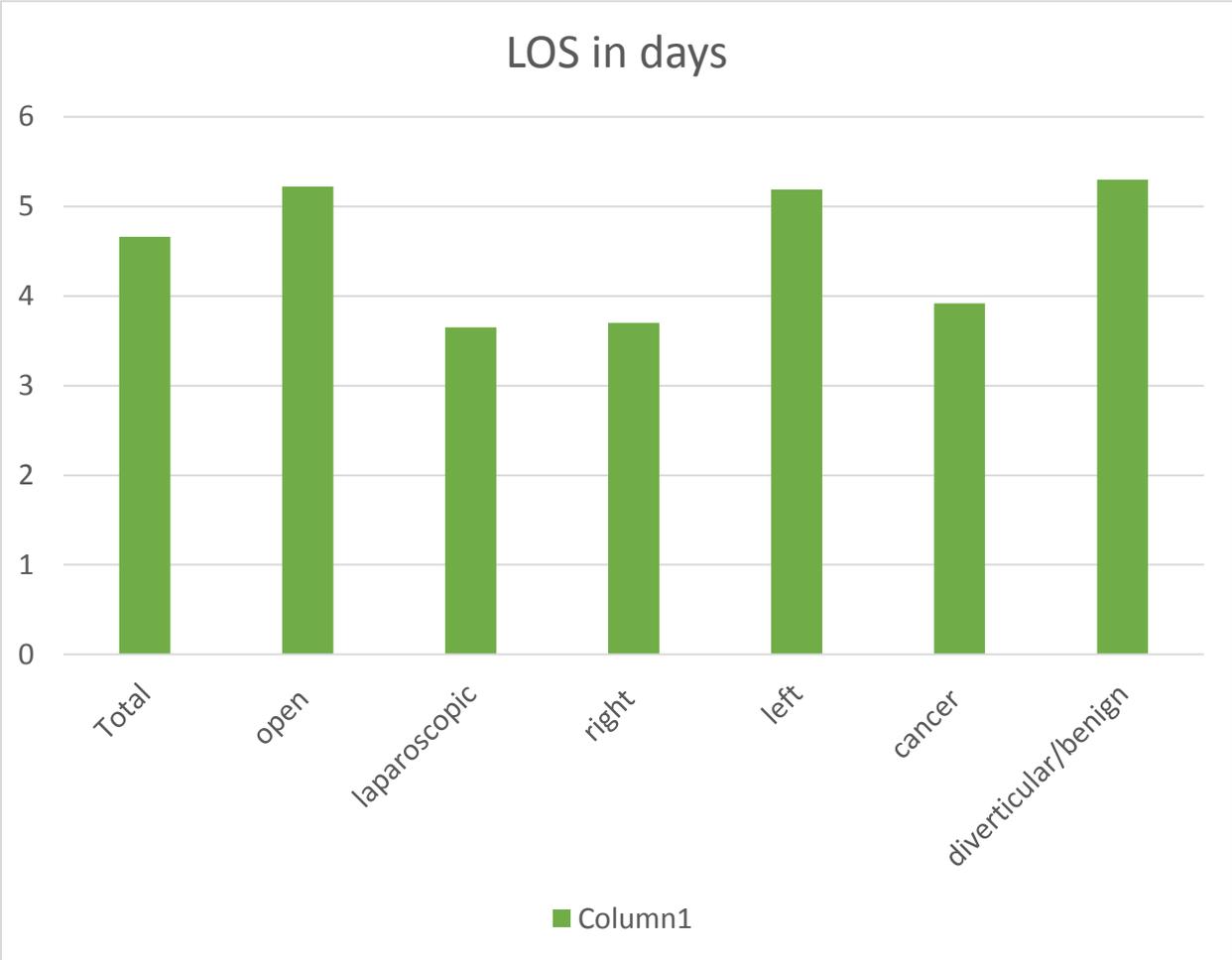
Surgeons' records were used to obtain a list of all colectomy patients over the period from May 2017 to 12/2018. This study included patients with both benign and malignant disease. Patients were excluded if they underwent a diverting colostomy or if they died in the hospital. Data were collected from the medical record including age, site of colectomy, laparoscopic or open approach, diagnosis and length of hospital stay.

Results

56 patients were identified who met inclusion criteria. Mean age was 66. 36 patient underwent sigmoid or left colectomy. 20 patients underwent right or transverse colectomy. 30 patients had diverticulitis or other benign disease, 26 patients had cancer or polyps. 36 patients had an open colectomy and 20 had a laparoscopic colectomy.

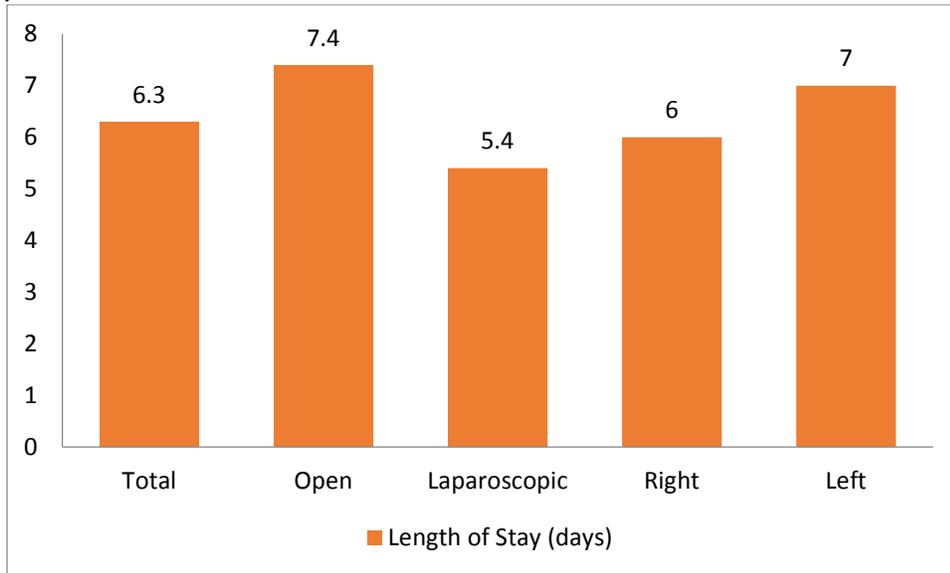
Mean length of stay was 4.7 days for all patients. Table 1 shows length of stay for the various sub groups.

open	5.2
laparoscopic	3.7
right	3.7
left	5.2
cancer	3.9
diverticular/benign	5.3



These data compare favorably to the data we collected in 2016 for colectomy patients pre-ERAS.

Length of stay for colectomy patients from 2010 – 2015 prior to initiating ERAS protocol at Sutter Auburn Faith.



Discussion

As we have previously noted, hospital length of stay after colon surgery is increasingly seen as a quality metric in the surgical literature. With improvements in surgical and anesthetic care LOS after colon surgery has been steadily decreasing. Prior to 2000 the surgical literature reported lengths of stay from 6 – 14 days with a mean of 9 days.(3) The Clinical Outcomes of Surgical Therapy Study Group (COST trial) published their data in 2004 in the New England Journal of Medicine. LOS in this study were 6 days for open surgery and 5 days for laparoscopic.(4) More recent data from institutions initiating ERAS programs have shown LOS after colon surgery of 6.8 days pre-ERAS from the University of Virginia and 7.2 days from Johns Hopkins. Both of these institutions showed significant improvements in LOS with initiation of ERAS protocols with post-ERAS LOS of 4.6 days and 5.9 days respectively.(1,2)

We previously reviewed our experience with colectomy patients prior to starting an ERAS protocol. This review only included cancer elective cancer patients over a 6 year period. The current study includes all colectomy patients who had an anastomosis performed between 5/2017 and 12/2018 including patients with diverticular disease and other benign pathology.

The current data show a significant reduction in hospital length of stay for all colectomy patients. For all patients reviewed the length of stay decreased from 6.3 days to 4.7. If only cancer patients are included, there was an even more significant improvement from 6.3 to 3.9 days. As expected, in the ERAS patients open surgery, left sided resections and a diagnosis of diverticulitis were associated with a longer hospital stay. However, all of these groups had shorter lengths of stay than any group of patients pre-ERAS.

Our data compare favorably to the published literature for institutions who have implemented ERAS protocols. Our length of stay for all ERAS patients was 4.7 days compared to 4.6 at the University of Virginia and 5.9 at Johns Hopkins. These reductions in length of stay translate into significant reductions in health care costs but perhaps more importantly into improved patient satisfaction and outcomes.

References

1. Standardization of Care: Impact of an Enhanced Recovery Protocol on Length of Stay, Complications, and Direct Costs after Colorectal Surgery

[Robert H. Thiele, MD, et al. J Am Coll Surg 2015; 220:430-443.](#)

2. Organizational Culture Changes Result in Improvement in Patient-Centered Outcomes: Implementation of an Integrated Recovery Pathway for Surgical Patients

[Elizabeth C. Wick, MD, et al. J Am Coll Surg 2015;221:669-677.](#)

3. Standardized Perioperative Care Protocols and Reduced Length of Stay After Colon Surgery

Barton GG Bradshaw, MD, et al. J Am Coll Surg 1998; 186:501-506.

4. A Comparison of Laparoscopically Assisted and Open Colectomy for Colon Cancer

The Clinical Outcomes of Surgical Therapy Study Group*

N Engl J Med 2004; 350:2050-2059