Neoadjuvant Radiation in Rectal Cancer:
Does a longer wait mean more open surgery?

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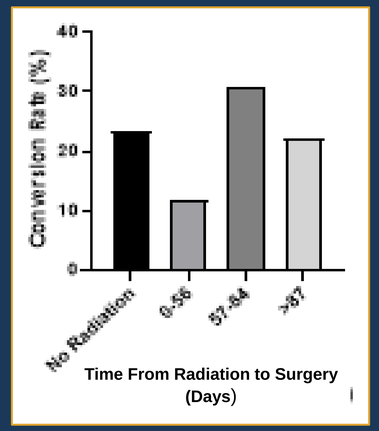
Introduction

Increasing adoption of total neoadjuvant therapy (TNT) for rectal cancer prolongs the time period between radiation completion and surgery. It is currently unknown whether prolonging this window increases pelvic fibrosis, leading to greater surgical complexity. The goal of this study was to evaluate the relationship between time from radiation completion to surgery and conversion from minimally invasive surgery (MIS) to open, case length, and estimated blood loss (EBL).

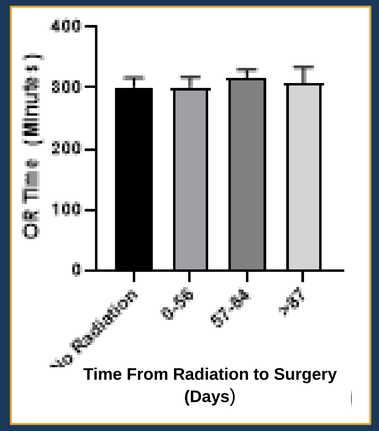
Methods

A retrospective chart review was conducted. Patients were included if they underwent an MIS procedure for rectal cancer at our institution between July 1, 2012 and July 1, 2020. Records were screened for patient characteristics, dates of radiation completion and surgery, and planned surgical approach. Patients who received radiation were grouped in tertiles based on time from radiation completion to surgery. A fourth group of patients who were not radiated was included for comparison. Primary endpoints were conversion from MIS to open, case length, and EBL. Descriptive statistics were performed and significant was assessed using chi squared and ANOVA.

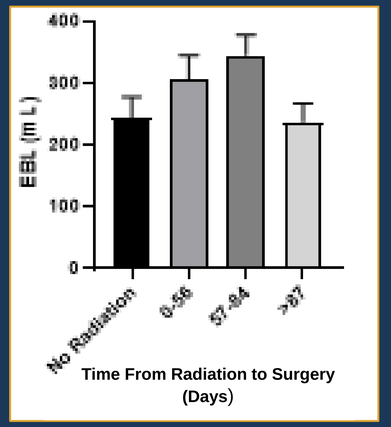
Conversion Rates: MIS to Open



Case Length



Estimated Blood Loss



Results

We identified 161 patients who met inclusion criteria. Of those, 83 were men (51.6%), with mean age of 57.40, 73 (45.3%) had low rectal tumors, 60 had a BMI>30 (37.3%), and 11 (6.8%) had clinical T4 tumors. There were 47 patients who did not receive radiation, 34 who had surgery within 0-56 days from radiation completion, 62 within 57-84 days, and 33 after 87 days. Surgery was planned laparoscopically in 115 cases (71.4%) and robotically for 46 (28.57%). In total, 38 cases (23.6%) were converted to open, of which 28 (24.36%) were laparoscopic and 10 (21.7%) were robotic. There was no significant association between time from radiation completion and conversion to open (p=.994), (Figure 1). There was no association between time from radiation completion and case length in analysis of all MIS cases (p=0.821), only laparoscopic cases (p=0.137), or only robotic cases (p=0.265). We found no association between time from radiation completion and EBL for MIS, laparoscopic, or robotic cases (p=0.09, 0.197, and 0.877, respectively).

Conclusion

We found no association between longer time from radiation completion and successful minimally invasive proctectomy. While other factors may contribute to the surgical decision-making process, our study suggests that TNT is a safe approach for surgically resectable rectal cancer.