Laparoscopic Rectal Cancer Surgery: A Pan-Canadian Analysis

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Introduction

- Over the past decade, randomized controlled trials have demonstrated non-inferior oncologic outcomes in rectal cancer patients who undergo laparoscopic surgery (LS) when compared to those who undergo open surgery (OS).
  - MRC-CLASICC[1,2], COREAN[3] and COLOR II[4] found no difference in survival and local recurrence between LS and OS and improved short-term outcomes with LS.
- Some concern remains with LS for rectal cancer regarding inferior pathological endpoints observed in more recent randomized controlled trials[5,6].
- Currently, there is a lack of Canadian data on the uptake of LS for rectal cancer.

Purpose

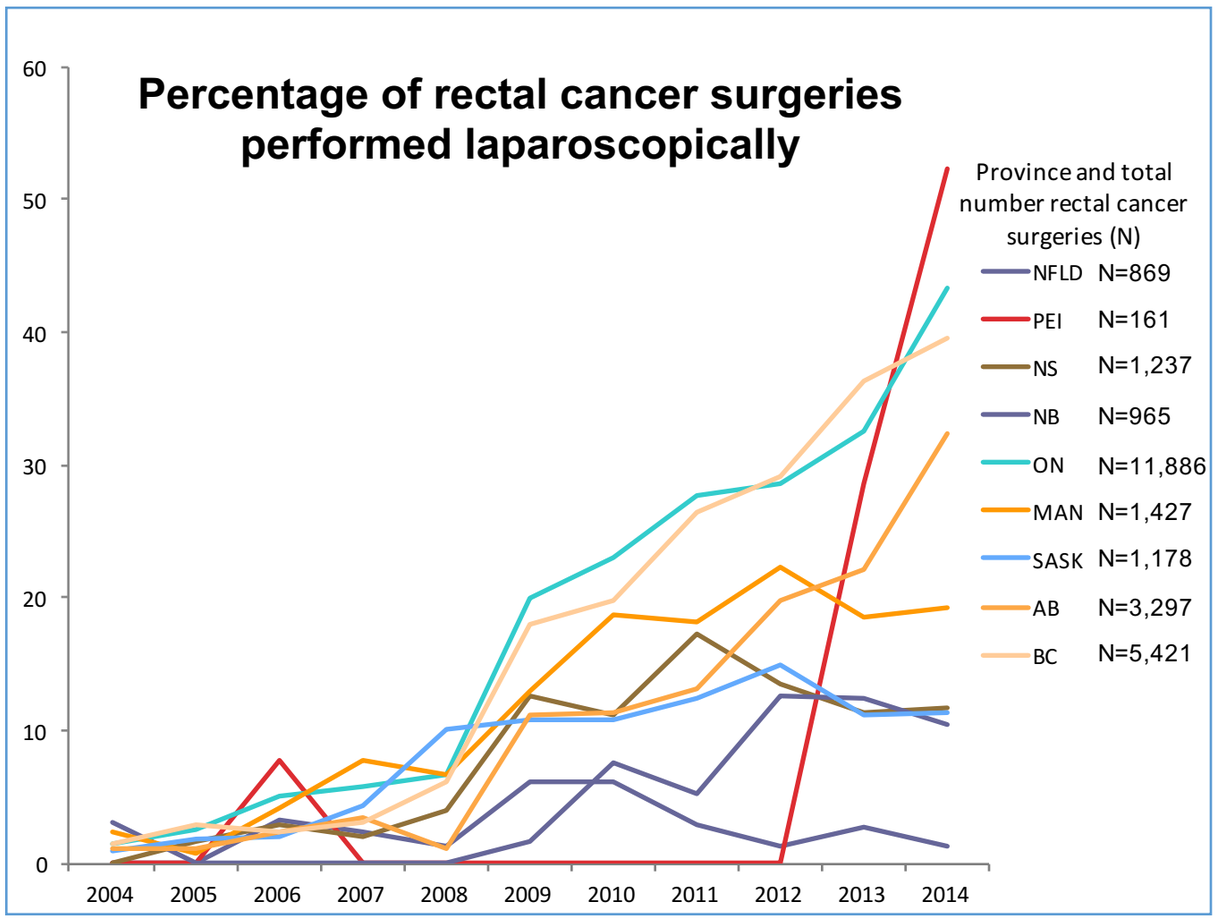
To describe the national and provincial use of LS for rectal cancer in Canada, and to identify factors associated with its use.

Methods

- Population-based historical cohort using the Discharge Abstract Database held by the Canadian Institute for Health Information.
- Included all patients 18 years or older who underwent a rectal resection for rectal cancer from April 1, 2004 – March 31, 2015 in Canada (except Quebec) with a Canadian postal address.
- Exclusion criteria: pregnancy, emergency surgery or complex multi-visceral resection.
- Provincial and national uptake of LS in rectal cancer was determined by calculating the proportion of LS cases, analysed over time.
- Factors associated with LS were determined by fitting a multiple logistic regression model.

Results

- Of 26,411 rectal cancer surgeries during the 11 years, 22,538 (85.2%) were LS and 3,903 (14.8%) were OS.
  - Nationally, uptake of LS increased from 1.4% in 2004 to 34.7% in 2014 ($p < 0.0001$).



* $p < 0.0001$ for all provinces except NFLD (p 0.3)

Multi-variable regression of factors associated with uptake of LS

	OR	95% CI
Year (per year 2004-2014)	1.39	1.37-1.40
Age > 65	1.0	-
≦ 65	1.15	1.07- 1.24
Sex M	1.0	-
F	1.33	1.24-1.44
Province NL	1.0	-
PE	4.13	2.12-8.05
NS	3.50	2.17-5.64
NB	1.89	1.12-3.18
ON	9.29	6.03-14.30
MB	5.58	3.52-8.85
SK	3.47	2.15-5.59
AB	4.78	3.07-7.44
BC	8.53	5.52-13.18

Conclusion

- The use of LS for rectal cancer has increased markedly in Canada over the past decade.
- Significant interprovincial variation exists.
  - ON, BC and PEI have experienced the greatest proportional increase in LS for rectal cancer during the study period.

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