

Predictors and rates of endoscopic tattoo localization during elective colorectal resection for benign and malignant lesions

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BACKGROUND

- Wide variability in endoscopic tattoo placement and peri-operative error rates in lesion localization have previously been identified
- No current standardized guidelines exist for endoscopic tattooing of colorectal lesions

OBJECTIVE

Determine rates and predictors of tattoo placement, location in relation to the lesion, and factors associated with preoperative tattoo placement

METHODS

- Retrospective cohort study
- Winnipeg, Manitoba, Canada
- Statistical analysis: multivariable logistic regression
- Independent variables: Sex, lesion location, year and type of surgery. Dependent variable: Tattoo placement

Patients undergoing elective colorectal surgery for polyp or cancer (2007-2017)
n=1385

Excluded (n=266)
Anal cancer (n=8)
Small bowel tumour with ileocolic resection (n=25)
Appendiceal tumour (n=12)
Palliative or metastatic (n=13)
Emergent surgery (n=7)
Misclassified (n=81)
Missing data/unable to locate (n=120)

Excluded for analysis(n=57)
No index endoscopy
Incomplete chart
Surgeries outside 2007-2017

Total met inclusion criteria
n=1062

RESULTS

FIG 1.LESION LOCATION AT INDEX ENDOSCOPY

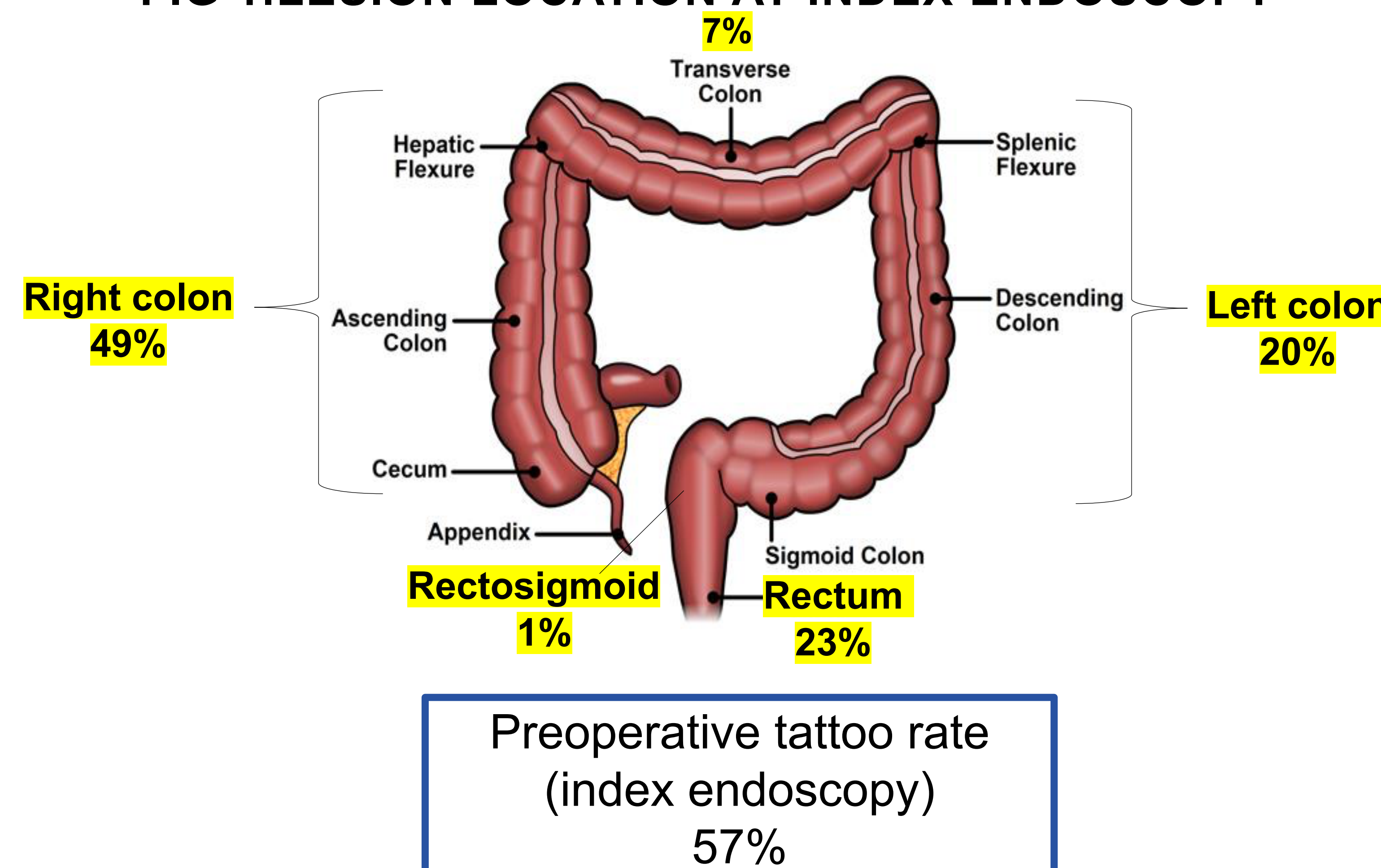
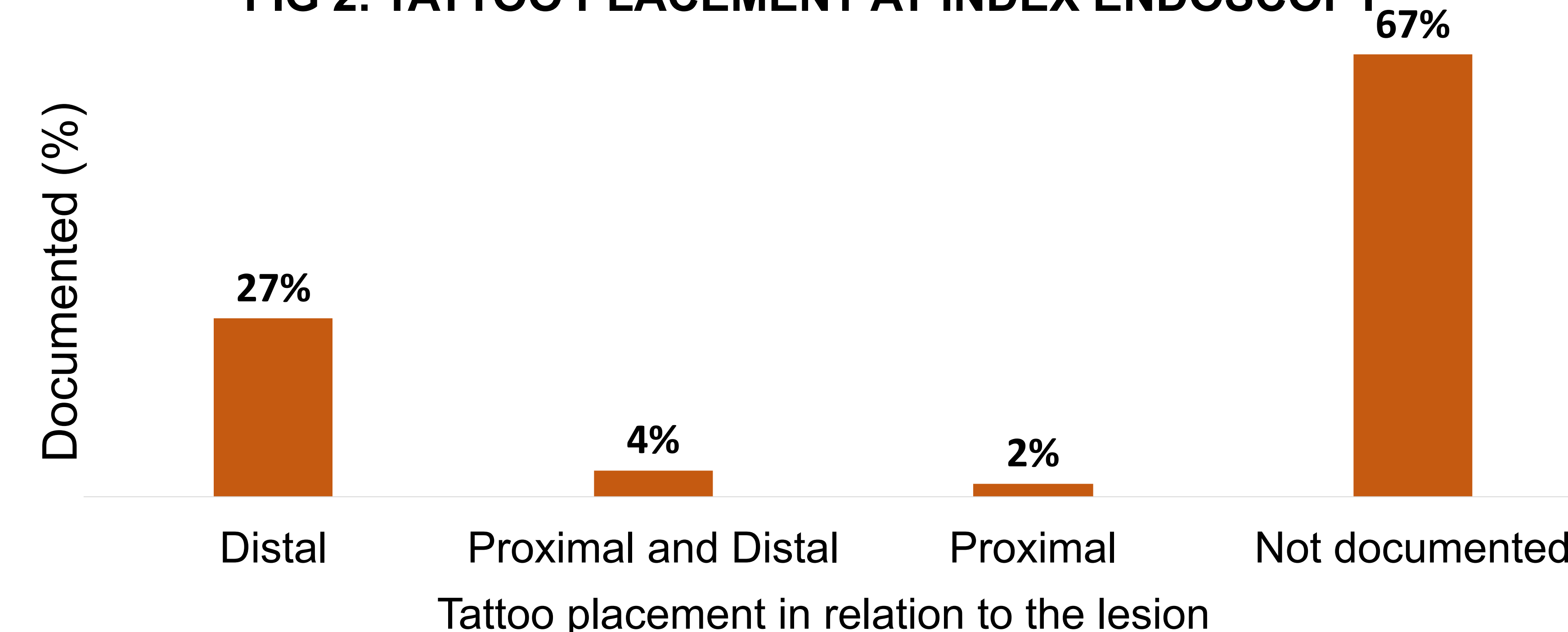


TABLE 1. MULTIVARIATE ANALYSIS: PREDICTORS OF TATTOO PLACEMENT AT INDEX ENDOSCOPY

	Adjusted OR	95% CI	p-value
Sex			
Female	Reference	–	–
Male	0.79	0.59 - 1.06	0.12
Lesion location			
Right colon	Reference	–	–
Transverse colon	1.93	1.04 - 3.59	0.04
Left colon	1.32	0.89 - 1.93	0.16
Rectosigmoid	0.35	0.08 - 1.49	0.16
Rectum	0.29	0.19 - 0.44	<0.001
Year of surgery			
2007 - 2010	Reference	–	–
2011 - 2014	1.88	1.31 - 2.68	0.001
2015 - 2017	2.87	1.93 - 4.26	<0.001
Type of surgery			
Open	Reference	–	–
Laparoscopic	1.69	1.22 - 2.33	0.001

FIG 2. TATTOO PLACEMENT AT INDEX ENDOSCOPY



CONCLUSION

Transverse colon lesions
Laparoscopic surgery
Cases after 2010

Preoperative tattooing

Rectal lesions

Preoperative tattooing

Widespread variability in tattooing and suboptimal documentation

This study highlights the need for standardized tattooing practices and reporting amongst endoscopists

AKNOWLEDGMENTS

- Funding support from the University GFT Surgery Grant, the Canadian Society of Colon & Rectal Surgeons, and the Manitoba Medical Service Foundation