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Une approche collaborative - imagerie médicale et traitement

Clinical Audit: MRI Synoptic Reporting for Rectal Cancer Staging

Aatif Parvez, MD
Diagnostic Radiology PGY-4
University of Saskatchewan
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University of Saskatchewan

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No conflict of interest

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Introduction

The staging of rectal cancer via MRI plays a significant role in clinical management, especially in regards to whether a patient will receive preoperative radiotherapy or chemoradiation therapy.

There is an ever-increasing demand on radiology to not only provide clinically appropriate reports, but to do so in a timely and efficient manner.

The Trigger

1. Radiology Reports
   -inconsistent information provided

2. Limited Educational Value
   -anatomy, clinical, pathology

3. National Guidelines
   -limited and/or not utilized

Aim

To determine whether the implementation of a MRI synoptic report for primary rectal cancer has assisted in clinical management decisions.

Methodology

N= 35

Location: 3 Hospitals in Saskatoon (RUH, SPH, SCH)

Inclusion: Primary Rectal Cancer Staging (MRI)

Time Period: July 2013 - September 2014

Next Cycle: September 2014 – September 2015

Hours involved in audit: 30-40

Cancer Care Ontario
Action Cancer Ontario

Canadian Cancer Society / Société canadienne du cancer

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1. MRI PROTOCOL

Overall image quality: ☐ Adequate ☐ Suboptimal ☐ Non-diagnostic

2. TUMOUR LOCATION

Tumour location (from anal verge): ☐ Low (0-5.0 cm) ☐ Mid (5.1-10.0 cm) ☐ High (10.1-15.0 cm)

Distance of the lowest extent of tumour from anal verge: _____ cm
Distance of lowest extent of tumour from top of the anal sphincter: _____ cm
Relationship to anterior peritoneal reflection: ☐ Above ☐ At or straddles ☐ Below ☐ Not able to assess

3. TUMOUR CHARACTERISTICS

Circumferential extent/location (clock face): _____
Craniocaudad extent: _____ cm
Mucinous: ☐ No ☐ Yes

4. T-CATEGORY

i) T-category:
☐ T1 or T2
☐ T2/early T3 (includes spiculation of the perirectal fat)
☐ T3
☐ T3/possible T4*
☐ T4*
*Please indicate structures with possible invasion: _____ (see list below)

GU	PELVIC SIDE WALL	BONE/VASCULAR	OTHER
bladder	Obturator internus	sacrum (specify level)	Anterior peritoneal reflection
left ureter; right ureter	Piriformis	left internal iliac vessels; right internal iliac vessels	
prostate		left external iliac vessels; right external iliac vessels	
uterus	LEVATOR ANI		
vagina	Pubococcygeus		
	Iliococcygeus		
	Coccygeus		

ii. *For low rectal tumours (0 - 5 cm) only:*

Is the lower extent of the tumour at or below the top border of the puborectalis? ☐ No ☐ Yes*
*If yes, please complete the following section for the most penetrating component of the tumour below the top border of puborectalis:

☐ Possible confinement to the submucosa; no definite involvement of internal sphincter (suspected T1)
☐ Confined to the internal sphincter; no involvement of intersphincteric fat or external sphincter (early T2)
☐ Through the internal sphincter and intersphincteric fat; possible or definite involvement of the external sphincter (advanced T2)
☐ Through the external sphincter and into surrounding soft tissue; no organ involvement (T3)
☐ Through external sphincter and possible involvement of the adjacent organs (i.e., prostate, vagina) (T3/T4)
☐ Through external sphincter and definite involvement of adjacent organs (i.e., prostate, vagina) (T4)

5. DISTANCE TO THE MRF AND EXTRAMURAL DEPTH OF INVASION (EMD)

i) Shortest distance of the definitive tumour border to the MRF = _____ mm
(or ☐ unable to estimate or ☐ not applicable (involving the peritonealized portion of the rectum or T4a))

ii) Extramural depth of invasion (EMD) at this level = _____ mm
(*Record 0 mm for T1 and T2 tumours*)

iii) Are there any tumour spiculations closer to the MRF? ☐ No ☐ Yes*

*If yes, please specify distance = _____ mm and location _____ (on clock face)

iv) Is there any other component of the tumour (any T1-3) closer to the MRF? ☐ No ☐ Yes*

*If yes, please specify distance = _____ mm and location _____ (on clock face)

6. EXTRAMURAL VASCULAR INVASION (EMVI)

EMVI: ☐ Absent ☐ Equivocal ☐ Present

7. MESORECTAL LYMPH NODES AND TUMOUR DEPOSITS

Any suspicious mesorectal lymph nodes and/or tumour deposits? ☐ No ☐ Yes*
(suspicious = irregular border, mixed signal intensity and/or ≥ 8 mm)

*If yes: (please complete a and b)

(a) Shortest distance of any suspicious mesorectal lymph node/tumour deposit to MRF = _____
(b) Please indicate location of the lymph node/deposit closest to the MRF:

☐ At level of tumour; at _____ o'clock
☐ Above tumour; at _____ o'clock
☐ Below tumour; at _____ o'clock

8. EXTRAMESORECTAL LYMPH NODES

Any extramesorectal lymph node(s) with suspicious morphology or signal? ☐ No ☐ Yes*
(suspicious = irregular border, mixed signal intensity and/or ≥ 1 cm)

* If yes, please specific location (free text):

9. FREE TEXT/ADDITIONAL COMMENTS

Methodology

Evidence Based National Guidelines:
-utilized literature review, meta-analysis, and expert opinion
-becoming standard of care

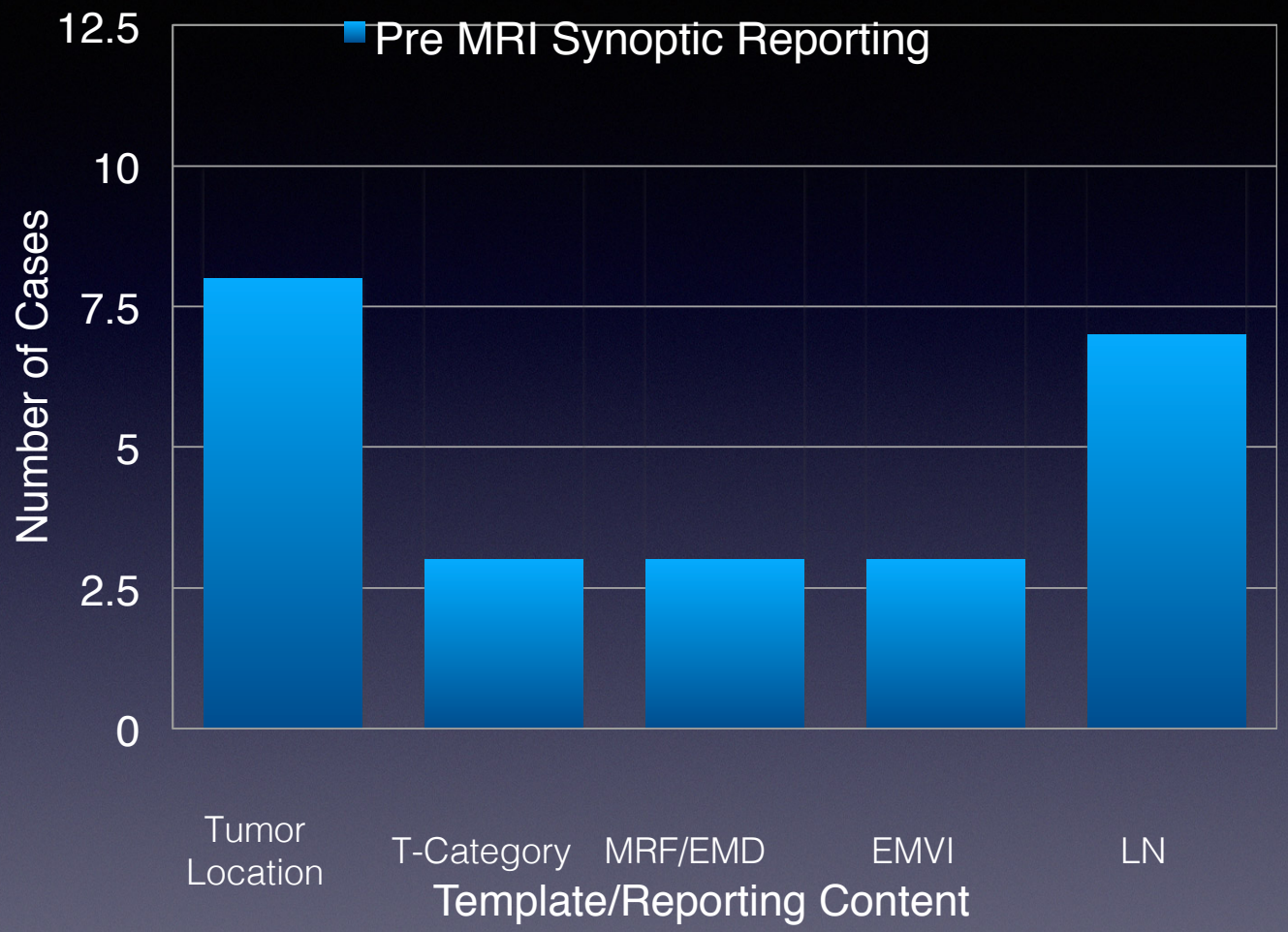
Medline Search:
-Limited articles related to synoptic reporting and rectal cancer staging via MRI

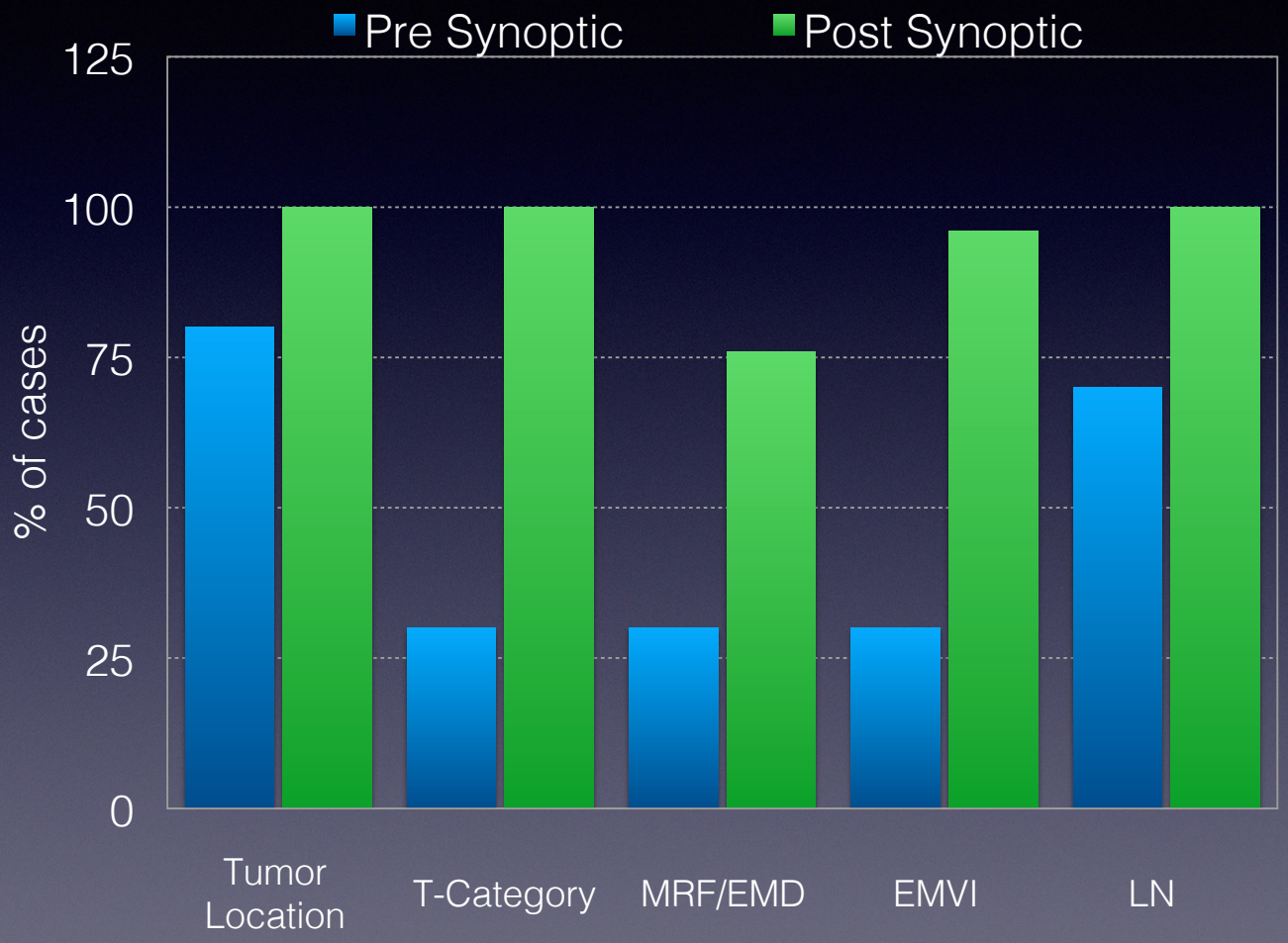
Results

1. A total of 35 studies were performed from July 2013 until September 2014, with 10 studies performed pre synoptic reporting implementation and 25 post implementation.

2. More complete and relevant information is provided to the clinicians, particularly relating to tumor characteristics, T-category, neurovascular invasion, lymph nodes and distance to mesorectal fascia.

3. As a result, clinician satisfaction has improved significantly.


Pre MRI Synoptic Reporting
12.5
10
7.5
5
2.5
0
Number of Cases
Tumor Location
T-Category
MRF/EMD
EMVI
LN
Template/Reporting Content


Pre Synoptic
Post Synoptic
125
100
75
50
25
0
% of cases
Tumor Location
T-Category
MRF/EMD
EMVI
LN

Recommendations

Implementation:

1. All primary rectal staging now preferentially performed at RUH
2. Performed by dedicated abdominal imagers
3. *in conjunction with Gen Sx & Oncology*

Barriers:

1. Work flow/logistics
2. Adherence to synoptic reporting
3. Pathology Correlation Rounds

Conclusion

1. Post implementation of MRI synoptic reporting for primary rectal cancer staging has demonstrated significant improvement in quality of reports, clinician satisfaction, and resident education

2. Future goals include adherence to synoptic reporting and pathology concordance

3. Opens many doors toward synoptic reporting in other aspects of radiology as a potential tool

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Thank you!

Comments/Questions?