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ScienceDirect

EJSO xx (2017) 1–12

EJSO the Journal of Cancer Surgery

www.ejso.com

An audit comparing the reporting of staging MRI scans for rectal cancer with the London Cancer Alliance (LCA) guidelines

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Accepted 1 September 2017
Available online ■ ■ ■

Abstract

Background: This article focuses on the audit and assessment of clinical practice before and after introduction of MRI reporting guidelines. Standardised proforma based reporting may improve quality of MRI reports. Uptake of the use may be facilitated by endorsement from regional and national cancer organisations.

Methods: This audit was divided into 2 phases. MRI reports issued between April 2014 and June 2014 were included in the first part of our audit. Phase II included MRI reports issued between April 2015 and June 2015.

Results: 14 out of 15 hospitals that report MRI scans in the LCA responded to our audit proposal. The completion rate of key MRI metrics/metrics was better in proforma compared to prose reports both before (98% vs 73%; $p < 0.05$) and after introduction of the guidelines (98% vs 71%; $p < 0.05$). There was an approximate doubling of proforma reporting after the introduction of guidelines and workshop interventions (39% vs 65%; $p < 0.05$). Evaluation of locally advanced cancers (tumours extending to or beyond the circumferential resection margin) for beyond TME surgery was reported in 3% of prose reports vs. 42% in proformas.

Conclusions: Incorporation of standardised reporting in official guidelines improved the uptake of proforma based reporting. Proforma based reporting captured more MRI reportable items compared to prose summaries, before and after the implementation of guidelines. MRI reporting of advanced cancers for beyond TME surgery falls short of acceptable standards but is more detailed in proforma based reports. Further work to improve completion especially in beyond TME reporting is required.

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Keywords: Audit; MRI; Proformas; Rectal cancer

Introduction

Rationale

The incidence for colorectal cancer has increased by 33% for men and 12% for women between 1978 and 2008. In England, 14% of all new cancer diagnoses in men (57 new cases per 100,000 population) and 12% in women (37 new cases per 100,000) were colorectal cancers [1]. Although survival has improved with surgical improvements such as total mesorectal excision (TME) [2], still just over half of the patients with rectal cancer survive the disease at 5 years (54% in men and 57% in women) [1].

The burden of disease poses challenges in seeking newer methods of improving survival [3]. One aspect of concern is the variation in survival outcomes of patients in different hospitals [4] and although the reasons for this are multifactorial, one area that may help reduce this variation is the introduction of guidelines to homogenize care.

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http://dx.doi.org/10.1016/j.ejso.2017.09.003
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Please cite this article in press as: Siddiqui MRS, et al., An audit comparing the reporting of staging MRI scans for rectal cancer with the London Cancer Alliance (LCA) guidelines, Eur J Surg Oncol (2017), http://dx.doi.org/10.1016/j.ejso.2017.09.003

Part of this standardization is ensuring appropriate staging of rectal cancers which is an important determinant of how these patients are best treated. CT and MRI are the 2 most common imaging modalities used for tumour evaluation. In an era of patient-specific treatment [5], this assessment determines suitability of patients for primary curative surgery or down-staging pre-operative neo-adjuvant therapy. Staging assessment also helps identify potentially unresectable disease, determine tumour characteristics; extent of local spread and presence of adverse features eg lymph nodes, extramural venous invasion and peritoneal infiltration.

These assessments and decisions are conducted in multidisciplinary meetings and require thorough and accurate MRI reporting. This paper was designed to see which validated prognostic variables are reported using MRI scans. Furthermore it quantifies the uptake of beyond TME reporting according to standards set by the beyond TME consensus group [6]. Optimal tumour staging involves the reporting of known prognostic features so that this information may be shared with the patient and treatment decisions made accordingly. We selected the items that have previously been prognostically validated using MRI such as T-stage and subclass, nodal status, tumour regression, extramural vascular invasion and circumferential resection margin (CRM). In addition we expect the report to contain other items such as height or length of tumour and although these may not be prognostic, they are useful for therapeutic planning. As regards to CRM, it is insufficient to say whether it is simply involved or not because more information is required to plan appropriate surgery especially in relation to beyond total mesorectal excision [6]. Therefore we incorporated this into our study to see if these areas were reported adequately. In addition it is important to report beyond TME items as advocated by the ACPGBI guidelines [7]. Traditionally these reports were written in a prose style and resulted in under-reporting [8] and variation of report quality [9]. This can be improved with the use of relatively simple techniques such as the use of aide memoires [5], proforma aids [9] and proforma based reporting [10,11]. This has been previously demonstrated in other areas such as pathology reporting which improved after the introduction of minimum datasets [12]. Despite detailed descriptions of proforma based reporting [13,14] there has previously been no formally documented minimum MRI dataset.

One move towards this is the introduction of national and regional guidelines such as those produced by the London Cancer Alliance (LCA)[1] in September 2014. Amongst many other areas ranging from diagnosis and treatment, the guidance introduces standardised metrics or prompts for the reporting radiologist to complete and hence avoid under reporting on important prognostic factors. As a result, it is hoped that not only will it reduce variation between trusts but also allows more accurate staging, enabling appropriate tailored treatment of patients and aid in decisions regarding 'beyond TME' surgery for tumours that extend to or beyond the circumferential resection margin (CRM).

In a recent survey conducted by the LCA 44% of respondents were not using standardised reporting in their hospitals with some being unaware of their presence or felt that it is not relevant for their practice although there was some willingness to partake in workshops and quality-improvement teleconferences [15]. This survey was the initial step before formal audit of clinical practice.

Objective

This article focuses on the audit and evaluation of clinical practice before and after guidelines that introduced the formalised reporting of rectal cancer using proformas. This will act as an ongoing part of the standardization process for MRI reports in rectal cancer. Our primary hypothesis was that the introduction of guidelines leads to an increase in proforma based reporting. Secondary hypotheses were a) that there is a greater completion in reporting rate in proforma based reporting compared to prose style reporting before guidelines were introduced b) there is greater completion in proforma or prose style reports after the introduction of the guidelines c) there are differences between beyond TME reporting (for cases with tumours extending to or beyond the circumferential resection margin) surgery before and after the guidelines. Outcomes analysis was not within the scope of this article.

Methods

The audit protocol was presented at and approved by the LCA colorectal pathway group and Clinical Board. The LCA was a network of 15 hospitals in north-west, south-west and south-east London working in partnership to improve quality of care and patient experience. The LCA Colorectal Cancer Clinical Guidelines were produced using a multidisciplinary collection of doctors and surgeons who provided an overview of colorectal cancer patient's journey [16]. Through open discussions, an agreed objective of improving rectal cancer staging was established to improve outcomes. MRI scan reporting was seen as a potential area that could be improved. Having seen the use of proformas in evidence based templates [17–19], proformas were distributed to the constituent hospitals within a London Cancer Network who then agreed to be audited. Radiologists who were unsure as to how to report were encouraged to attend training workshops. The proforma and encouragement of its use was itself the main intervention (Appendix A).

The audit was divided in two phases. Phase I was a baseline audit aimed at establishing current practice of MRI

[1] The LCA was dissolved in 31 March 2016 and has been replaced by the Royal Marsden Vanguard covering North and South West London and a South East London Entity.

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