



Original research

Surgical quality in colorectal cancer



Joseph M. Plummer^{a,*}, Nadia Williams^b, Pierre-Anthony Leake^a,
Doreen Ferron-Boothe^a, Nicola Meeks-Aitken^a, Derek I. Mitchell^a,
Michael E. McFarlane^a, Jeffery East^a

^a Department of Surgery, Radiology, Anaesthesia and Intensive Care, University of the West Indies, Kingston, Jamaica

^b The Department of Pathology, University of the West Indies, Kingston, Jamaica

HIGHLIGHTS

- This manuscript documents lymph node resection for colorectal cancer between hospitals in Jamaica.
- Left hemicolectomies and proctectomy specimens were not meeting acceptable standards.
- This has important treatment and prognostic implications.

ARTICLE INFO

Article history:

Received 26 August 2015

Received in revised form

8 December 2015

Accepted 8 December 2015

Keywords:

CRC surgery

Lymphadenectomy

Quality

ABSTRACT

Objective: To determine the quality of surgical management offered to patients with colorectal cancer (CRC) as measured by adequacy of nodal resections and compare variations across the major hospitals in Jamaica.

Method: Data was obtained from the CRC Registry of patients diagnosed and treated surgically for CRC during the 3-year period commencing January 1, 2011. Variables analyzed included tumor site, stage and number of lymph nodes resected across hospitals.

Results: During the period under review 60% (349) of 586 patients had resections and formed the basis of this study. Of these 49% were treated at the UHWI, 27% from the KPH and STH, 15% from CRH and MRH and 8% from a private laboratory (DPS). Patient distribution was similar at UHWI compared to the others with mean age (61 vs 62) and with slightly more women having surgery (53% Vs 54%) (UHWI vs Others). For tumor grade, margin status, lymphovascular and depth of invasion (majority T3) there was no difference between UHWI and the other sites, although a smaller percentage of tumors treated at UHWI had Crohn's like reaction ($p = 0.01$). There was a larger proportion of sigmoid cancer at UHWI while the reverse trend was seen in cancers of the rectum ($p = 0.027$). The tumors treated at UHWI have a larger median number of regional nodes when compared to the other facilities (14 vs 10; $p < 0.001$) and also more likely to have positive nodes, as were women and younger patients. Comparison across facilities revealed that the proportion of tumors classed as well differentiated, circumferential margin involvement, and having lymphovascular invasion were higher for specimens processed at the private facility ($p = 0.021, 0.035, 0.01$ respectively). Histopathology reports of tumors treated at UHWI and DPS had median 14 and 18 nodes respectively while at NPH laboratory and CRH they were 9 and 10 respectively ($p < 0.001$), whilst those of the ascending, descending, sigmoid colon and rectum had median 15, 11, 13, 11 nodes respectively ($p < 0.001$).

Conclusions: This review demonstrates measurable differences in the surgery and histopathological reports for CRC patients treated across the island. Given adjuvant treatment and prognostic implications there is room for improvement.

© 2015 The Authors. Published by Elsevier Ltd on behalf of IJS Publishing Group Limited. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

1. Introduction

Colorectal cancer (CRC) is the second or third most common cause of cancer related deaths in the Jamaican population and in

* Corresponding author.

E-mail address: joseph_plummer@yahoo.com (J.M. Plummer).

most western countries [1,2]. If presentation is at an early stage it can be cured with surgery only but at a more advanced stage surgery is one aspect of a multimodal approach to effect cure or at least prolong life. Even in metastatic cases there is a central role for surgery in selected cases in effecting cure or improving quality of life. Surgery therefore is essential in managing patients affected with this disease. Offering quality surgery is important in attempting to help CRC patients. The importance of quality surgery is well established with rectal cancer where the surgeon and the institution are important prognostic factors [3,4] and surgeons performing rectal cancer surgery benefit from formal training in total mesorectal excision, and in fact preferably this should be a specialist surgeon [5]. It is also now well established that though the operating surgeon for CRC may not have this specialist training, attention should be paid to ensure a certain quality. A proxy to quality surgery is adequacy of nodal resection [6,7]. Adequate lymph node evaluation is associated with reduced mortality among all patients treated for CRC [7,8]. There however is an important interplay between patient factors, quality of surgical resections and the quality of the pathology assessment.

Previous publication from the region looking at adequacy of resection looked only at the patients treated at University Hospital of the West Indies (UHWI) [9] and reported that patients with left sided cancers were receiving less than adequate surgery as less than 12 nodes being resected. It called for improvement of this quality indicator on both the part of the operating surgeon and the pathology team given the treatment and prognostic importance of nodal status. Several years have since passed since this call for action without the topic being re-evaluated.

The purpose of this study was to re-assess adequacy of nodal resection at the UHWI and to compare this CRC quality indicator to the other hospitals throughout the island including analysis of additional factors that may influence the number of nodes resected.

2. Patients and methods

Data was obtained from the Colon Cancer Registry maintained at the UHWI that uses CnEXT software to prospectively enter all cases of colorectal cancer diagnosed at the UHWI and from the major regional hospitals throughout Jamaica. The UHWI is a 500-bed teaching hospital based on the Mona campus of the University of the West Indies. It is at this site that the postgraduate training of the majority of surgeons currently practicing in Jamaica occurs. The other hospitals are the Kingston Public Hospital with its pathology service being provided by the National Public Health Laboratory (NPHL), Spanish Town Hospital (STH), the Cornwall Regional Hospital (CRH), the Mandeville Regional Hospital (MRH) and two small hospitals whose specimens are processed by the private Diagnostic Pathological Services (DPS). Health care is regionalized in Jamaica and all colorectal resections being undertaken by staff general surgeons. Since 2007 there is a government policy of free health care in Jamaica and all-together these institutions handle more than 90% of all pathological specimens processed and reported in Jamaica. It should be noted that the pathological services of STH are provided by the NPHL whilst that of the MRH is provided by a unit shared with and based at the CRH.

All cases entered during the three-year period January 2011–December 2013 were identified and evaluated for inclusion. Only patients subjected to operative treatment and their histopathology reports entered were included for this report. In addition to nodal status other treatment and prognostic indicators such as tumor margins and lymphovascular invasion were examined. Various characteristics of the tumors were compared across hospitals. Characteristics compared include patient demographics as well as characteristics of the tumor such as site, grade,

differentiation and depth of invasion.

3. Statistics

Chi-square tests of association were conducted to compare the distribution of categorical variables across hospitals (see Table 2). Wilcoxon rank sum tests were conducted to compare numerical variables across hospitals (see Table 3). Crude and adjusted risk ratios were calculated as well as crude and adjusted odds ratios comparing indicators of patient care across hospitals (see Tables 4–6).

4. Results

During the three-year period a total of 580 cases were entered into the Registry, but of this 349 were resected specimens and formed the basis of this report. Approximately half (49%) of the tumors were treated at the UHWI while just over a quarter of the patients came from the NPHL but all regional hospitals were represented as was a single Kingston-based private pathology laboratory (see Table 1). The initial analysis compared UHWI and all other facilities as a group (Other) and this showed that distribution of patient sex treated was similar across facilities (UHWI vs. Other) with there being a slightly higher proportion of women treated at each facility 53% & 54 respectively. The distribution of the ages of patients treated was similar across facilities (UHWI vs. Other) with mean age of patients being 61.5 & 62.3 years old respectively. For margin status, degree of differentiation and lymphovascular invasion there was no association between facilities (UHWI vs. Other). A smaller percentage of tumors treated at UHWI had Crohn's like reactions when compared to other facilities ($p = 0.01$). With respect to tumor site there was a larger proportion of tumors located in the sigmoid that were treated at UHWI when compared to other facilities while the reverse trend was seen in tumors located in the rectum ($p = 0.027$) (Table 2a).

Other characteristics examined regional nodes positive and depth invasion did not display any association with facility. The tumors treated at UHWI have a greater median number of regional nodes when compared to the median number of regional nodes examined at other facilities ($p < 0.001$) (Table 2b). However when nodal resection was examined with respect to tumor site only tumors of the right and sigmoid colon had adequate nodal resection ($p < 0.001$) (Table 3).

Comparison was then made with individual facilities. Most tumors seen at the various facilities were moderately differentiated however, 31% of tumors treated at DPS were well differentiated compared to 11% at UHWI, 9% at KPH & STH and 14% at CRH & MRH; $p = 0.021$. The proportion of tumors having involved circumferential margins was higher at DPS when compared to other facilities $p = 0.035$. The proportion of tumors with lymph vascular invasion present was much higher in tumors treated at DPS when compared to other facilities ($p = 0.01$). Tumors treated at CRH & MRH had a much smaller proportion that had a Crohn's like reaction ($p < 0.001$).

Kruskall–Wallis tests were conducted on numeric tumor characteristics in order to compare them across facilities. Tumors treated at DPS had the largest median number of positive regional nodes as well as the largest median number of regional nodes examined. Tumors treated at CRH & MRH had the smallest median depth invasion ($p = 0.0159$).

It was found that patients treated at UHWI were more likely to have positive nodes found ($RR_A = 1.23$; $P < 0.05$), women were more likely than men to have positive nodes found ($RR_A = 1.30$; $P < 0.05$) and tumors located in the rectum were less likely to have positive nodes found when compared to tumors in the right/

Download English Version:

<https://daneshyari.com/en/article/4195292>

Download Persian Version:

<https://daneshyari.com/article/4195292>

[Daneshyari.com](https://daneshyari.com)