ORIGINAL ARTICLE

Colorectal Cancer Pathology Reporting: An Audit

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ABSTRACT

Aims: To evaluate the information content of Pathology reports of surgically resected Colorectal Cancer specimens issued by different histopathologists.

Methods: All reports of colorectal cancer resection specimens during the years 2011-12 at DHQ level hospital were evaluated against: (a) standards previously agreed as desirable by histopathologistsand (b) standards considered to be the minimum required for informed patient management.

Results: 300 reports were evaluated. There was considerable variation in the completeness of reporting of individual items of information. While many items were generally well reported, only 52% (156/300) of rectal cancer reports commented on the completeness of excision at the circumferential resection margin and only 30% (90/300) of all reports stated the number of involved lymphnodes. All of the previously agreed items were stated in only 11% (33/300) of reports on colonic tumors and 4.0%(12/300) of reports on rectal tumors. Seventy eight per cent (234/300) of colonic carcinoma reports and 47% (141/300) of rectal carcinoma reports met the minimum standards.

Conclusion: The informational content of many routine pathology reports oncolorectal cancer resection specimens is not sufficient for quality patient management and for cancer registration. Template proforma reporting using nationally agreed standards is recommended as a remedy for this, along with review of laboratory practices in the light of current knowledge and motivation of pathologists through their involvement in cancer management teams.

Keywords: colorectal cancer; histopathology; audit; quality; guidelines; protocols

INTRODUCTION

Histopathological reporting of resection specimens for colorectal cancer can give important information for the clinical management of the affected patient and for the evaluation of health care as a whole. For the individual patient, it confirms the diagnosis and describes variables that affect prognosis. For example, a number of randomized trials have demonstrated the role of adjuvant chemotherapy for tumors that have metastasized to the regional lymph nodes (Dukes' C cases).(1) Inrectal cancer, circumferential resection margin involvement is an important predictor of local recurrence and patient survival(2) which might identify patients who would benefit from postoperative adjuvant therapy.(3) In addition, pathology reports are often utilized by insurance companies in assessing financial risk when patients seek insurance after a diagnosis of cancer. Therefore, it is important that pathology reports of colorectal cancer specimens should contain the accurate and complete information necessary to fulfill these functions.

Guidelines regarding information content of pathology reports in colorectal cancer have been published in standard textbooks of pathology(4,5).The recommendations range from comprehensive lists of data items that include all variables that could be of relevanceto prognosis to more focused, pragmatic 'minimum requirements' whose relevance to current patient management attempts to be more evidence-based. In this study, we are presenting the findings of an audit of pathology reports of surgically resected colorectal cancer specimens at DHQ Hospital Okara.

METHODS

The population based audit of colorectal cancer management was directed by an expert working party of histopathologists. All patients with colorectal cancer treated in the hospital during the year of 2011-12 were identified from a comprehensive search of a number of data recording systems and, after obtaining permission from the surgeons involved. The presence or absence of a statement on items of information in the pathology reports(11 for colonic cancers, 13 for

rectal cancers)were recorded on a proforma by a single surgical research fellow, and transferred to a computer database by an optical mark scanner to be analyzed using the Statistical Package for Social Sciences (SPSS version 18). The items of pathology information recorded are shown in table 1. They were basedon standards for pathology reporting of colorectal cancer that had been agreed previously by histopathologists after discussion of set guidelines.

The informational content of all of the pathology reports were audited against the agreed standards. The percentage of reports containing a statement on each of the data items listed in table 1 was obtained. Finally, the percentage of reports containing statements on all of the data items in table 2was obtained, these less rigid criteria being considered by to be the minimum necessary for adequate reporting

Table 1: Data items obtained from the pathology reports Used for Audit

Length of the specimen
Maximum dimension of the tumor (size)
Distance of tumor from the nearest resection end
Circumferential excision plane involvement
Minimum distance of clearance at the circumferential
Macroscopic description of the tumor
Histological type of the tumor
Histological grade of the tumor
Extent of tumor invasion into and beyond the bowel wall
Involvement of the resection ends by tumor
Number of Involved regional lymph nodes by tumor
Dukes' stage

Table 2: Minimum criteria for adequate reporting of carcinoma of colorectum.

Histological grade of the tumor
Histological type of the tumor
Extent of tumor invasion into and beyond the bowel wall
Involvement of the resection ends by tumor
Involvement of regional lymph nodes by tumor
Involvement of the circumferential excision plane

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RESULTS
In total, 300 pathology reports were available for assessment, 57.2% of which were resections for colonic cancer and 42.8% for rectal cancer. The responsibility for reporting colorectal cancer specimens was carried out after consultation. All reports described the histological type and grade of the tumor and although almost all stated the extent of invasion into or beyond the bowel wall. Whether or not the lymph nodes were involved was also generally well reported (95.2% overall). However, the absolute number of lymph nodes involved was poorly reported, being given in only 30% of cases. Formal Dukes' staging of the tumor was given in 74.9% of cases. A statement on completeness of excision at the ends of the specimen was given in 91 % of reports. The distance from the tumor to the nearest resection end was less frequently mentioned.

DISCUSSION
Quality pathology reports of colorectal cancer specimens are essential to ensure clinical effectiveness in the management of this malignancy (6). Inadequate histopathology can lead to inappropriate therapy and misleading information for patients. Therefore, it is of considerable concern that this audit of pathology reporting highlights important deficiencies in about one fifth of reports on colonic cancer resections and in half of reports on rectal cancer resection. It is very important to emphasize that we audited only the information content of issued reports. Our investigation did not include diagnostic precision, the way that the specimens have been handled, the sampling of the specimens for microscopic examination, or the accuracy of any of the data(7). Although all of these factors would obviously influence the quality of the information that is presented in a pathology report, we assessed only the completeness of the final report with regard to a defined number of items of information.

The findings of our audit suggest that the informational content of colorectal cancer reports issued by different pathology labs leave quite much to be desired. Although it could be argued that some of the data items required are not necessary for informed patient management, such as the length of the specimen, the size and appearance of the tumor(8), however, these are all items that would generally be regarded as reflecting careful examination of the specimen and would contribute to the importance of the report in clinical auditing of preoperative patient assessmentand surgical technique, However, the most important deficiencies relate to the

description of circumferential resection plane involvement in rectal carcinoma sand the number of lymph nodes involvement by metastases. One of the important prognostic indicator in rectal cancer is circumferential margin involvement; having high predictive value for both survival and local recurrence. (9) Accurate reporting of circumferential margin involvement is likely to have great influence on the decision of using adjuvant radiotherapy or chemotherapy. Our finding that this information was described in only a half of rectal cancer reports suggests that effective patient treatmentmay be being compromised by incomplete reporting. Another factor used to select patients for postoperative chemotherapy is involvement of lymphnodes.(10) Moreover, the actual number of lymph no desinvolved also has independent prognostic significance,' sufficient to warrant separation of cases with less than four positive nodes fro mother node-positive cases in both the TNM and the Jass staging systems.

The frequent failure of reports to contain information on circumferential rectal margin involvement and the number of positive lymphnodes, along with the lack of a stated Dukes' stage and a comment on the distance from the tumor to the resected end of the specimen in about one quarter, are largely responsible for the fact that few reports met all of the standards originally agreed by the pathologists. Because of this, the reports were also audited against a minimum set of standards that were regarded as necessary for postoperative management of the patient. Nevertheless, only 78.1% of colonic cancer reports and 46.6% of rectal cancer reports were complete. The difference between these two figures can be accounted for by the poor reporting of circumferential margin involvement in rectal tumors, and this is clearly the most important factor requiring urgent remedialattention. The appreciation of the prognostic value of circumferential margin involvement in rectal cancer resections has only been recognized recently (7).

We believe that this is strong evidence for the need of a formal reporting process using structured template proformas which would ensure that a statement on each critical item of information was contained within the report. A number of such template proformas have been published but informal discussions with pathologist colleagues suggests a reluctance to use them because these are consideredas being too detailed for routine use. We advocate its use, in the hope that it might become a national standard for minimum reporting. We do not suggest that proforma reporting should entirely replace the current practice of using free text in reports. Pathologists must be free to include whatever information they consider as useful and there will always be reports that require description of special or unusual features in specimens. However, we believe that template proforma will go a long way towards improving the quality of the information provided for patient management (9).It will also facilitate recording of data on computerized information systems and its retrieval for input into audit, clinical trial sand cancer registration.

We believe that evolving medical education can contribute by informing pathologists of relatively new approaches to dissecting and sampling resection specimens to obtain the maximum amount of information in an efficient way, 1 and in highlighting how clinical decisions on adjuvant therapy depend on careful pathological staging and evaluation of resection margins. Finally, pathologists must be motivated by being continually informed and reminded of the importance of their participation by their surgeon and oncologist colleagues who should ensure that pathologists are key members of the multidisciplinary teams which will deliver effective cancer care for the next millennium.' The recognition of individual consultantsas expert pathologists for site-specific cancers within the developing cancer units and centers should help considerably in this respect.

REFERENCES

1. Lynch HT, de la Chapelle A: Hereditory colorectal cancer. N Eng J Med 212:841, 2011
2. Kinzler KW, Vogelstein B: Lesions from hereditary colorectal cancer. Cell 85: 143, 2009
3. Jass JR: Pathogenesis of colorectal cancer. Surg Clin N Am 81:892, 2010
4. Jemal A: Cancer statistics, 2012.CA Cancer J Clin 41;23 2012.
5. Weisburger JH. Causes, relevant mechanisms, and prevention of large bowel cancer. Semin Oncol 2008, 16:216-229
6. Watson P, Lynch HT. Extracolonic Cancer in hereditary non polyposis colorectal cancer. Cancer 2009, 61:478-512
7. Rivard J-Y, Bedard A, D, Diamone L. Colonic Neoplasm following ureterosigmoidostomy. J Urol 2011, 112:481-512
8. Mills SE, Allen MS Jr. Colorectal Carcinomas in the first decades of life. Am J Surg Pathol 2009,2:341-345
9. Hill M J. Etiology of colonic cancer. Cancer 2012, 31: 815-819
10. Levin B. Colorectal cancer screening, Cancer 2010, 42:105-110