



# The use of a proforma improves colorectal cancer pathology reporting

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The detail and accuracy of pathological reporting for colorectal cancer is becoming increasingly recognised as important in the overall management of the patient. However, there is criticism of the variable standards of reporting. We assessed how the use of a proforma affected the completeness of reporting within one hospital.

Data on all colorectal cancer patients attending one teaching hospital has been collected prospectively over a 15 month period from 1997 to 1998. The Royal College of Surgeons/Association of Coloproctology proforma lists all items considered to be essential for a complete pathological report of colorectal cancer. Its introduction in September 1997 allowed us to compare reporting before the proforma to that after.

Of 54 patients, 46 (85%) had one or more items missing from their report before introduction of the proforma compared with only 8/44 (18%) patients after the proforma ( $P<0.001$ ). Circumferential resection margins and apical node status were the items most often absent, being significantly more frequently reported after the proforma ( $P<0.05$  and  $P<0.001$ , respectively). There was no difference in the median number of lymph nodes harvested after proforma introduction.

The introduction of the proforma has not only resulted in improvements in reporting, but has increased the dialogue between surgical oncologists and pathologists. These features should result in improved overall management of the colorectal cancer patient.

*Key words:* Histopathology – Audit – Colorectal cancer staging

There is a wide variation in the outcome of surgery for colorectal cancer between different hospitals and regions.<sup>1–3</sup> This suggests that there may be scope for improving the results of treatment using existing therapeutic regimens. One area of colorectal cancer

management that has become accepted as increasingly important is pathological reporting. As well as its importance for the counselling of the patient, in terms of diagnosis and prognosis, accurate pathological reporting also has a large role in influencing the

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Table 1 Documentation of each pathological item for resected colorectal cancer patients both before and after introduction of a proforma

Documentation absent	Preproforma n = 54	Postproforma n = 44	P value
Length of specimen	0	0	n.s.
Size of tumour	0	0	n.s.
Distance from nearest resection margin	3 (5.5%)	1 (2.3%)	n.s.
Macroscopic appearance	0	0	n.s.
Histological type	0	0	n.s.
Histological grade	0	0	n.s.
Vascular invasion	1 (1.8%)	1 (2.3%)	n.s.
Circumferential resection margin	16 (29.6%)	3 (6.8%)	< 0.05
Apical node status	38 (70.4%)	3 (6.8%)	< 0.001
Dukes' stage	1 (1.8%)	0	n.s.
TNM stage	1 (1.8%)	0	n.s.
Overall number of deficient reports	46/54 (85.2%)	8/44 (18.2%)	< 0.001

institution of adjuvant therapy. In addition, the significance of involvement of circumferential resection margins for both prognosis, audit of the technical quality of the surgeon and use of adjuvant radiotherapy, has become increasingly recognised.<sup>4</sup> There is also evidence to suggest that the quantity of lymph node harvest has a direct effect on staging and that up to a quarter of cancer cases may be upstaged with exemplary lymph node harvesting.<sup>5</sup>

Unfortunately evidence from several audits suggest that the overall standard of reporting is poor, with many reports failing to contain important data.<sup>6,7</sup> In order to address this general weakness of reporting, The Royal College of Surgeons/Association of Coloproctology (RCS/ACP) proforma has been advocated as a structured template containing all essential pathological data.<sup>8</sup>

We assessed the effect of introduction of this proforma on the standard of pathological reporting in a large teaching hospital.

## Patients and Methods

As part of an ongoing audit, data have been collected prospectively on all colorectal cancer patients attending the Northern General Hospital from January 1997 to March 1998. Included in the data has been the pathological report of all resected specimens. Since September 1997, the RCS/ACP proforma has been incorporated in all of these reports. This has enabled the completeness of the reports to be examined before and after the introduction of the proforma. The data analysed included the items listed in Table 1.

Statistical analysis was carried out using the chi square test.

## Results

There were a total of 111 patients diagnosed with colorectal cancer during the 15 month analysis period. Of these, 13 patients were treated either with no operation or palliative surgery; they had no or partial resection of the tumour and were, therefore, excluded from analysis. This left 98 patients for study, 54 in the preproforma group and 44 in the postproforma group. Documentation of each individual pathological item both pre- and postproforma are listed in Table 1.

The completeness of the overall report for each patient was statistically, significantly better after introduction of the proforma. With regard to individual items, significant differences were seen in the recording of the circumferential resection margins and apical node status. However, with regard to apical node status, 32 (78%) of the incomplete reports (29 preproforma and three postproforma) had the nodal status reported overall as clear. The apical node might, therefore, be assumed to be clear. Even excluding these 32 patients, there was a significant improvement in documentation of apical node status after introduction of the proforma (nine patients versus zero patients,  $P < 0.05$ ). Assuming the 32 patients had indirect correct documentation of apical node status, 22 patients from the preproforma group (41%) still had incomplete pathological documentation compared with only five patients from the postproforma group (11%). This remains a significant difference ( $P < 0.02$ ).

The median number of lymph nodes harvested was similar for both groups. The median for the preproforma group was 7 (range 1–28), while the median for the postproforma group was 8 (range 2–28).

## Discussion

Our study has shown that the comprehensiveness of pathological reporting in our hospital has markedly improved as a result of introduction of a proforma; 85% of patients had one or more items absent from the final report compared with only 18% after introduction. These changes were mainly due to improvement in the documentation of circumferential resection margins and apical node status. Some of the other data, such as length of specimen, size and appearance of the tumour, although not significant in altering patient management, were important to note because they reflect on how closely the pathologist examined the specimen as well as potentially confirming pre-operative endoscopic or radiological findings.

It is important to stress that this study has assessed the reporting of colorectal cancer only and has not directly examined the technical quality and accuracy of the pathology department. However, the similarity between the two groups in the gross appearance and particularly the number of lymph nodes harvested examined suggests that this quality was consistent and unaffected by the proforma.

Of the preproforma reports, 30% failed to record the status of the circumferential resection margins. This particular item of information has become increasingly recognised as essential as both a prognostic indicator and a predictor of the need for adjuvant therapy.<sup>4</sup> Its poor reporting has also been noted in previous studies.<sup>6</sup> However, introduction of a proforma resulted in a 5-fold decrease in the number of inadequate reports for this specific item. There were a small number of absent details after proforma introduction. These may be explained by the pathologists being unaccustomed to this style of reporting, particularly as they all occurred soon after proforma introduction. With continued use and acceptance, it is expected that all details will be included.

One further important prognostic indicator that was poorly reported before the proforma was apical node status. This was only specifically stated in 30% of preproforma reports. However, in the majority of cases, the apical node status could be assumed to be

negative if the overall nodal status was reported as negative. Nevertheless, the apical node may not have been identified and this could, theoretically, have implications in patient management.

Our results clearly show an improvement in pathological reporting of colorectal cancer with the use of a proforma. It is likely that a similar improvement in reporting would follow the introduction of proformas for other cancer types. The improvement in documentation should lead to more effective planning of patient management by the surgical oncologist. Although histopathological proformas are often unpopular, their use as an *aide memoir* and adjunct to the standard free text reports has led to their general acceptance in our hospital. Introduction of the proforma has itself led to increased dialogue between the surgeons and pathologists resulting in a better understanding of the important aspects of reporting and, in turn, improved patient care. In addition, the form is a useful record for the purposes of research and audit.

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