The use of a standard proforma in breast cancer reporting

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Abstract

***Aim*—To determine whether the introduction of a standard reporting proforma has led to an improvement in the completeness of histopathology reports for breast cancer excision specimens.**

***Methods*—A standard reporting proforma was designed using the Royal College of Pathologists' minimum dataset for breast cancer histopathology reports and the national histopathology reporting form of the National Health Service (NHS) breast screening programme. This was introduced into our department in June 1999, with reports generated from the proforma replacing the standard text reports. The pathological information contained in 50 text reports issued before the introduction of the proforma and 50 reports generated using the proforma was compared with the minimum dataset and NHS breast screening programme guidelines.**

***Results*—A general improvement in documentation of individual pathological features was noted after introduction of the proforma. This was most significant in relation to documentation of features, such as microcalcification and ductal carcinoma in situ. In addition, important features such as tumour grade, tumour size, and hormone receptor status were documented more frequently in the proforma group. There was an overall increase in the number of reports regarded as complete after introduction of the proforma.**

***Conclusions*—The introduction of a standard proforma led to a significant improvement in the completeness of breast cancer histopathology reports in this centre, but continued vigilance is needed to ensure that standards continue to improve.**

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Keywords: breast; proforma; histopathology; minimum dataset

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The prognostic importance of histopathological parameters such as tumour size, lymph node status, histological grade, and histological type in breast cancer cases is well documented.[1–3] Other features such as vascular invasion,[4] hormone receptor status, and adequacy of surgical excision[5] are also of independent prognostic value. These factors are of use in predicting local recurrence and overall survival, and contribute to the planning of future patient management.[6]

The recently published Royal College of Pathologists' minimum dataset for breast cancer histopathology reports[7] outlines the information that should be documented for all breast cancers. The national histopathology reporting form of the National Health Service (NHS) breast screening programme also acts as a guideline.[6] Previous studies in the UK[5] and Australia[8] have shown that, to date, the information included in breast cancer histopathology reports has varied between different departments. The minimum dataset aims to standardise the quality of histopathology reporting in breast cancer cases. Some authors[5 8] advocate the use of a standard reporting proforma to ensure that important data are not omitted from pathology reports. To date, no formal evaluation of proforma reporting of breast cancer cases has been made. However, this style of reporting improves the overall quality and completeness of reports for colorectal carcinoma resections[9 10] and cervical loop excision biopsies.[11]

At the Royal Victoria Infirmary in Newcastle upon Tyne a standard reporting proforma was designed, using the general structure of the Royal College of Pathologists' minimum dataset and the national histopathology reporting form of the NHS breast screening programme. Reports generated using this proforma replaced the standard text report for breast cancer excision specimens in June 1999. Figure 1 shows the reporting proforma and an example of a report generated using this proforma. The aim of our study was to assess the impact of introducing this proforma on the completeness of histopathology reports generated in our department.

Materials and methods

A total of 100 breast cancer histopathology reports were retrieved from the files of the department of histopathology at the Royal Victoria Infirmary, Newcastle upon Tyne. These were all cases in which a diagnosis of invasive primary breast carcinoma had been made. All 100 cases were reported in 1999. Of these cases, 50 were standard text reports and 50 were proforma style reports. In each group, there were 25 mastectomy reports and 25 localisation biopsy or wide local excision biopsy reports. The 100 cases were identified consecutively from the files.

Most of these reports were formulated by trainee histopathologists under the supervision of one of three specialist breast pathologists. However, six of the cases in the text group and four of the cases in the proforma group were reported by a specialist consultant only.

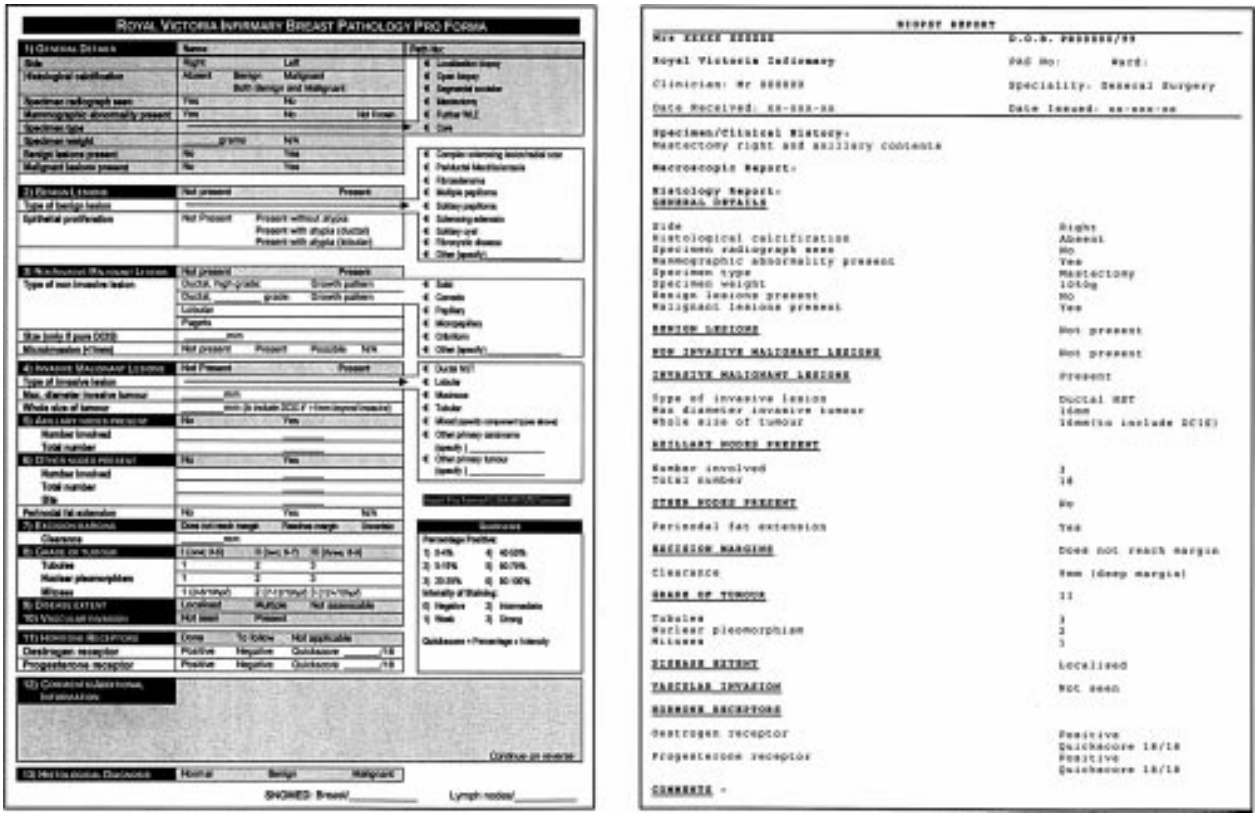

Figure 1 The standard breast pathology proforma used in Newcastle and a sample report generated using this method.

The completeness of these reports was assessed against the Royal College of Pathologists' minimum dataset for breast cancer reports[7] and the requirements of the NHS breast screening programme.[6] Statistical analysis was carried out using the χ^2 test.

Results

Table 1 shows a comparison of the rate of documentation of each histopathological parameter in the text and proforma reports. Although there is a general upward trend in the reporting of individual features using the proforma, only occasional features show a significant improvement.

Table 1 Documentation of pathological features in text and proforma reports for breast cancer excision specimens

	Mastectomies			*Biopsies*		
Documentation of feature present	*Text (n = 25)*	*Proforma (n = 25)*	*p Value*	*Text (n = 25)*	*Proforma (n = 25)*	*p Value*
Specimen weight	n/a	n/a	–	24	25	NS
Histological subtype	25	24	NS	25	25	–
Tumour grade	23	25	NS	25	25	–
Invasive tumour size	22	25	NS	24	25	NS
Total lesion size	19	21	NS	21	23	NS
Closest margin named**	22	5	<0.001	16/19	13/16	NS
Margin measurement	24	24	–	24	25	NS
Lymphovascular invasion	24	25	NS	25	24	NS
Total no. of lymph nodes*	22/22	23/23	–	14/14	15/15	
No. of positive nodes*	22/22	23/23	–	14/14	15/15	–
ER status	23	25	NS	22	25	NS
PR status	22	25	NS	21	24	NS
Quickscore	22	25	NS	18	25	<0.01
Presence of calcification	20	25	<0.025	21	25	<0.05
DCIS present?	20	25	<0.025	22	25	NS
If DCIS present	(10 cases)	(16 cases)		(14 cases)	(12 cases)	
Extent of DCIS	4	13	<0.05	11	10	NS
DCIS grade	9	15	NS	10	11	NS
DCIS pattern	6	16	<0.01	10	11	NS

*Not all specimens in the sample included axillary nodes; **only some specimens were orientated to allow specific identification of margins.
DCIS, ductal carcinoma in situ; ER, oestrogen receptor; NS, not significant; PR, progesterone receptor.

The completeness of these reports was assessed against the Royal College of Pathologists' minimum dataset for breast cancer reports[7] and the requirements of the NHS breast screening programme.[6] Statistical analysis was carried out using the χ^2 test.

In the mastectomy group, there was an improvement in the rate of reporting microcalcification. Only 80% of the text reports included this feature compared with 100% of the proforma style reports. This is an important feature to document because it allows correlation with radiological findings. There was also a significant improvement in the documentation of coexistent ductal carcinoma in situ (DCIS), which featured in 80% of text reports and 100% of proforma reports. The prognostic features of DCIS, such as extent of disease and histological pattern, were also documented in a greater number of the proforma reports. Surprisingly, there was a significant decrease in the number of reports specifically naming the closest margin of excision, either in the macroscopic or microscopic description. This is probably a reflection of the fact that the closest margin of excision in mastectomy specimens is usually the deep chest wall margin.

In the biopsy group, there was again an improvement in the documentation of microcalcification, from 84% to 100%. The Quickscore assessment of hormone receptor status, which is the quantitative method of choice in our department, was also more frequently used. This appeared in 100% of proforma reports, but only 72% of text reports. The frequency of reporting DCIS and its prognostic features did not vary significantly.

In both the mastectomy and biopsy groups, features such as histological grade, histological

Table 2 Overall rates of complete reports in text and proforma groups

	Mastectomies			Biopsies			
No. of complete reports	*Text (n = 25)*	*Proforma (n = 25)*	*p Value*	*Text (n = 25)*	*Proforma (n = 25)*	*p Value*	*Total p Value*
No. of reports including four main features (grade, type, size, nodes)	21	24	NS	24	25	NS	NS
No. of reports including all required features	8	20	<0.001	9	17	<0.001	<0.001

NS, not significant.

subtype, and invasive tumour size were generally well reported in the text and proforma groups. However, small improvements (not reaching significance) were still discernible after the introduction of the proforma. Where lymph nodes were included with the specimens there was full documentation of nodal status in both the text and proforma groups.

Table 2 shows the number of reports in each group that were regarded as complete; that is, those that included all of the appropriate histopathological parameters as stated in the minimum dataset. As a whole, 74% of the proforma reports were regarded as entirely complete, compared with 34% of the text reports. This represents a significant upturn ($p < 0.001$), but it is of concern that the percentage of complete reports in the proforma group is still less than 100%. Even in the proforma reports, minor omissions and typographical errors have gone unchecked.

Previous authors have suggested that the main prognostic features in breast cancer are histological type, grade, tumour size, and lymph node status.[1 3 5] As shown in table 2, the overall rate of documentation of these four main features was of a satisfactory standard in both text and proforma reports, with no significant variation between the two groups.

Discussion

Our study has demonstrated a significant improvement in the completeness of histopathological reporting in breast cancer cases after the introduction of a structured standard proforma. These changes are most striking in the documentation of items such as microcalcification and the features of DCIS, which are included in the guidelines of the NHS breast screening programme[6] and the Royal College of Pathologists' minimum dataset.[7] The major prognostic indicators in these cases—histological type, grade, tumour size, and lymph node status—were generally well reported before the introduction of the proforma, but even in this area small improvements were identified.

The transition to proforma reporting of breast cancer excision specimens was smooth in our department, with a favourable response from reporting pathologists, secretarial staff, and referring clinicians. This has also been the experience of other authors who have reported on the use of proformas in histopathology.[11]

The improvement in documentation of histopathological features allows more effective planning of further patient management by the breast cancer multidisciplinary team. The proforma method of reporting optimises the amount of histopathological information that is available for discussion at the weekly multidisciplinary team meetings, where crucial management decisions are made. The proforma report may also be easier to use for research and audit purposes, owing to a standardisation of report layout. The Royal College of Pathologists has now published minimum datasets for cancer reporting in many organs, and histopathology reports are expected to include a large number of data items. As a result, many histopathology departments may convert to using proformas for cancer resection specimens, to ensure a consistent and comprehensive standard of reporting. However, as this study has shown, proforma reporting is not foolproof and continued vigilance, including regular audit, is necessary to ensure that the quality of cancer reporting continues to improve.

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