The presentation and management of female breast symptoms in general practice in Sheffield

Peggy Newton, David R Hannay and Rema Laver


**Background.** Relatively little is known about the incidence of breast symptoms in primary care consultations and GPs’ patterns of referral to secondary care.

**Objective.** We aimed to identify the consultation rate for breast symptoms in general practice and to describe the management of those symptoms, including patterns of referral to secondary care.

**Method.** Prospective data were collected by 248 GPs concerning 508 women consulting for breast symptoms. A verification study was carried out in nine practices to compare the data collected prospectively with information recorded contemporaneously in the same patients’ notes. Main outcome measures were number of patients with lump, pain, nipple discharge, skin or nipple problems, family history or other symptoms at first or subsequent consultation, management action, age of patient and number of patients meeting study criteria for whom GPs did not record information in the prospective study.

**Results.** The mean number of consultations per GP over the 4-week recording period was 2.05. However, examination of a patient’s notes from a sample of nine practices participating in the verification study suggested that GPs recorded only slightly over half of the consultations for breast symptoms on the study pro forma. At their first consultation, 40% of women presented with a breast lump and 40% with breast pain. Fifty-eight per cent of women with lumps were referred for specialist evaluation after a first or subsequent consultation, whereas the comparable percentage for women referred for pain was 17%.

**Conclusions.** At an initial consultation for breast symptoms, GPs refer approximately one-third of women to secondary care. Women are most likely to be referred for a lump or for a family history of breast cancer and least likely to be referred for breast pain. The verification study suggests that relying on GPs to collect data on a specific group of patients may produce an underestimate of the consultation rates for a specified condition.

**Keywords.** Breast diseases, data collection, general practice, hospital referrals, reproducibility of results.

Introduction

The age-standardized incidence and mortality rate for breast cancer in England and Wales is one of the highest in the world with 13 000 deaths per year. Recent measures to address this problem include the Health of the Nation targets for reducing mortality through screening, guidelines issued to purchasers of cancer services, guidelines issued to GPs for referring patients with breast symptoms and additional money allocated to health authorities to aid in the rapid diagnosis of breast cancer.

There is strong evidence that most women first discover breast lumps or other abnormalities themselves and that most patients with breast symptoms are seen first by their GP, and only a minority will be referred to specialist care. Therefore, an essential first step in improving the diagnosis and treatment of breast cancer is to be able to describe the presentation of breast symptoms in primary care and their subsequent patterns of referral.

There are relatively few studies of the presentation of breast symptoms in general practice. Bywaters undertook a retrospective study of consultations recorded by
six GPs in Birmingham over a 27-month period; Nichols and his colleagues carried out a 4-week prospective study of women presenting with breast symptoms to 93 GPs in Southampton, and Roberts et al. conducted a prospective study with five general practices in Edinburgh over an 18-month period. More recently, Edwards and his colleagues have undertaken an extensive study of the presentation and management of breast symptoms in South Wales (Edwards et al., personal communication).

Methods

The prospective study

Data was collected prospectively between January and July 1995. All GPs in Sheffield (n = 321) were invited to participate in a study of GPs’ management of breast symptoms, and those who failed to respond to an initial letter received a follow-up letter. GPs who failed to respond to either letter were contacted by telephone. In total, 257 GPs (80% of GPs) from 88 practices agreed to participate in the study.

Each practice with participating GPs was asked to identify a 4-week period between January and July 1995 when it would be convenient to record information. Wherever possible, a contact person in each practice was identified to liaise with the research assistant on the project. Basic demographic information was collected about each practice, including number of GPs, funding status and the list size of women aged over 16 years. When the practice was unable to verify its list size, this information was collected from the Family Health Service Authority (FHSA). Information was collected on the age and gender of all GPs invited to participate in the study.

Each GP was asked to use a standardized pro forma to record information about all women consulting primarily for a breast problem during the 4-week recording period. The pro forma utilized the basic categories used by Roberts et al. in their analysis, but also included the additional categories of ‘skin or nipple change’ and ‘family history’. The GP was asked to record the patient’s age and a practice-based identifier, her presenting symptoms (lump, pain, nipple discharge, skin or nipple change, family history or ‘other’) and her management (advice or reassurance, return appointment; prescription; and referral to a specialist, including reason for referral). Pro formas were completed only for women who consulted primarily about their breasts; they were not completed for women who had a breast examination as part of a consultation for contraceptive advice, hormone replacement therapy (HRT) or a cervical smear.

Completed pro formas were collected by the research assistant at the end of the recording period. In practices where none of the participating GPs had completed any forms, further enquiries were made about GPs’ involvement in the study. Careful questioning suggested that although GPs in six practices had nominally agreed to take part, they did not actually participate in the study. These GPs were deemed to be ‘non-participants’, thus producing a final sample of 248 GPs (77%) from 82 practices.

The verification study

During the course of the prospective study, the authors became aware of a discrepancy between the number of referrals reported in the prospective study and the number of actual referrals received at the local hospitals. There appeared to be a serious shortfall in the number of cases being reported by the GPs in the prospective study. A verification study was undertaken to estimate the size of this shortfall.

It was decided that the best way to verify the data was to examine the notes of all female patients over the age of 16 years seen in each practice during the study period. Since examining case notes is expensive, only a sample of practices could be included in the verification study. A quota sampling methodology was devised, based on the ratio of cases recorded in the prospective study to the practice list size for women aged over 16 years. In order to simplify the sampling process, only practices in which all partners participated were included. This reduced the total number of potential practices from 82 to 72. The practices were then divided into tertiles according to the ratio of referrals to list size, and a table of random numbers was used to select three practices from each tertile.

Within each selected practice, the study was conducted with the help of one member of practice staff who reviewed the records of all female patients over sixteen having appointments during the recording period. The results of this review were divided into three categories as follows.

(i) Verified reports: patients reported in the prospective study for whom breast complaints were recorded in the notes.
(ii) Unverified reports: patients reported in the prospective study for whom no breast complaints were recorded in the notes.
(iii) Additional cases: patients for whom breast complaints were recorded in the notes but for whom no report was made in the prospective study.

Lack of resources and logistical difficulties prevented us from attempting to match hospitals’ records of referrals with referrals recorded in the GPs’ notes.

Results

The sample

In the prospective study, GPs recorded consultations for 508 women. There were 302 women who consulted for the first time with a breast problem and 206 women who had a first consultation for a breast problem prior to the
4-week period and who made a subsequent consultation during the recording period. (There were 18 women who made both an initial and a repeat consultation during the recording period. Only the first consultation for these women has been included in the analysis.)

The verification study confirmed the anticipated shortfall in GPs’ recording. As shown in Table 1, 76% of the cases (59/78) in the prospective study were verified. Reasons for failure to verify cases included: no record of a consultation for breast symptoms in the patient’s notes; insufficient or vague information in the notes; notes missing because the patient consulted as a temporary patient or had left the GP’s list; or because the patient had died. An additional 72 cases which met the inclusion criteria were identified from the notes but were not recorded by GPs in the prospective study.

The mean number of forms returned by each GP for the 4-week period of the prospective study was 2.05, median = 1 (range 0–17; SD 2.43). Female GPs recorded a significantly higher number of consultations, with a mean of 3.04 and median of 2.5 (range 0–17; SD 2.98); the mean for male GPs was 1.33 with a median of 1.0 (range 0–7; SD 1.62) (Mann–Whitney U test: z = –5.22; P < 0.0001.)

GPs who participated in the study were compared with those who did not participate. There was no significant difference between the two groups in terms of age, with the mean age of the participants being 42.1 years (range 27–68, SD 8.61) and that of non-participants 43.5 years (range 32–63; SD 8.24) (t = 1.29; P = 0.20, 95% CI for the difference 0.78 to 3.70 years). Participating GPs were significantly more likely to be female (42%, 104/248), whereas the comparable proportion of women amongst non-participating GPs was 33% (24/71) (chi-square = 41.43; 1 d.f.; P < 0.0001). One-third (8/24) of the non-participating practices were fundholding versus 24% (17/72) of participating practices (chi-square = 30.26; 1 d.f.; P < 0.0001).

Breast symptoms
Because some women presented with multiple symptoms, they have been categorized according to a hierarchy of symptoms, with the most clinically significant symptoms taking precedence over other symptoms. The hierarchy used was lump, nipple discharge, pain, skin or nipple problems and family history. For example, when a GP listed a lump as one of a woman’s presenting symptoms, the woman was classified as having a lump even if she also was described as having pain. The same procedure was used with each of the other symptom combinations. A woman whose only concern was her family history was classified as such. ‘Other’ symptoms was a heterogeneous category used for a wide range of symptoms of varying clinical significance. They included breast changes on the contraceptive pill or HRT, requests for prescriptions for breast complaints, pain from an implant, concern about a prosthesis, lump under the arm, cramp under the breast, concern about size of breasts, problems in breast feeding, concern about a malformed rib cage, spontaneous bruising and a consultation over a declined mammogram. In the one instance in which the GP wrote ‘lumpiness’ into the ‘other’ category, the woman has been classified as having a lump.

As shown in Table 2, women were most likely to present initially with either a lump (40%, 121/302) or pain (122/302), with these categories representing 80% (243/302) of the total consultations. Nipple discharge accounted for 3% (10/302) of initial consultations, while skin or nipple changes represented 5% (15/302) of these consultations. Concerns about a family history

<table>
<thead>
<tr>
<th>No. forms in prospective study</th>
<th>No. verified formsa</th>
<th>% verified</th>
<th>Additional cases identifiedb</th>
<th>Total (verified forms and additional cases)</th>
</tr>
</thead>
<tbody>
<tr>
<td>78</td>
<td>59</td>
<td>75.6</td>
<td>72</td>
<td>131</td>
</tr>
</tbody>
</table>

a Number of patients having data recording forms in the prospective study and for whom there was a record of a consultation for breast symptoms on the same day in the patient notes.

b Number of patients whose notes indicated a consultation for breast symptoms during the study period and for whom there was no data recording form from the prospective study.
of breast cancer was the reason for consulting in 2% (5/302) of initial consultations, whereas the diverse 'other' category represented 10% (29/302) of consultations.

Management actions taken during the consultation were recorded. The form allowed GPs to indicate more than one form of management. However, only one management action was coded for each patient, using the following hierarchy: referral, return appointment and no return appointment. GPs referred 37% (186/508) of women, and advised an additional quarter (126/508) to make a return appointment. Thirty-nine per cent of women (196/508) were reassured but not specifically advised to return. In addition, GPs carried out six fine-needle aspirations—three in the course of first consultations and three in the course of subsequent consultations.

Prescriptions were issued for 40% (79/196) of the women for whom pain was the predominant complaint. GPs specified the prescription in 56 cases, with 27 prescriptions being for gamolenic acid, 11 for antibiotics, seven for non-steroidals, six for pyridoxine hydrochloride, four for analgesics (paracetamol) and one for a diuretic (bendrofluazide).

When the presenting complaints of women who were referred were analysed, those presenting with concerns about their family history or a lump were most likely to be referred and those presenting with pain were least likely to be referred.

When the proportion of all referrals is considered by age group, there is a significant difference in the overall proportion of women referred by age group, with approximately one-third (84/258) of women in the 16–39 years age group being referred and one half (15/30) of women aged over 65 years being referred (chi-square = 579.07; \( P \), 0.0001) (See Table 3). 

### Discussion

The present study is based on a larger sample of GPs (248 GPs from 82 practices) than previously published work. The response rate was 77%, with male GPs, GPs
from single-handed practices and GPs from fundholding practices being under-represented. The lower participation rate of GPs from single-handed practices in research has been documented previously and may be related to the lower level of resources associated with such practices. It seems plausible that female GPs have a greater personal interest in the topic of breast disease and were thus more likely to participate. This interpretation is reinforced by the finding that women patients in our study were significantly more likely to consult female GPs. However, reasons for the relative unwillingness of GPs from fundholding practices to participate are unknown.

GPs in our study recorded a mean number of 2.05 consultations over a 4-week period. This is lower than the figure of 3.5 recorded by Nichols and his colleagues, who used the same time period for recording. If our figures for 4 weeks are projected for a year, they suggest each GP sees 15.8 women with new breast problems per year. This is similar to the incidence figure of 13 women per GP per year reported by Roberts et al., although it is lower than the rate of 34 new patients per year calculated from the figures produced by Nichols and his colleagues.

However, the verification study suggested that the form of recording used in the study produced a serious underestimation of the target group and that if all cases of women presenting with breast symptoms had been recorded, our estimate of the consultation rate would have been more similar to that recorded by Nichols et al.

It has also been suggested that there is considerable fluctuation in women’s presentation of breast symptoms, with campaigns to promote ‘breast awareness’ and publicity given to prominent women contracting breast cancer being likely to raise consultation rates. The year prior to our study was ‘Breast Awareness’ Year; however, we have no way of gauging its impact during the subsequent year. During the time our study was being conducted, we were aware of occasional television programmes or newspaper articles on breast cancer; however, there did not appear to be any sustained media attention given to the topic.

Women in our study were almost equally likely to present initially with a lump (39.9%) or pain (40.0%). The figures for a lump are in line with other published studies; however, they are somewhat lower than the proportion of 46% of a discrete breast lump reported by Edwards and his colleagues in South Wales. Our figure for pain is slightly lower than those reported in earlier studies (49–52%), but substantially higher than the rate of 28% noted in the more recent study by Edwards and his colleagues. Reasons for these differences are unclear and may reflect differing data collection techniques or a recording bias by participating clinicians.

Our recording form was adapted from analyses used in previously published work and did not distinguish between the categories of lump and lumpiness. Therefore, we are unable to compare the referral behaviour of the GPs in our study with the national guidelines which were issued after the study was conducted. However, it is of some concern that only 58% (126/186) of women whom GPs classified as having a lump were referred. Although some of these women may have had ‘lumpiness’ rather than a discrete lump or have been experiencing cyclical changes, the failure of GPs in this study to refer such a high proportion of patients is surprising. Further studies should distinguish between discrete lump and lumpiness and should evaluate the extent to which GPs’ referral behaviour is in accordance with the national guidelines. Our study raises the possibility that the guidelines may actually raise GPs’ rates of referral for breast lumps, thus increasing the numbers of patients seen in secondary care.

Unlike previous studies, we included a separate category for GPs to record women who had concerns about a strong family history of breast cancer. The inclusion of this category reflected the fact that GPs in Sheffield can refer women directly to a specialist clinic for a family history of breast cancer. Owing to the small numbers of women presenting in this category—1% (7/508) of the total, with 57% (4/7) of these women being referred—it is difficult to draw any inferences from this data. However, it is likely that the existence of this specialist facility influences patterns of referral.

The present study calls into question the technique of asking GPs to record data about the consultation rates for selected conditions. Anecdotal evidence from some of the doctors in our study suggested that several of them were participating in two other data collection exercises for other conditions at the same time. Both of these were studies initiated from outside our area, and we were not aware of their existence until after our data had been collected.

The pressure of multiple studies would appear to add considerably to GPs’ workload, and it is not surprising that some relevant cases were not recorded. However, the shortfall suggested by our study gives serious cause for concern about this method of collecting data and underlines the difficulty of meaningful comparisons using incidence or prevalence data collected by GPs.

It is tempting to assume that the recording of basic data will improve as more practices record all or the majority of their data on computer. However, initial reports are not encouraging, suggesting problems in data accuracy and incomplete recording. We await with interest the development of a more systematic approach for documenting consultation rates and describing management actions for specific conditions in primary care.

Acknowledgement

We thank Mrs Maria Platts for her help during the project.
References


6 Murray I. “Cut in red tape yields £10m for breast cancer”. The Times 1997; July 25.


