

# Anxiety in patients with symptomatic breast disease: effects of immediate *versus* delayed communication of results

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**Immediate reporting of fine needle aspiration biopsy (FNAB) specimens has been introduced into many breast clinics; in others, women return to a later clinic to receive the result. This delay in communication of results may lead to elevated anxiety.**

This study compared anxiety levels in two groups having FNAB. One group received results at the initial clinic visit ( $n=51$ ), the other having delayed communication ( $n=51$ ). Anxiety was measured using the six-item short form of the Spielberger State-Trait Anxiety Inventory (STAI-SSF) and was administered before and after each consultation.

Initial anxiety was high in both groups. Women with malignant results had higher post-communication anxiety compared with women with benign results. However, within the group with benign results (the vast majority), immediate communication was associated with a significantly greater fall in STAI-SSF scores from before to after the first consultation ( $U=587.0$ ;  $P<0.02$ ). There was no difference between the immediate and delayed communication among women with a malignant diagnosis ( $U=26.0$ ;  $P=0.91$ ).

These results provide preliminary support for the more widespread introduction of a cytologist into

**breast clinics to allow immediate communication of results.**

Most health districts now have surgeons with a special interest in breast disease. Many of these surgeons will run special breast clinics for patients with symptomatic breast disease and will often have immediate access to radiological and pathological services for rapid evaluation of breast lumps. The use of fine needle aspiration biopsy (FNAB) in the diagnosis of breast lumps is now well established (1). The practice in different centres varies from having immediate reporting of FNAB specimens to the patient returning to a future clinic for the FNAB result.

A recent study has demonstrated that the anxiety levels of women after the discovery of a breast lump and before knowledge of biopsy results are extremely high (2). However, despite a computerised literature search, we have been unable to identify any study that has directly compared psychological differences in patients undergoing investigation for breast lumps who have immediate *versus* delayed communication of biopsy results.

At the time of this study there were two consultant surgeons with a special interest in breast disease based at Glenfield General Hospital, Leicester. In symptomatic

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breast clinics both consultants had access to radiological services with immediate reporting of films. One surgeon also had access to immediate reporting of FNAB specimens. For the other surgeon, the patient returned to the clinic 1 week later for the result of the FNAB.

Although initially it may appear that immediate communication of results would have obvious advantages, it is often better to discuss the diagnosis and treatment of cancer in more than a single clinic visit. We hoped in this study to evaluate the advantages and disadvantages of immediate communication of biopsy results.

The aim of the study was to determine if there is a clear advantage for immediate *versus* delayed communication of biopsy test results in terms of anxiety. Furthermore, to determine whether or not there is an interaction between immediate *versus* delayed communication and biopsy test results (eg benign *versus* malignant) on anxiety.

## Patients and methods

New patients attending the symptomatic breast clinics were assessed clinically and radiologically. If appropriate a FNAB was then taken. In consultant A's clinic the FNAB was taken and immediately reported by a cytologist, and further management was then arranged during the same consultation. In consultant B's clinic the FNAB was taken and the patient returned for the result 1 week later and further management was arranged at the second consultation. Patients who had simple cyst aspiration were not included in the study.

In order to control for the individual approaches and counselling of patients, after 6 weeks, delayed reporting was introduced into consultant A's clinic and immediate reporting into consultant B's clinic. Local Ethical Committee approval for the study was obtained.

All new patients attending the symptomatic breast clinics were asked to complete questionnaires as described below. Patients were told that we were undertaking a study to assess the psychological needs of patients attending our breast clinics and were not aware if they were going to receive an immediate or delayed communication of biopsy results. Anxiety was assessed by the Spielberger State-Trait Anxiety Inventory, six-item short form (STAI-SSF) (3). The STAI-SSF is a six-item abridged version of the original (40-item) Spielberger State-Trait Anxiety Inventory (4). Although various instruments have been developed to assess anxiety, the STAI-SSF was chosen for three reasons. First, its 'parent' is the most well-validated and most widely employed measure of anxiety for research purposes. Second, it is explicitly designed to assess 'state' anxiety and, for this reason, is the instrument of choice to evaluate short-term changes in anxiety. Third, it is short enough to make re-administration after a brief period feasible. This questionnaire was administered to all patients, both before and after the initial consultation, by a research nurse (LC), who played no part in their management.

The Hospital Anxiety and Depression Scale (HADS) (5) was also completed by all patients before the initial consultation. The HADS is a 14-item two-factor instrument including a seven-item anxiety subscale which is the most commonly used measure of anxiety for clinical purposes. The possible 0–21 range of scores is divisible into three bands, namely 'normal' (0–7), 'borderline' (8–10) and 'case/clinical' (11–21).

## Questionnaire scoring and statistics

Scores on the STAI-SSF were calculated. The scale range is from 20 to 80, with higher scores indicating greater anxiety. Change scores were calculated by subtracting the score obtained from the first completion of the questionnaire from the second completion. A positive score indicates a rise in anxiety, whereas a negative score indicates a fall in anxiety levels. Direct comparison of the groups was made by the Mann-Whitney *U* test.

Comparison was made between those patients who received immediate communication of results with those who were to return for their results 1 week later. Other subgroups compared were those patients with a diagnosis of cancer *versus* those with benign disease.

## Results

Over the 12-week study period, 361 new patients attended the symptomatic breast clinics. Of these, 122 (34%) underwent FNAB and completed the questionnaires. Of these patients, 53 had immediate communication of results and 69 had delayed communication of biopsy results. FNAB results were inconclusive ( $n=18$ ) or lost to the study ( $n=2$ ) for a total of 20 patients, whose data were therefore excluded from further analysis, leaving 51 subjects in each of the two (immediate *versus* delayed communication of results) groups. A total of 17 patients received a definite diagnosis of cancer (ie 4.7% of all patients or 13.9% of patients having FNAB).

Compliance rates for completion of the STAI-SSF ranged from 94% to 100% in the four response groups (immediate *versus* delayed report *times* pre- *versus* post-consultation questionnaires; see Table I).

No difference was found between the two report groups in STAI-SSF scores, either before or after the initial consultation for patients with a malignant diagnosis. Similarly, there was no difference in state anxiety 'change' scores between the immediate and delayed report groups (Table I and Fig. 1).

For patients with a benign outcome, we found no significant difference in state anxiety levels, either before or after the initial consultation, between those who received immediate and those who received delayed communication of biopsy results. However, on analysing the 'change' scores, we found that those patients who receive immediate communication of biopsy results show a significantly greater reduction in state anxiety than do patients who receive delayed communication of biopsy results ( $P<0.02$ , Mann-Whitney *U* test).

Table I. Mean STAI-SSF anxiety scores and change scores with 95% confidence intervals (CI). Change scores were calculated by subtracting the preconsultation score from the post-consultation score. Statistical analysis was by the Mann-Whitney U test

	Communication of results		Preconsultation		Post-consultation		P	Change score mean (95% CI)	P
	n	mean (95% CI)	n	mean (95% CI)	n	mean (95% CI)			
Benign	Immediate	41	52.44 (24.66-80.22)	39	37.95 (12.75-63.15)	39	-14.79 (-46.65-17.07)	0.43	<0.02
	Delayed	44	47.35 (22.33-72.37)	43	40.47 (17.91-63.03)	43	-6.98 (-40.64-26.64)		
Malignant	Immediate	10	44.67 (14.65-74.69)	9	51.85 (8.63-95.07)	9	6.30 (-17.14-29.74)	0.91	0.91
	Delayed	6	44.44 (23.93-64.93)	7	53.81 (23.15-84.47)	6	7.78 (-30.32-45.88)		

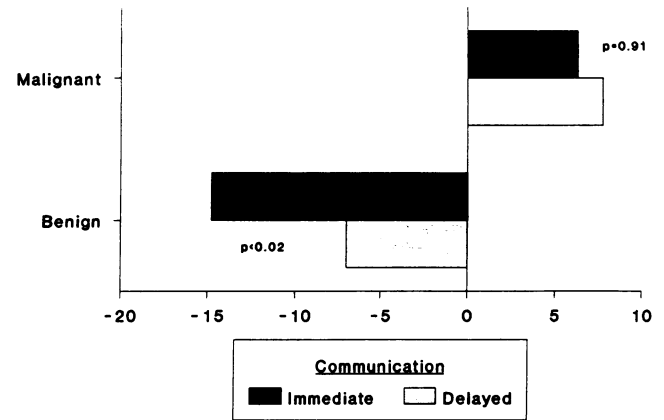


Figure 1. STAI-SSF anxiety change scores for patients with either a malignant or benign diagnosis. STAI-SSF anxiety change scores rose for all patients with a malignant diagnosis, irrespective of the timing of communication of results, indicating a rise in anxiety levels. There was no difference between the immediate communication and delayed communication conditions. For patients with a benign diagnosis, there was a significantly greater reduction in STAI-SSF anxiety scores in those patients having immediate communication of results compared with those receiving delayed communication, indicating a fall in anxiety levels.

Table II. Hospital anxiety and depression scale anxiety subscale scores at the initial clinic appointment (total FNAB patient sample)

HADS anxiety score bands			
Normal	Borderline	Case/clinical	Total
49 (40.1%)	29 (23.8%)	44 (36.1%)	122

HADS anxiety subscale scores, displayed in the form of frequencies within each score band, are shown in Table II for all patients who underwent FNAB testing. It can be seen that the majority of patients (59.9%) score outside the normal range, ie display significant anxiety.

### Discussion

Most women presenting with a breast lump will undergo triple assessment of their lump, namely clinical examination, radiological imaging and biopsy. Fine needle aspiration biopsy (FNAB) has now become the biopsy technique of choice in these patients (1). The advantages of FNAB are that it is less invasive than an open biopsy and that if a lump is found to be benign, surgical excision may not be necessary. Also, in patients with a malignant lump, a management strategy may be discussed and planned with the patient before any surgical procedure. Although the use of FNAB is well established, the reporting of FNAB varies considerably between different centres.

In this study we found differences in the anxiety scores of women who have immediate versus delayed commu-

nication of biopsy results. Anxiety levels (as assessed by STAI-SSF scores) in women with benign breast disease fell after the initial consultation, regardless of the timing of communication of biopsy results. However, the fall in anxiety scores was significantly greater in women who had been given their biopsy results immediately compared with women who were returning for biopsy results. Anxiety scores for patients with a malignant outcome tended to rise regardless of timing of communication of biopsy results. However, the small number of women with malignancies means that within-group comparisons are likely to be unreliable, introducing the risk of a Type 2 error, ie masking a real difference.

The trend towards higher preconsultation STAI-SSF scores in the benign group compared with those with malignancies is noteworthy. Three possible, and not mutually exclusive, hypotheses can be put forward to explain this observation. First, the sample size of our malignant group is very small ( $n=17$ ) making comparisons likely to be unreliable. Second, the benign group is likely to include a subgroup of women with high health anxiety or hypochondriasis. Third, there is some evidence that suppression of emotions such as anxiety is predictive of tumour development (6,7).

The vast majority of patients attending our symptomatic breast clinics had benign breast disease. Less than 5% of all attenders or less than 14% of those undergoing FNAB had a malignant outcome, but there were inconclusive results for 18 of our sample of women and a further two results were lost to the study. Although anxiety scores were reduced in all patients with a benign outcome, the reduction was rather greater in patients who had been given the results of their assessment at the first consultation. In contrast, anxiety scores were elevated in the minority with a malignant outcome.

As the vast majority of women attending symptomatic breast clinics have benign breast disease, we would suggest that immediate reporting of biopsy specimens be introduced into all symptomatic breast clinics. Unnecessarily elevated anxiety may well have adverse behavioural consequences through classical conditioning, ie establishing an association between clinic attendance/breast screening and unpleasant affect. Behavioural avoidance

is a common response to such anxiety (8,9). Failure to implement immediate communication of FNAB results may well jeopardise the detection of future malignancies in women with initial benign results (the vast majority).

For those with a malignant result, it should be the norm to see the patient on more than one occasion to discuss management, since the high levels of anxiety associated with the diagnosis of breast cancer mean that it will take time to discuss the communication of choices and details of the treatment. However, further research is needed to confirm our findings and to investigate other possible methods of reducing anxiety.

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