

# Nonpalpable, probably benign breast lesions in general practice: the role of follow-up mammography

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## SUMMARY

*A nonpalpable, probably benign lesion is frequently detected on mammograms. The aim of this paper was to determine the role of follow-up mammography as an alternative to surgical biopsy of these lesions, in patients from a general practice population. In a prospective study we estimated the compliance rate of general practitioners and patients with the recommendations for mammographic follow-up of nonpalpable, probably benign lesions. Reasons for noncompliance, the value of a reminder and the probability of malignancy were determined.*

**Keywords:** women's health; mammography; nonpalpable; follow-up.

## Introduction

MAMMOGRAMS show a nonpalpable, probably benign lesion in 3% to 11% of cases.<sup>1-4</sup> The probability of malignancy of these lesions is 0.5% to 2%, and periodic mammographic follow-up seems to be a reasonable alternative to surgical biopsy.<sup>1-3,5-8</sup> Unfortunately, physician and patient compliance is a problem, as many patients do not receive the follow-up that has been recommended.<sup>2,7</sup> There are no known studies published that provide the reasons for this low compliance.

In a prospective study, we determined the compliance rate of general practitioners (GPs) and their patients with recommendations for a periodic mammographic follow-up of nonpalpable, probably benign lesions. Barriers for not attending follow-up mammography were specified and we determined whether a reminder, generated by a radiology department, improved the follow-up performance.

## Method

The study included all women aged 30 years or older referred by GPs for breast imaging to our department of radiology between 1 January 1992 and 1 October 1994. The radiological examination was performed as previously described.<sup>9</sup> All patients underwent a physical breast examination after review of the clinical information and the mammograms to ensure a true clinically occult situation. For the definition of a nonpalpable, probably benign lesion we used the mammographic criteria as described by Sickles.<sup>3</sup>

In the case of a nonpalpable, probably benign lesion, the radiologist recommended follow-up mammography of the ipsilateral breast after six months. A questionnaire was sent to a patient's GP if mammography was not repeated within one month after this time span. In the questionnaire we asked the reasons for non-re-attendance and advised prompt mammographic follow-up. To complete the follow-up data, one of the authors (LD) made telephone calls to those GPs (and, in case of insufficient information, to their patients) who had not responded within one month. Reasons for non-re-attendance were considered to be either GP-related (e.g. insufficient retrieval system) or patient-related (e.g. inconvenience of undergoing mammography).

A lesion was considered to be benign if follow-up showed a decline of the mammographic abnormality and further surveillance was not indicated in these cases. Mammographic follow-up of unchanged lesions consisted of two bilateral annual mammograms. A questionnaire and a reminder were sent to a GP once more, one month after the due date of follow-up mammography in cases where patients did not attend one of the annual follow-up examinations. We recommended a prompt tissue diagnosis if any interval change occurred in a probably benign mammographic finding raising suspicion of malignancy.

## Results

During the study period, 200 GPs referred 2528 women for mammography. A nonpalpable, probably benign lesion was found in 167 patients. Follow-up data were incomplete in four cases. The remaining 163 women were referred by 73 GPs. Without reminder assistance, the recommended follow-up was achieved in 48 out of these 163 women (29.4%). In all, 161 reminders were sent to the GPs of the remaining 115 women, and this provided a complete radiological follow-up in another 62 patients. Mammographic surveillance remained incomplete in 53 women.

The main reason for not complying was more often GP-related rather than patient-related in all three follow-up rounds (Table 1: 78.4% vs 21.6%; 76.9% vs 23.1%, and 68.8% vs 31.2%). The most common GP-related barrier was lack of an adequate retrieval system. Important patient-related barriers were the absence of breast symptoms and inconvenience of undergoing a mammogram. Within one month after having received the reminder, GPs ordered mammography for the first, second, or third follow-up round in 74.3% (55/74), 69.2% (27/39), and 54.2% (26/48) of women respectively. Calculated for the total of 161 reminders, re-attendance following a reminder was obtained more often if non-compliance was GP-related instead of patient-related (78.5% vs 32.5%; 95% confidence interval of the difference = 28.1–63.9).

Three probably benign lesions proved to be malignant. The final diagnosis in these cases was established within six to eight months after the initial mammogram, and concerned two intraductal carcinomas and one invasive ductal carcinoma with metastasis in two axillary lymph nodes.

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**Table 1.** Nonpalpable, probably benign lesions: barriers to mammographic surveillance and re-attendance following a reminder.

	First follow-up examination		Second follow-up examination		Third follow-up examination	
	Initial non-re-attendance <sup>a</sup>	Re-attendance after reminder <sup>b</sup>	Initial non-re-attendance	Re-attendance after reminder	Initial non-re-attendance	Re-attendance after reminder
GP-related barriers						
Insufficient retrieval system	53	47	26	23	30	23
Mammographic findings are considered not to be alarming enough to warrant follow-up	3	1	1	0	1	0
Periodic physical breast examination as an alternative to mammographic follow-up	2	0	3	1	2	0
Total	58	48	30	24	33	23
Patient-related barriers						
No breast complaints	7	4	4	2	9	2
Inconvenience of undergoing mammography e.g. pain, embarrassment	6	2	4	1	4	1
Fear of radiation	1	1	0	0	1	0
Fear of cancer detection	2	0	1	0	1	0
Total	16	7	9	3	15	3

<sup>a</sup>A questionnaire/reminder was sent to the GPs of these patients. <sup>b</sup>Re-attendance within one month of the questionnaire/reminder.

## Discussion

Only 29.4% of the women underwent all recommended follow-up examinations without reminder assistance. Helvie *et al*<sup>2</sup> found that, after a two-year follow-up period, less than one-third of the women had attended all recommended examinations, and De Neef and Gandra<sup>7</sup> calculated a 26% re-attendance rate within six months. Sickles<sup>3</sup> reported that 45% of the women underwent all recommended examinations spanning a 3–3.5 year period. However, in that study, exceeding the time limit for follow-up by six months was still considered to be in accordance with the recommendations.

Lack of adequate retrieval systems in general practices was by far the most important reason for non-re-attendance. The perception that follow-up mammography is unnecessary in the absence of symptoms was a major patient-related barrier. This is also one of the main reasons for non-compliance in breast cancer screening programmes.<sup>10,11</sup>

Reminders may increase the physicians' compliance with screening recommendations.<sup>12–14</sup> Our reminder system also seemed to provide a more complete follow-up. The precise value of the reminders cannot be determined, as we did not use a control group. Some women might have been referred for a delayed follow-up without a reminder.

The probability of malignancy was 1.8% (3 out of 163), and this corresponds to the 1.7% of Varas *et al*.<sup>1</sup> Helvie *et al*<sup>2</sup> and Sickles<sup>3</sup> found a probability of malignancy of 1.1% and 0.5% respectively. However, Helvie did not employ breast ultrasound as an adjunct to mammography, and Sickles introduced ultrasound several years after having started his study. Therefore, their series of probably benign lesions will contain clearly benign lesions such as cysts.

Periodic mammographic follow-up of nonpalpable, probably benign lesions in general practice seems to be a reasonable alternative to surgical biopsy. However, even with reminder assistance from a department of radiology, GP and patient compliance remains a problem. Introduction of a computerized reminder sys-

tem in general practices, which may be used for other preventive and monitoring purposes as well, could be another possibility to secure a more complete follow-up.

### Key points

- A nonpalpable, probably benign lesion is frequently detected on screening mammograms and diagnostic (consultative) mammograms
- Mammographic follow-up of nonpalpable, probably benign lesions in general practice is a reasonable alternative to surgical biopsy, although GP and patient compliance is a significant problem
- Lack of an adequate retrieval system in general practices was the most frequently cited reason for an incomplete mammographic follow-up
- Even after introduction of a reminder system by a department of radiology, complete mammographic follow-up was not obtained in one-third of the patients
- Introduction of a computerized reminder system in general practices may be another possibility to secure a more complete follow-up.

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