

Screening Mammography in Dealing With **Abnormal** Mammographic Findings

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Objective:The aim was to assess if screening mammogram affects the surgeon's strategy in dealing with abnormal mammographic findings in breast neoplasia. **Method:**Of 416 patients referred to a single surgeon over 8 years period ,88 were referred for abnormal mammographic findings.The mammoaograms were obtained in 6 radiology offices. The patients range in age 25-82 years,with a mean age of 49 years. **Results:**Of the 88 patients referred for abnormal mammographic finding , 12(13%) were found to have distinct masses on physical examination corresponding to the mammographic abnormality. **Conclusion:** Screening mammography is e valuable tool in the detecting of breast cancer at an early stage. Mammographic follow-up is an alternative to biopsy, however many surgeons are reluctant to follow such a recommendation.



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Patients and Methods

Of 416 patients referred to a single surgeon over a 6 years period, 88 were referred solely for an abnormal mammographic finding. The mammograms were obtained in a total of 6 radiology offices, reflecting the wide geographic area served by our particular medical center. At least twice as many radiologists were involved in reading the films. Rather than biopsy all patients initially, the patient and the mammogram were reevaluated. The patients ranged in age from 25 to 82 years, with a mean age of 49 years. Forty-three women were premenopausal and 45 were postmenopausal. Fourteen had a family history of breast cancer, 9 were taking exogenous estrogens, and 6 had a history of previous breast cancer. Ten patients had prior breast biopsies. A careful history was obtained and physical examination performed. The mammograms were

then reviewed with a -single consulting radiologist using the following strict criteria: greater than 5 microcalcifications within 1 cm, microcalcifications in an irradiated breast regardless of number, circumscribed and dense masses with indistinct margins, masses that increased in size, masses that returned after cyst aspiration, and architectural distortion compared with the contralateral breast. After this evaluation, patients were placed in the following groups: Group 1, immediate localization and biopsy based on suspicious mammographic findings; Group 2, biopsy based on an obvious mass; Group 3, repeat mammographic evaluation in 4 to 6 months; and Group 4, routine follow-up according to American Cancer Society guidelines because the mammographic finding was considered normal when reviewed.

Results

Of the 88 patients referred solely for an abnormal mammographic finding, 12 (13 percent) were found to have distinct masses on physical examination corresponding to the mammographic abnormality.

All 12 patients underwent biopsy with the discovery of two invasive ductal adenocarcinomas, one of which had metastasized to the axillary lymph nodes. After review of the mammograms, 32 patients (37 percent) underwent biopsy for mammographic findings thought to represent a risk for malignancy. Six of the patients (18 percent) were found to have cancers, none of which had metastasized to the axillary nodes as determined by mastectomy and axillary dissection. The pathologic findings in the patients with malignancy are listed in Table I. Thirty-four patients were advised to return to the clinic in 4 to 6 months for reevaluation, as the mammograms being reviewed were believed to have a low probability of representing a malignancy. All of these patients returned and had repeat mammograms. Two patients were thought to have either persistent or new changes warranting biopsy. Biopsy was benign in both cases. Ten patients were assigned to routine follow-up as their mammograms were thought to reveal nothing abnormal on review. During the follow-up period of from 3 to 48 months, no nonbiopsied patient had development of a malignancy nor did yearly mammographic follow-up meet the criteria for biopsy. The evaluation of these 88 patients is summarized in Figure 1. All patients with malignancy diagnosed by biopsy had clusters of microcalcification in the biopsy specimen. The presence of a discrete mass correlated less frequently, as did dysplasia, asymmetry, and architectural changes. By reevaluating each patient and the mammogram using specific criteria, 42 patients (48 percent) were spared biopsy, and on follow-up, neither mammographic nor physical evidence of malignancy was found.

	N	Involved Nodes
Palpable lesions		
Invasive ductal adenocarcinoma	2	1
Nonpalpable lesions		
Noninvasive tubular carcinoma	1	0
Noninvasive ductal adenocarcinoma	1	0
Invasive ductal adenocarcinoma	1	0
Noninvasive lobular carcinoma	1	0

Table 1 - Histologic Diagnosis of Malignant Lesions Present on Mammography

Comments

Unquestionably, screening mammography plays an important role in preventing death from breast cancer. Tabar et al [2], in Sweden, reported a 25 percent reduction in stage II or higher advanced lesions in a group of women screened by mammography when compared with a

In the event that the mammographic finding is not worrisome enough to warrant biopsy but is still abnormal, a 4 to 6 month waiting period followed by a repeat mammogram is unlikely to compromise the patient's chance of survival in the event a cancer is discovered.

control group of women not screened. They found an overall decrease in the mortality rate from breast cancer of 31 percent in the women screened compared with those who did not have

mammography. According to a recent review by Tinnemans and Wobbles [3], the incidence of malignancy in nonpalpable breast masses detected by mammography alone has ranged in different series from 15.4 to 46.7 percent. The majority of the cancers discovered in the present series were noninvasive. The American Cancer Society National Cancer Institute Breast Cancer Detection Demonstration Project found 6,000 cancers in 280,000 women. In the patients whose lesions were detected by mammogram alone, 75 percent had uninvolved axillary nodes at operation. Based on calculations from the Demonstration Project data, it has been estimated that a mammogram will detect a cancer 2 years before it becomes palpable. With 115,000 cases of breast cancer discovered each year in the United States, thousands of lives can be potentially saved by earlier detection.

There are concerns over screening mammography. Mann et al have reported a 57.9 percent incidence of involved axillary nodes in 19 women whose biopsy of a palpable breast mass was delayed on the basis of a normal mammographic finding.

Based on our experience, we make the following recommendations: (1) Repeat the history and physical examination. In 13 percent of our patients, there was a palpable mass in the area of the mammographic abnormality that did not require mammographic localization. (2) Become knowledgeable in terms of mammographic abnormalities and what they represent. Being able to ask intelligent questions of the radiologist

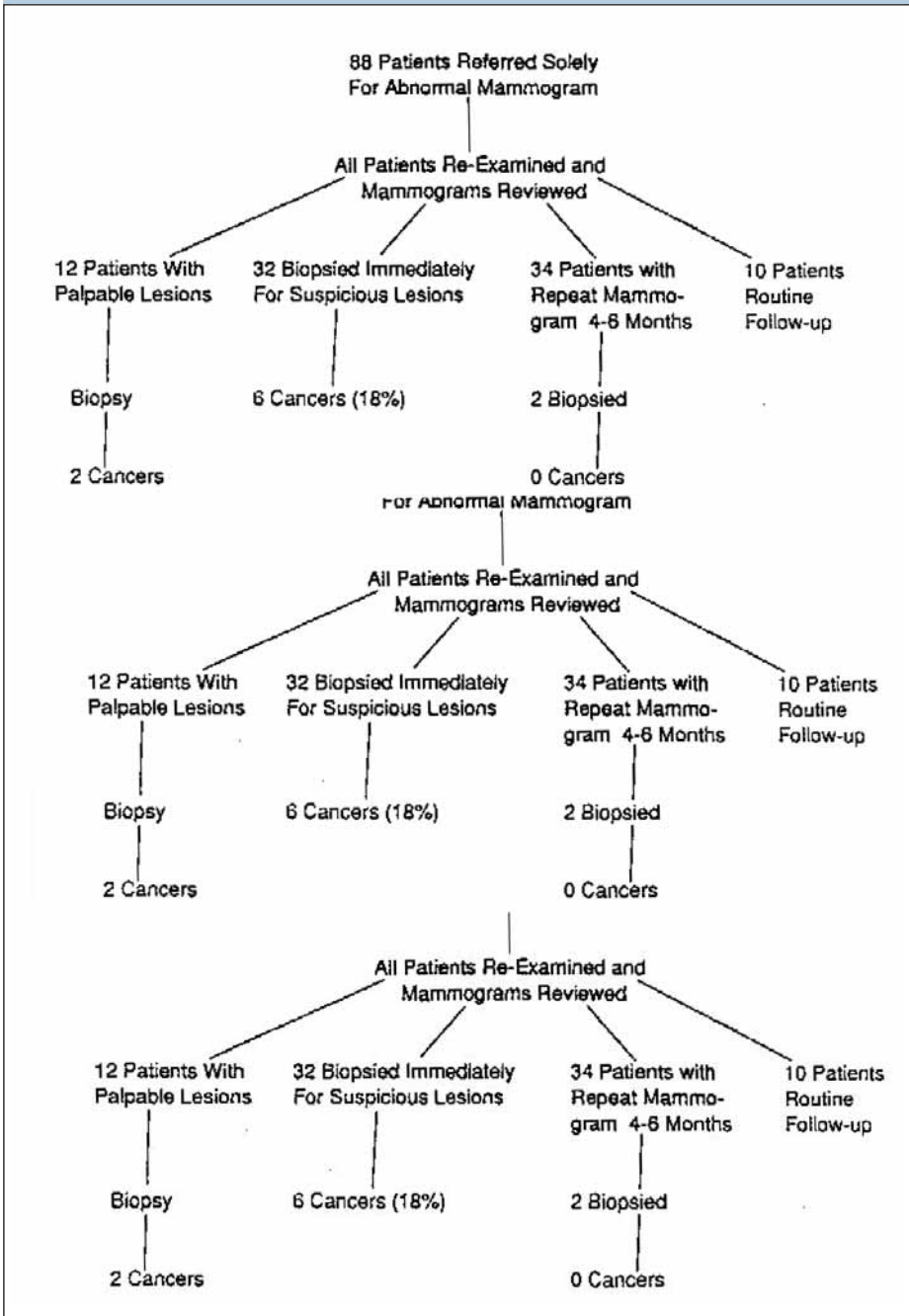


Figure 1 - Evaluation of BS patients during a follow-up of 3 to 48 months.

strengthens your ability to make a decision. (3) Establish a good working relationship with one radiologist who you trust, especially a person who is not overly concerned with covering himself. Have all studies referred to you reviewed by your consultant for a second opinion. By comparing a single consistent interpretation with your operative findings, you can get a feel for the accuracy of the mammographic findings, (4) Establish with your radiologic consultant a set of

specific criteria for what constitutes a suspicious mammographic finding. This eliminates the vague “cannot exclude” statements. Much more desirable language is “this lesion represents a 1 in 20 probability of being malignant.” Determining probabilities is very helpful for the surgeon in decision making and provides valuable information for the patient in terms of dealing with the anxieties of the situation. (5) In the event that the mammographic finding is not worrisome enough to warrant

biopsy but is still abnormal, a 4 to 6 month waiting period followed by a repeat mammogram is unlikely to compromise the patient’s chance of survival in the event a cancer is discovered. Mammography will, in many cases, allow surgeons the satisfaction of curing their patients of a vicious disease. However, it will also lead to many perplexing decisions. A consistent, systematic approach to the interpretation of mammograms and their effective use in clinical decision making will benefit both the patient and the physician.

Summary

Screening mammography is a valuable tool in the detection of breast cancer at an early stage. Large numbers of patients are being referred to surgeons for biopsies on the basis of mammographic abnormalities alone. As mammograms are complex studies and the findings often subtle, variation in terms of inter-

By becoming educated in regard to mammographic abnormalities, establishing specific criteria with a consistent radiologist, and following patients carefully who are not biopsied, the surgeon can deal effectively with screening mammography.

pretation and recommendations for biopsy can leave the surgeon in a difficult position. We have reported a systematic method for evaluating patients and mammograms. Eighty-eight patients were referred to a single surgeon solely for an abnormal mammo-

graphic finding. Physical examination was repeated and the mammogram reviewed with a single consulting radiologist using specific criteria to define a mammographic abnormality. Through this evaluation, biopsy was avoided in 42 of 88 patients, with follow-up mammograms and physical examinations finding no suspicion of malignancy. By becoming educated in regard to mammographic abnormalities, establishing specific criteria with a consistent radiologist, and following patients carefully who are not biopsied, the surgeon can deal effectively with screening mammography. There are two effective ways of reducing the death rate of cancer of the breast, One is by screening asymptomatic women and the other way is by aggressive diagnosis of symptomatic women who have a lump. The breast cancer mortality rate has not changed in 50 years; however, mammography can bring about a significant improvement

with detection at an early date. Malignancy cannot be excluded in an x-ray report catches the attention of both the physician and the patient. In half of these cases, the chance of malignancy is estimated to be less than 1 in 20. Mammographic follow-up is an alternative to biopsy; however, many surgeons are reluctant to follow such a recommendation.

REFERENCES

- Hall FM. Screening mammography. Potential problems on the horizon. *N Engl J Med* 1986; 312:Tabar L, Fagerberg CJG, Gad A. et al. Reduction in mortality from breast cancer after mass screening with mammography: randomized trial from the breast cancer screening working group of the Swedish National Board of Health and Welfare. *Lancet*. 1991; 1: 829-32.
- Tinnemans JGM, Wobbes T. The significance of microcalcifications without palpable mass in the diagnosis of breast cancer. *Surgery* 1986; 99: 652-7.
- Rissanen T, Pamilo M, Suramo I: Ultrasonography as a guidance method in evaluation of mammographically detected nonpalpable breast lesions of suspected malignancy. *Acta Radiol* 1990, 39:292.
- Jatoi I: The case against mammographic screening for women in their forties. In Jatoi I (ed): *Breast Cancer Screening* Austin, TX, Landes Bioscience, 1997, pp 35-49.
- Ballo MS, Sneige N.: Can Core needle biopsy replace fine - needle aspiration cytology in the diagnosis of palpable breast carcinoma. A comparative study of women. *Cancer* 1996 ;78(4):773-777
- Seymour I, Schwartz, G, Tom Shires, Frank C, Spencer.: *Breast. Principles of surgery* 5th edition, 1989, pp 563 .
- Fischer B, Anderson S, Redmond CK: Reanalysis and results after 12 years of follow-up in a randomized clinical trial comparing total mastectomy with lumpectomy with or without irradiation in the treatment of breast cancer. *N Engl J Med* 1995, 333:1456-1461.
- Goodson W, Mailman R, MILLER T. Three year follow up of benign fine-needle aspiration of the breast. *Am J Surg* 1990.
- Lagios MD, Margolin FR, et al: Mammographically detected duct carcinoma in situ; frequency of local recurrence following tylectomy and prognostic effect of nuclear grade on local recurrence. *Cancer* 63:618, 1989
- Cooke TG: Ductal carcinoma in situ ; a new clinical problem. *Br J Surg* 1989, 76:660.
- Robert A. et al. American Cancer Society Guidelines for Breast Cancer Screening: Update 2003. *CA Cancer J Clin* 2003; 53:141-169.
- Feuerman L, Attie JN, Rosenberg B. Carcinoma in axillary nodes as an indicator of breast cancer. *Surg Gynecol Obstet* 1992; 114:5-8
- Kopans DB. Specific, nonspecific and supporting signs of malignancy. In: Kopans DB, ed. *Breast imaging*. Philadelphia: Lippincott, 1998:115-133
- Patel J, Nemoto T, Rosner D, Dao TL, Pickren JW. Axillary lymph node metastases from an occult breast cancer. *Cancer* 1981; 47:2923-2927
- Piercr EH, Gray HK, Dockerty MB. Surgical significance of isolated axillary adenopathy. *Ann Surg* 1975 ;145:104-107
- Vilcoq JR, Calle R, Ferme F, Veith F. Conservative treatment of axillary adenopathy due to probable sub clinical breast carcinoma. *Arch Surg* 1982; 117:1136-1138
- Rosen PP, Kimmel M. Occult breast carcinoma presenting with axillary node metastases: a follow-up study of 48 patients. *Hum Pathol* 1990; 21:518-523.
- Morrow M. Recent developments breast cancer. *BMJ* 2002; 324:410-414.
- Etta D. et al. Fine-Needle Aspiration Biopsy of Nonpalpable Breast Lesions in a Multicenter Clinical Trial: Results from the Radiologic Diagnostic Oncology Group V1. *Radiology*. 2001; 219:785-792