Breast Cancer—Answers to Some Common Questions

The presentations by participants in the Second National Conference on Breast Cancer held in Los Angeles on May 17, 18, and 19, 1971 included a question and answer period. Because time did not allow all questions to be answered during the conference, the unanswered questions were forwarded to the participants. Their answers are published below.*

Question addressed to
Eugene U. Thiessen, M.D.,
Preventive Medicine Institute—Strang Clinic, New York, New York: Does a history of breast cancer in paternal aunts, cousins or grandmother increase the risk for a patient?

Dr. Thiessen
To date there has been no evidence presented that the occurrence of breast cancer in any individual’s paternal blood relatives increases that individual’s own risk for future development of the disease.

The endogenous hormone milieu, to which the individual’s breast tissue is exposed over the years, undoubtedly plays some, as yet undetermined, part in the pathogenesis of mammary cancer. The genetic factors responsible for the character of this hormone milieu might be the same, but have a unique form of expression, in male and female of either/both paternal and maternal blood relatives. With these thoughts in mind it is interesting to speculate upon the “risk” related significance of a prostatic cancer history among paternal or maternal blood relatives.

There are thought provoking similarities between breast and prostatic cancer. Both occur in end-organs of hormone stimulation. The individual’s risk for the development of either is both sex determined and age related (i.e., increasing risk with increasing age). Both have similar geographic distribution. Both are sometimes responsive to hormone manipulation.

For these reasons one might also ask if any individual’s “risk” for the future development of breast cancer is influenced by a history of prostatic cancer among either maternal or paternal blood relatives. Data is currently being gathered from our patients on this question.

Question addressed to
Louis Venet, M.D.,
Jewish Memorial Hospital, New York, New York: Doesn’t the fact that additional cases are detected after 6 to 12 months postscreening indicate the need for semiannual rather than yearly screenings?

Dr. Venet
Certainly, decreasing the interval between screenings, as with semiannual

* This is the second part of a series of questions and answers. The third part will appear in the May/June issue of Ca—A Cancer Journal for Clinicians.
examinations, should theoretically result in the detection of some cancers now diagnosed in the interval between annual screenings. Whether the yield would be worthwhile in practical terms of costs, availability of technical help, etc., remains to be determined.

Our study was designed to determine the results of annual screenings and it has required six years of intensive effort to obtain even the preliminary encouraging results. On the basis of this, others, such as the Guttman Institute, have mobilized screening programs at semiannual intervals and have added other modalities such as thermography to the examination.

We await reports of the results of such programs, but, as yet, the only firm data from which conclusions may be drawn are those obtained from annual screenings.

Questions addressed to
Philip Strax, M.D.,
LaGuardia Hospital, Forest Hills,
New York:
How do the lesions picked up by thermography differ from those detected by mammography?

Dr. Strax
Thermography picks up increased infrared emanation transmitted from those cancers associated with such increased emanation or from benign lesions producing increased heat. Mammography detects cancers by abnormal densities on an X-ray film.

Isn’t it true that a substantial percentage of the Guttman examinees are preselected by M.D.’s or by the women themselves?

Dr. Strax
Symptomatic women referred directly by an M.D. are not considered screenees. Of the others, only an occasional woman will admit that she has recently been seen by a physician. We try to consider these as referred patients and not as screenees. There is, however, a fair amount of preselection by the women themselves. About 20 percent give a history of a lump or discharge at time of examination.

In your screening examination, why was mammography omitted when women were less than 35 years old?

Dr. Strax
For three reasons:

1. Cancer is much less common in women under 35.

2. The mammogram in women under 35 is usually of the very dense type where masses are difficult to discern.

3. Both physicians and laymen are reluctant to use ionizing radiation for screening purposes in women of child-bearing age.

None of these reasons is considered valid if the under 35 woman is symptomatic or has positive findings on clinical examination.

Question addressed to
John N. Wolfe, M.D.,
Hutzel Hospital, Detroit,
Michigan:
What is the accuracy of xeroradiography in the diagnosis of breast disease?

Dr. Wolfe
A study comparing xeroradiographs of the breast and conventional film mammograms was carried out with the following results:

|                     | Xeroradiography (%) | Film (%) |
|---------------------|---------------------|----------|
| Correct             | 345 (79.9)          | 318 (73.6) |
| Incorrect           | 87 (20.1)           | 114 (26.4) |
| Total               | 432 (100.0)         | 432 (100.0) |

The superiority of xeroradiography under these test conditions is attributed to a higher true positive rate (84.3 percent xeroradiography vs. 72.2...
percent film). The true negative rates were very similar for the two modes (75.5 percent xeroradiography vs. 75.0 percent film).

Do you feel that xeroradiography is developed sufficiently at the present time for general use by radiologists?

Dr. Wolfe
Yes. The automated equipment currently available has been successful in field trials and should be very adequate for general use.

Questions addressed to

Francis E. Rosato, M.D.,
University of Pennsylvania,
School of Medicine, Philadelphia, Pennsylvania:
You stated that women with a particular serum fucose and serum protein level had a certain probability of breast cancer. Did you have a representative sample of women in terms of the relative frequency of these **elevated** factors?

Dr. Rosato
We have found that women whose serum fucose is in excess of 25 mg. percent and whose total serum protein is less than 8.0 gms. percent have an increased incidence of breast cancer and that the predictability of these two values is more remarkable with increasing age. For example, at our hospital, a breast mass in a woman over age 60 would have approximately a 55 to 60 percent chance of being malignant. However, 100 percent of the cases in which fucose and total protein were as described above were malignant.

Are these **elevated** factors found in a normal population?

Dr. Rosato
We have looked specifically at the serum fucose and have found an elevated fucose level in approximately 15 percent of women with breast masses which subsequently proved benign. Therefore any parameter which includes serum fucose will have, in our experience, a 15 percent **false positive** (that is falsely indicative of cancer when cancer is in fact not present) which indicates that this test cannot presently be used as a screening test.

Is serum fucose helpful in the detection of early or minimal breast cancers?

Dr. Rosato
Fucose is helpful in the detection of early breast cancer when one defines early as a cancer confined to the breast without any evidence of axillary nodal involvement. Our experience with approximately 100 patients who had an elevated serum fucose level and subsequently underwent mastectomy shows that about one half of these patients had Stage I carcinoma pathologically, that is, confined to the breast. We are currently conducting studies to see whether fucose levels drop after mastectomy and whether or not it might be a useful indicator of completeness of excision and subsequent prognosis.

Question addressed to

Willis P. Maier, M.D.,
Temple University, School of Medicine Philadelphia, Pennsylvania:
How many times would you aspirate a persistently refilling cyst before biopsy and/or excision? Do you do any routine study of fluid aspirated from breast cysts?

Dr. Maier
When a cyst recurs after complete disappearance following needle aspiration,
one should think of the possibility of a neoplastic cyst and proceed with excisional biopsy. Some non-neoplastic cysts when incompletely emptied of fluid may return during the two weeks before follow-up examination. This happens in less than five percent of cases and these cysts are much smaller than they were originally. On occasion repeat aspiration has been carried out with no further evidence of reaccumulation of fluid at subsequent follow-up.

We have not been performing any routine studies on aspirated fluid from breast cysts. The expense of routine cytologic examination of the cystic fluid is not justified since recurring cysts are biopsied.

Question addressed to
Robert V. P. Hutter, M.D.,
New Jersey College of Medicine and Dentistry,
Newark, New Jersey:
Please discuss frozen section diagnosis and its reliability in minimal breast cancer.

Dr. Hutter
This important question must be divided into several component parts. Our first consideration is gross examination. Some minimal cancers, particularly the lobular in situ carcinomas, have no visible gross lesion. Therefore, examination of the gross specimen provides no clue to the presence of cancer, and the area selected for microscopic examination is ordinarily considered grossly benign. We have found that because of this, two thirds of lobular in situ cancers are not detected at the time of frozen section examination simply because the microscopically involved area had not been selected. Greater sampling of the specimen for paraffin section examination subsequently yields the minimal cancer which had not been suspected at the time of frozen section examination.

The cryostat method of frozen section preparation produces a high quality technical preparation. Therefore, if an area of minimal cancer is present in the gross tissue selected for microscopic examination, the histologic interpretation is no more difficult than it is with the paraffin sections. We must consider how urgent it really is to make the diagnosis of noninfiltrating cancer at the time of surgical biopsy, rather than a day or so later. The pathologist who does not have frequent exposure to these lesions may prefer to have additional time for paraffin section confirmation or even consultation. There is no added risk to the patient because of this short delay.

Finally, the surgical procedure to be done should be considered. When the diagnosis of in situ cancer is made on frozen section examination, an elective biopsy of the other breast should be done. If the frozen section diagnosis on the second breast is benign, there may be some value in waiting for paraffin section confirmation on the second breast before doing definite surgery on either breast since simultaneous bilateral modified radical mastectomy can produce a better cosmetic result than a staged procedure.

Questions addressed to
Ruth E. Snyder, M.D.,
Cornell University, School of Medicine, New York, New York:
What percent of biopsies done for group or cluster calcification seen on mammograms are malignant excluding those extensive bizarre calcifications which are typically malignant?
Dr. Snyder
In reviewing our biopsy material over a period of nine months, we have collected 31 cases referred for biopsy principally because of questionable clusters or groups of calcifications on mammograms. Five of these showed intraductal or in situ lobular carcinoma. Three additional cases showed atypical papillomatosis, and the rest were reported as papillomatosis, sclerosing adenosis, duct hyperplasia, cysts, duct stasis or fibroadenoma.

Clusters or localized collections of calcifications which are not typically carcinoma in appearance may be adjacent to carcinoma but not in carcinomatous ducts or lobules. It is important that they be identified by specimen X-ray if the biopsy is reported negative.

**Following radical mastectomy how frequently and for how long should mammograms be obtained of the remaining breast?**

Dr. Snyder
There is no established rule for the frequency of mammography when one breast has been removed for carcinoma. Once a year is generally accepted as good practice in high risk patients, but mammography should never replace the clinical examination.

Questions addressed to

Jerome A. Urban, M. D.,
Memorial Hospital for Cancer and Allied Diseases, New York, New York:

*Do you agree that involvement of nodes medial to the pectoralis minor (level III) signifies incurability?*

Dr. Urban
Positive axillary nodes medial to the pectoralis minor muscle do not denote incurability although they do indicate a relatively poor prognosis. There is an excessive tendency to consider some locally advanced primary breast can-
cers inoperable. The "triple biopsy" method of determining operability (biopsy of tumor, apical axillary and internal mammary nodes) has been abandoned by its originator after it became apparent that long term results of radical surgery plus X-ray therapy were superior to those of X-ray therapy alone when positive nodes were found in these areas. Our own experience with patients who had involved apical axillary nodes (level III) who were treated by radical surgery and supplementary cobalt-60 therapy yielded the following gross uncorrected survival rates:

**Five-year Survival (85 patients)**

|                         | Alive | Clinically Free of Disease |
|-------------------------|-------|---------------------------|
| Radical Mastectomy      | 39%   | 14%                       |
| (49 patients)           |       |                           |
| Extended Radical Mastectomy | 47% | 33%                       |
| (36 patients)           |       |                           |

**Ten-year Survival (50 patients)**

|                         | Alive | Clinically Free of Disease |
|-------------------------|-------|---------------------------|
| Radical Mastectomy      | 21%   | 14%                       |
| (28 patients)           |       |                           |
| Extended Radical Mastectomy | 27% | 23%                       |
| (22 patients)           |       |                           |

Two thirds of the patients with positive apical axillary nodes treated by the extended procedure had positive internal mammary nodes.

When only micro metastases (2mm. or less in diameter) are present in the apical axillary nodes, their influence on prognosis is minimal. The five-year
survival rate following radical mastectomy and X-ray therapy is the same as that for patients with macro metastases in the nodes lateral to the pectoralis minor muscles (level I).

In patients with breast cancer, would you do contralateral biopsy if mammograms of this contralateral breast are completely normal?

Dr. Urban

Yes, we would do a contralateral biopsy at the time of surgery for a known breast cancer on the dominant side. A negative mammogram does not rule out the presence of breast cancer. When suspicious X-ray mammograms or minimal physical findings are present in the second breast, the areas under question are biopsied widely with X-ray coverage in the suspicious mammogram cases. This group yields the highest percentage of positive biopsies: 20 percent occult cancer being found, roughly one third infiltrating, two thirds noninfiltrating. However, when X-ray mammograms and physical examination are completely negative, a generous biopsy of the mirror image of the known primary plus excision of the upper outer quadrant of the breast is performed removing approximately 25 percent to 30 percent of the breast parenchyma. Ten percent of these biopsies disclosed occult carcinoma, one fifth infiltrating and four fifths noninfiltrating.

Twenty-five of our own patients with simultaneous bilateral breast cancer had preoperative X-ray mammograms. In six cases, the X-ray findings were positive or suspicious on both sides; in nine cases, one side was positive and in 10 cases, both sides were considered negative by X-ray mammography. It is extremely difficult to detect the really early minimal infiltrating breast cancer either by X-ray or physical examination, and even more difficult to detect these lesions during their preinvasive in situ stage.

Questions addressed to

Arthur I. Holleb, M.D.,
American Cancer Society,
New York, New York:
Should patients undergoing breast biopsy have preoperative mammograms?

Dr. Holleb

Preoperative mammograms are advisable especially if the patient is 40 years of age or older and the services of a radiologist experienced in mammography are available. Not only may the mammograms help define the nature of the palpable lesion, but they may also discover significant lesions in the same or opposite breast which the examiner is unaware of. However, a negative mammogram does not rule out the presence of cancer.

What is the proper management of the patient with serous or bloody discharge from the nipple?

Dr. Holleb

Most cases of serous or bloody nipple discharge are due to benign intraductal papilloma or ductal papillomatosis. Since noninfiltrating and infiltrating papillary carcinomas can also produce serous or bloody discharge, excision of the terminal duct system through a circum-areolar incision and thorough microscopic examination is recommended.

Bloody nipple discharge, without a proven diagnosis of cancer, is not an indication for mastectomy nor should a prophylactic mastectomy be done for intraductal papilloma with some atypism.

True nipple discharge, either serous or bloody, is a more serious indication of cancer in men than it is in women. The records of 198 cases of male breast cancer from Memorial Hospital (New York) showed that 15 percent of the cases of nipple discharge in men were associated with carcinoma.