

Feedback

Thermography. Breast Cancer Law.

Thermography

To the Editor:

In his article "Screening for Breast Cancer: How Effective Are Our Tests? A Critical Review" (*Ca* 33:26-39, 1983), Dr. Moskowitz has drawn attention to our work, and I cannot let this pass without comment.

We have specifically stated in our paper¹ that thermography is unsatisfactory as a screening procedure for breast cancer without clinical examination and mammography. However, it is not a modality to be discarded lightly and is useful in our milieu as a simple, noninvasive, complementary technique.

Our study was an analysis of patients who had thermography as a follow-up procedure at the Princess Margaret Hospital; it did not include all patients. Dr. Moskowitz is therefore comparing a high-risk group, which does not represent the entire population attending this major cancer treatment center, with a screening study for a population at large. It is obvious that there is no reasonable comparison.

His comments on lobular carcinoma in situ or noninfiltrating duct carcinoma also tend to give the impression that all invasive tumors originate from in situ disease. This assumption is as yet unproven, although these patients are known to be at risk for the development of invasive carcinoma.

Unfortunately, thermography has been abused due to a lack of understanding that

thermographic changes in the breast are of a nonspecific nature and basically indicate a deviation from normal, requiring further investigation. It does not specifically diagnose the presence of cancer. It is, however, a unique method of examination, because it demonstrates a dynamic biological change rather than a static picture of structural change within the breast. For this reason alone, it is a pity that thermography has undergone so much destructive criticism, when it can detect abnormalities that may precede the development of cancer. Although this technique is, at the present time, too nonspecific, we should nevertheless encourage researchers to continue their investigation of disease-associated vascular and thermal changes within the breast.

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Reference

1. Clark RM, et al: Thermography of the breast: experiences in diagnosis and follow-up in a cancer treatment centre. *Acta Thermographica* 3:155-161, 1978.

Author's Reply:

I am grateful to Dr. Clark for his comments. I would agree that our screening group of patients is an entirely different group from his patients. However, whether he is aware of it or not, he is, in fact, screening a high-risk group of women. Their incidence, or frequency, of breast cancer simply should be greater than the incidence, or frequency, of breast cancer in the general population. He should note that I compared his results with the Cincinnati population of women who were not screened, prior to the institution of any breast screening center in our city.

It would seem to me that the goal of Dr. Clark's periodic examination of his high-risk patients is to lower the stage of detection below what it would have been had they not been so followed. The data would suggest that thermography screening has added little to what can be achieved without it.

In Cincinnati, about 55 percent of the patients have stage 1 or smaller carcinomas in the absence of any screening. It has been amply shown by Foster et al¹ and Greenwald et al,² among others, that this same level of sensitivity can be achieved by a program of breast self-examination. Additionally, if one carefully analyzes the Third National Cancer Survey and SEER data, one can see that this same level is now being achieved generally throughout the United States. If the thermography performed by Dr. Clark is unable to advance or significantly increase the proportion of stage 1 or smaller carcinomas, I would suggest that it is a cost-ineffective procedure and probably should be abandoned.

I find it a little quixotic that thermographers all insist that thermography does not specifically diagnose breast cancer. If it does not diagnose breast cancer, then the question must be: "Can it sift out those patients who are harboring early cancers from the general population?" If it cannot do that at a rate greater than chance alone, then it seems to have very little utility as a prescreening, or screening, device, whether used for a low-risk or high-risk population of patients.

While I understand Dr. Clark's concern that perhaps not all intraductal or minimal breast cancers will grow into large cancers, I do not share it. The data emanating from our own Breast Cancer Detection Demonstration Project (BCDDP) indicate that when screening was stopped for younger women (and after an appropriate lead time of 2½ years), the same number of cancers occurred in that population as occurred in the preceding period of time. The only difference was that instead of 58 percent being minimal breast cancers, there were 58 percent stage 2 or higher carcinomas of the breast. Further, analysis of the BCDDP as a whole indicates that screening does not increase, in a meaningful way, the number of cancers detected. It only lowers the stage at detection.³

While it must be acknowledged that our understanding of the natural history of minimal breast cancer is not known absolutely and may never be, I believe that it is incumbent upon a physician screening for this disease to diagnose it as early as current technology allows. I think that in view of the data available, for physicians to assume that minimal breast cancers are not real breast cancers is a luxury that we cannot allow ourselves. If Dr. Clark chooses to determine his threshold level of sensitivity as stage 1, so be it. However, based on the preceding data, I am at a loss to understand how thermography has helped him in this regard.

While it may be possible to alter the mortality of breast cancer in a population by finding stage 1 disease, there are ample data^{4,5} indicating that the bulk of stage 1 patients are not cured of their disease in the sense of being free of long-term recurrence or ultimate fatality as a result of the disease. There appears to be only one stage of the disease where a significant proportion of patients can truly be offered the long-term opportunity of cure. While we may not be able to find every case at this level due to threshold sensitivities of screening modalities, length bias sampling, etc., if we offer our services of early detection, we should be finding at least a significant portion of our cases at this level. To do more is a consummation de-