

Marrow Can Hide Breast Cancer Cells

Breast cancer's ability to silently spread to various parts of the body via the bloodstream has frustrated physicians for decades. Several studies in the past few years, however, have detected stray tumor cells in the bone marrow of breast cancer patients after surgery. This suggests that these cells, which were carried there by the blood, might herald a relapse elsewhere.

Scientists in Germany now have evidence that patients carrying such aberrant cells are indeed more likely to die from cancer or have cancer appear in nonbreast tissue than are patients without the cells.

The discovery may eventually open a new avenue that physicians can follow to determine a patient's risk of cancer recurrence, says study coauthor Wolfgang Janni, a gynecological oncologist at Ludwig Maximilians University in Munich. Such information could also help clarify what kind of treatment a person needs when first diagnosed with the disease, he says.

Janni and his team analyzed bone-marrow samples from 552 breast cancer patients attending clinics in Augsburg and Munich between 1994 and 1997. The patients underwent breast surgery and received drug or radiation treatments, or both, according to standard protocols.

The researchers found that 199 of these patients had tumor cells in their bone marrow at the time of diagnosis. At the end of 4 years, 49 of these women had died of cancer-related causes. Of the 353 patients without the aberrant cells, only 22 had died.

Therefore, patients harboring the tumor cells were four times as likely to succumb to cancer as the others were, the researchers report in the Feb. 24 *NEW ENGLAND JOURNAL OF MEDICINE*.

Among the 552 patients, the scientists also identified 301 in whom the initial breast cancer hadn't spread to lymph nodes. Of these, 14 of the 100 who harbored cancer cells in bone marrow died of cancer-related disease during the study, while only 2 of the 201 who didn't have evidence of cancer in the marrow died.

The study "is certainly an important report in this field," says John W. Park, an oncologist at the University of California, San Francisco.

In all, 135 of the 552 patients had a cancer relapse of some sort. The 28 women in whom cancer recurred in breast tissue were no more likely to have harbored cancerous cells in their bone marrow than women who stayed free of breast cancer were, the scientists found.

However, the 107 patients in whom cancer cropped up elsewhere were significantly more likely to have these cells. For example, of 19 patients in whom cancer had spread only to bone, 18 had the aberrant cells in their bone marrow. Cancer recurrence in other tissues was less closely correlated with the stray tumor cells' presence.

The scientists also analyzed marrow from 191 patients with nonmalignant breast problems, such as benign cysts. Of these, only two had tumor cells in the marrow, possibly signs of an undetected cancer elsewhere in their bodies, the researchers suggest.

"We are learning from this study and others that cancer cells get out [of the breast] very early in the disease," escaping via the lymph system or the blood, says David N. Krag, a surgical oncologist at the University of Vermont in Burlington.

While the findings won't immediately change the way physicians treat patients, eventually—after more research—a consensus will emerge as to whether this test should be done routinely on breast cancer patients, Park says.

"We think that in the future, [aberrant-cell] detection might help us to identify those people who should get adjuvant [supplemental] therapy," Janni says.

Currently, finding cancer cells in a breast cancer patient's lymph nodes doubles the risk of recurrence to about 60 percent. These patients receive aggressive treatment.

If further research can verify that cancer-free lymph nodes and bone marrow identify a sub-

group of patients at very low risk for relapse, physicians may be able to spare these patients from arduous therapy after surgery, says Barbara L. Smith of Massachusetts General Hospital in Boston, writing in the same journal issue.

—*N. Seppa*