NEW RESEARCH FOR INTRADUCTAL BREAST CANCER

by: Gil Lederman, M.D.

It took several decades for lumpectomy (removal of the lump of cancer) followed by radiation to be considered equally effective for treatment of breast cancer as compared to mastectomy (removal of the breast). Multiple randomized studies were performed in the United States as well as around the world verifying this observation.

Similar work is ongoing for a less aggressive form of breast cancer. This cancer is called intraductal carcinoma or ductal carcinoma in situ. Because of the increasing use of mammograms, small lesions like many intraductal cancers, unpalpable to fingers, are being increasingly detected.

A national group called The National Surgical Adjuvant Breast Project (NSABP) showed the effectiveness of breast radiation in reducing second breast tumors after lumpectomy. This study was nicknamed the B-17 study.

In a current publication by Fisher et al in CANCER pathologic findings from that report were evaluated. In the breast intraductal cancer study, patients were randomly allocated to have either breast radiation or no radiation after lumpectomy.

In the early years of the study, women had an axillary lymph node dissection. Two years into the study (1987), the axillary dissection became optional because of the lack of lymph node metastases and as the authors noted its "historical rarity in women with DCIS."

Of 573 women, 274 had lumpectomy only, while 299 received lumpectomy and radiation. The biopsy tissues were reviewed by NSABP pathologists. Tumors were described either to have good or poor nuclear grade. Good nuclear grade would generally predict a better outcome.

Furthermore, tumors were classified as unifocal or multifocal. If the carcinoma in situ was present in one section of two or more different blocks, it was then felt to be unifocal. If it was in two or more different blocks, it was considered to be multifocal.

The margins of resection - the borders where the surgeon removed the tissue - were evaluated to be free of disease by the pathologist. These were confirmed by NSABP pathologists. The authors noted "We regard margins as free when the tumor is not transected; assessments indicating margins to be close, or too close, are not considered to represent margin involvement."

Occasionally, the authors reported "The status of margins could not be determined with certainty, particularly when the transected margin could not be oriented clearly to indicate whether it represented the "patient" or "tumor" side of the excised tissue. In that circumstance, the status was considered to be "uncertain"."

Eighty percent of the cancers were detected by mammogram findings only. Fifty-three women had subsequent breast tumors in the initially diagnosed breast. Thirty-eight of these occurred in women treated by lumpectomy alone and 15 occurred in the group treated by lumpectomy/radiation. The authors noted, "The overall incidence of ipsilateral breast tumors was reduced from 13.9% in the former to 5.0% in the latter. The average annual rate of ipsilateral breast tumors was reduced 67% - from 4.2 to 1.4 per hundred. The average annual hazard rate of ipsilateral breast tumors was lower for all pathologic characteristics in the group receiving radiation than in the non-radiated group."

Furthermore, statistical analysis was performed to show that this reduction of breast cancers caused by radiation was true and not random. Statistical analysis shows that radiation was highly significant in stopping the growth of subsequent tumors in the involved breast.

While many have suggested that small intraductal carcinomas have a favorable prognosis, the authors of this important study found "no relationship between ductal carcinoma in situ size and ipsilateral breast tumor occurrence."

Furthermore, they noted "the incidence of ipsilateral breast tumor observed was reduced substantially after the administration of local radiation after lumpectomy for small (less than 1 cm.) tumors of which approximately 80% were detected mammographically."

"The majority of subsequent ipsilateral breast tumors occurred within or close to the site of the first cancer." It was suggested "that most ipsilateral breast tumors represented residual cancers or tumor remaining at sites of prior surgical extirpation perhaps due to multifocal - not multicentric - growth pattern of ductal carcinoma in situ."

The authors noted that the best treatment occurred when the margins of tumor were fully excised and radiation was administered "regardless of tumor size or histologic type. Therefore, pathologic assessment of lumpectomy margins appears advisable at least until additional information in this regard is available."

The authors conclude that "the prognosis of DCIS, despite its histopathologic heterogeneity is markedly better than that of the latter (invasive breast carcinoma). This information suggests to us that it would be paradoxical to treat invasive cancer but not ductal carcinoma in situ conservatively."

Thus, another large study from a respected group confirms the importance of adding radiation after lumpectomy for intraductal carcinoma of the breast. Pathologic evaluation of each tumor is important in an attempt to produce the most satisfying outcome both in terms of disease-free survival and cosmetic result.