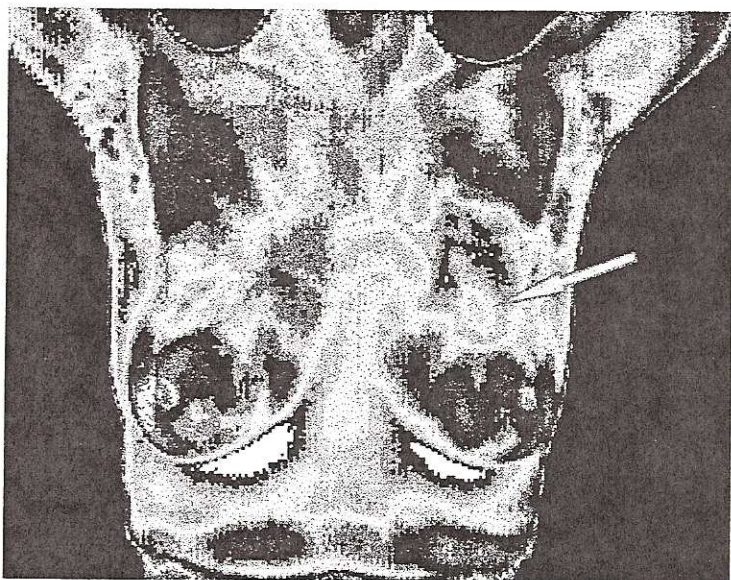


Infrared Imaging as a Useful Adjunct to Mammography

MONTREAL— A group of Canadian physicians hope to spark renewed interest in the use of infrared breast imaging as a complement to mammography.

This technology lost favor some 20 years ago, but with new ultra-sensitive high-resolution digital infrared devices, efficacy is much improved, and the Canadian researchers believe that infrared exams could prove a simpler and less expensive complement to mammography than some of the other newer imaging methods. Researchers from the Ville Marie Breast Center examined infrared imaging in 100 women with non-invasive stage I and II breast cancer. In this study, the 84% sensitivity rate of mammography alone was increased to 95% when infrared imaging was added, John R. Keyserlingk, MD, a surgical oncologist at Ville Marie, said in his presentation of the findings at the recent American Society of Clinical Oncology annual meeting.



In this 38 year-old woman with a lump in the upper mid part of the left breast, mammography showed bilaterally dense fibroglandular tissue, more prominent on the left side. Infrared imaging (left) shows an asymmetrical vascular pattern (arrow) over the left breast. Histopathology revealed a 2-cm infiltrating ductal carcinoma of the left breast.

Mammography and ultrasound depend primarily on structural distinction and anatomical variation of the tumor from the surrounding breast tissue, Dr. Keyserlingk said. Infrared imaging detects minute temperature variations related to vascular flow and can demonstrate abnormal vascular patterns associated with the initiation and progression of tumors.

The new generation of diagnostic infrared technology, Dr. Keyserlingk said, owes much to a decade of military research and development. "In July 1995, we installed a fully integrated high-resolution infrared station," he told ONCOLOGY NEWS INTERNATIONAL. The software allows high-precision pixel temperature measurements.

In their study, Dr. Keyserlingk and his colleagues, Paul Ahlgren, MD, a medical oncologist, and Edward Yu, MD, a radiation oncologist, reviewed 100 successive patients referred to the Ville Marie Breast Center between August 1995 and December 1996 who were subsequently found to have histologically proven non-invasive ductal carcinoma in situ (four patients) or stage I or II invasive breast cancer (96 patients).

All patients had undergone preoperative clinical examination, mammography, and infrared imaging. Clinical examination alone was positive in 61% of the study patients. Mammography was highly suspicious in 65% of patients, with an additional 19% having contributory but nonspecific (intermediate) mammography findings. Infrared imaging was considered abnormal in 83% of patients.