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Tunbridge Wells Hospital

3-D Mammography comes to Tunbridge Wells!



Digital breast tomosynthesis (DBT), otherwise known as 3-D mammography is state of the art technology that can increase the detection of small breast cancers

This new technique has now been investigated in the UK (TOMMY Trial) and several European Breast Units. In the Oslo Tomosynthesis Screening Trial (Norway), the addition of DBT increased the invasive cancer detection rate by as much as 40%. Digital breast tomosynthesis is also good at ruling out cancer and in the majority of the trials fewer women were recalled for unnecessary biopsies.

The system works by creating a 3-dimensional picture of the breast with X-rays. This improves the accuracy of mammography by reducing the inevitable overlap of breast tissue in which small masses and distortions can be hidden. These architectural changes, which may indicate a cancerous process, become much more visible on the tomosynthesis images. Although beneficial for all patients, as demonstrated in the UK TOMMY Trial, digital breast tomosynthesis is particularly useful in women with dense breasts.

Breast tissue is made up of glandular, fibrous and fatty elements and some women have lots of fibrous and glandular material in the breast and very little fat. This increases the breast density and can make standard mammograms difficult to interpret and therefore less precise. Women in their 30s and 40s often have naturally dense breast tissue. As women get older, those whose breast tissue remains dense seem to have a moderately increased risk of breast cancer, which is independent of other breast cancer risk factors.

Researchers from Sydney, Australia and Malmo, Sweden investigated the radiation dose of DBT. When used alone, the radiation dose of DBT ranges from slightly lower to slightly higher than standard full field digital mammography (2 views of each breast). For maximum accuracy, the mammogram readers need to see the breasts in the traditional 2-view format together with the tomosynthesis images. If both techniques are used on the same patient then the radiation dose is undeniably higher than standard mammograms. However, the software that generates the images is sophisticated enough to make 'synthetic' 2-view images of each breast. Evidence suggests that the synthetic 2-views are as good as the real thing and women benefit from the reduced radiation dose.

Any patient with a new breast symptom should see their GP and will usually be referred to see a breast specialist. At that appointment, the specialist will examine the patient and then arrange the investigations. In the Kent/ East Sussex area, women over the age of 35 are offered a mammogram with or without a breast ultrasound as part of the 'one-stop' assessment. Digital breast tomosynthesis is an ideal first-line test for patients with dense breasts.

At this stage, it is difficult to say whether detecting all small cancers with digital breast tomosynthesis will result in more patients surviving breast cancer. However, there is an increasing body of evidence, which indicates that DBT is a better test for breast cancer than conventional 2-view mammography and for younger patients early detection may prove to be very important in terms of survival. For those women who are older and who have lots of fatty low-density breast tissue it is reasonable for them to continue with conventional mammography.



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