Breast Imaging Centre Selects Tomosynthesis to Increase Detection in Dense Breasts

Greater Clarity Improves Diagnostic Confidence

The Breast Imaging Centre at Hôpital Privé Jean Mermoz in Lyon, France, one of the largest private hospitals in the Lyon and Rhône-Alpes regions, is rated by LePoint magazine as the eighth best centre in France for the treatment of breast cancer. In 2003, the hospital reinforced its reputation as a centre for excellence by adding a digital mammography system integrated with a PACS to its armamentarium. Recently, the Centre announced the addition of a new cutting-edge technology – a Hologic breast tomosynthesis system – with the aim of increasing detection of abnormalities in exams on dense breasts and improving workflow in the department.

Selenia System Performance Best on the Market

Dr. Christophe Tourasse, head of the Breast Imaging Centre, believes cutting edge technologies such as tomosynthesis can be critical in the early identification and diagnosis of breast cancer. "Digital mammography is one of the best techniques for detecting breast cancer in women," explains Dr. Tourasse. "However, it is not completely effective for women with dense breast tissue."

Hôpital Privé Jean Mermoz is the fifth hospital in France to install a Hologic Selenia Dimensions tomosynthesis system.

"I chose Hologic's Selenia Dimensions because the Selenia system's performance in 2D imaging is one of the best, if not the best on the market," states Dr. Tourasse.

Breast tomosynthesis builds on the superior image quality of digital mammography by using computer algorithms and multiple digital images of the breast to create what is in essence a 3-D mammogram. Tomosynthesis enables doctors to see more by identifying abnormalities that may be hidden by dense or overlapping tissue.

A Valuable Tool for Routine Mammography Exams

Tomosynthesis has become an important tool for routine mammography examination in the Breast Imaging Centre. "Hologic's Selenia Dimensions system is very easy to use so we can include tomosynthesis in our workflow for routine mammography examinations," says Dr. Tourasse. "This was a key element in my decision to implement the Selenia Dimensions system. The patient doesn't notice any difference from a conventional mammogram, but the technology increases our diagnostic confidence. In addition, I have some cases where the cancer was not visible in conventional views and was diagnosed solely due to tomosynthesis."

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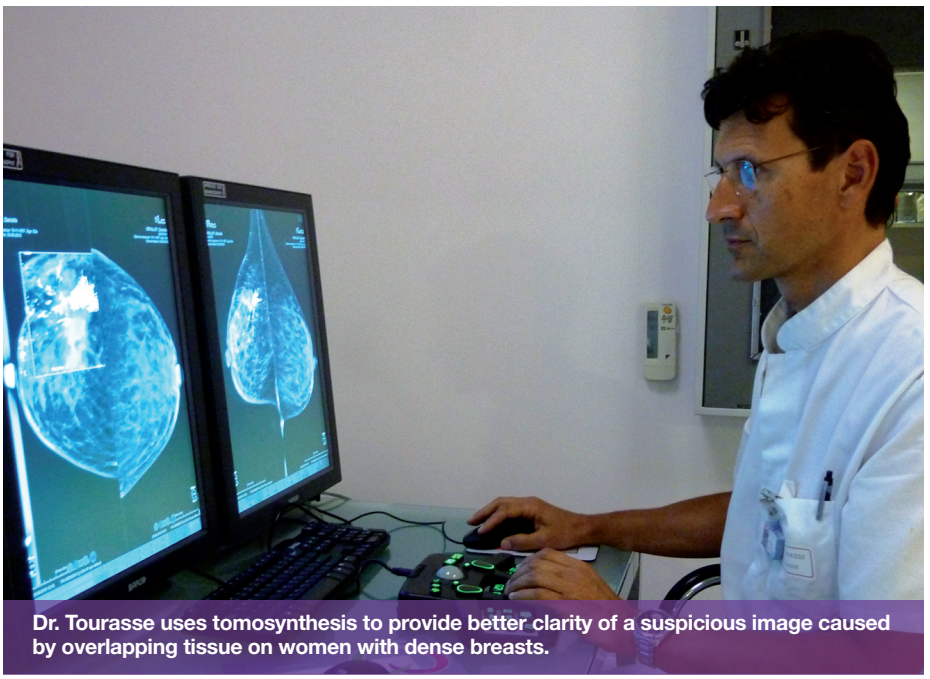
"The ability to acquire two and three dimensional images during the same breast compression is the key feature of the system," states Dr. Tourasse. "The Selenia Dimensions system acquires images quickly, which enables us to use it as a routine evaluation tool. More importantly, it provides a correlation of planes between 2D and 3D, which is a key feature for identification of small lesions between 2D and 3D planes".



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Dr. Tourasse uses tomosynthesis to provide better clarity of a suspicious image caused by overlapping tissue on women with dense breasts. Tomosynthesis increases the radiologists' confidence that they are reading the image correctly. "We can see the overlapping tissue when we go through tomosynthesis slices. It increases the specificity and allows us to take fewer spot views," says Dr. Tourasse.

For a routine breast tomosynthesis exam, Dr. Tourasse uses the unique feature of combined 2D+3D for the CC view and 2D for the MLO. "Depending on the clinical indication, I also might do an extra tomosynthesis on a specific view to better visualise a suspicious area and have more clinical information."

"We are very interested in detecting masses, as these masses when cancerous, are linked to convergent architectural abnormalities much better seen in tomosynthesis. Tomosynthesis also helps detect microcalcifications in dense breasts, giving us a better idea of their spatial distribution. However, we continue to use magnified views to characterise the microcalcifications."

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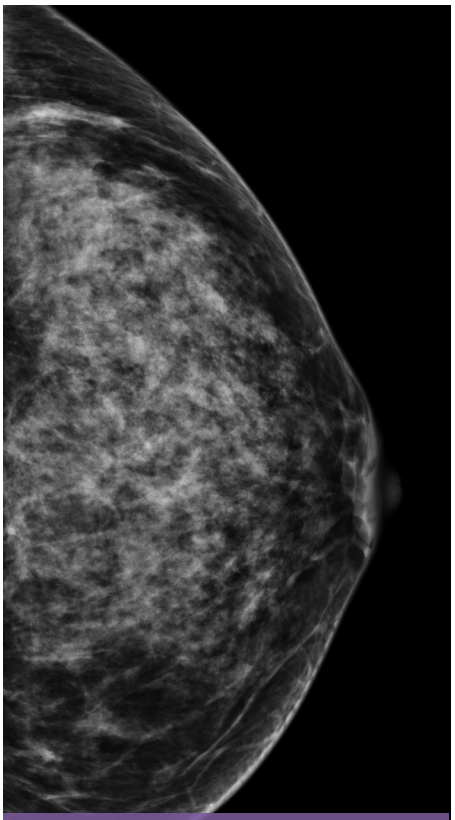
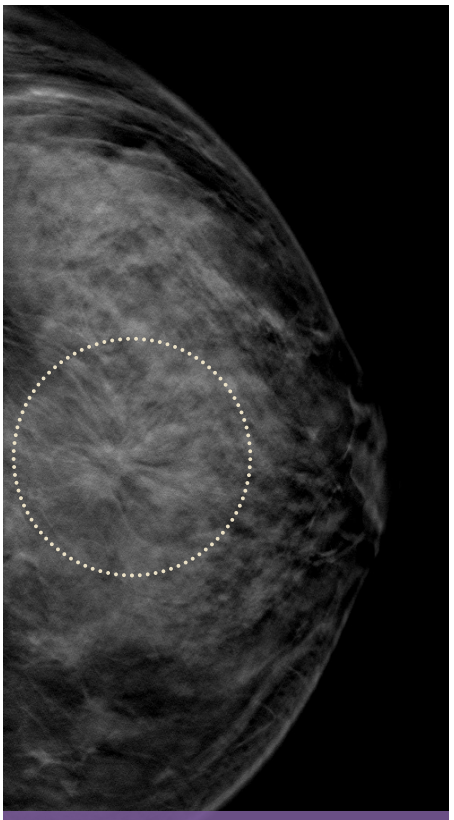
Hôpital Privé Jean Mermoz performs about 10,000 mammograms annually. During the past six months, they have used breast tomosynthesis on more than 5,000 patients. Dr. Tourasse believes patients with BI-RADS® Category 3 mammographic density, heterogeneously dense breasts, can benefit the most from tomosynthesis screening mammograms. "For these patients, superimposed glandular structures create artifacts or false images that may mask a real cancer."



2D Mammography Image



Tomosynthesis Image

On the left is a 2D and on the right is a 3D (tomosynthesis) view of the same dense breast (density 3+). In the 2D view the lesion is very hard to see but in the 3D view, a large distortion in the middle of the image can be clearly seen. A biopsy confirmed the distortion was an Adenocarcinoma. With the Selenia Dimensions fusion mode, the 2D and 3D images are co-registered, allowing accurate comparison of the lesion in the two imaging modes and giving the radiologist more confidence in what he/she is seeing.

Tomosynthesis Useful in Difficult-to-Read Images

Dr. Tourasse adds that tomosynthesis helps explain images that are difficult to read, sometimes eliminating the need for a breast MRI or additional exams. "Anytime we take additional views, it interrupts our workflow. With tomosynthesis, we very rarely ask for additional views, so tomosynthesis helps us achieve a better workflow."

"Our focus on diagnosis and treatment sets our hospital apart," continues Dr. Tourasse. "The Breast Imaging Centre had been performing prone biopsies since the technology became available and has developed a close collaboration with several surgical teams. From the beginning we've seen the clinical benefits of vacuum assisted breast biopsy for diagnostic follow-up in addition to micro biopsy. Tomosynthesis gives us an exact localisation of a breast lesion and helps guide us when doing a breast ultrasound, specifically for lesions with weak echographic contrast. It also punctually helps us in preoperative localisation on not well seen lesions in 2D."

"Tomosynthesis gives us more confidence in our reading and that leads to a lower recall rate," concludes Dr. Tourasse. "In most cases, cancer not seen on 2D can be identified on a second reading with the help of the tomosynthesis."

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