Greater visibility

Digital mammography improves image quality and increases diagnostic accuracy

Who/where

Mammography center of a pan-regional professional association for radiology, radiotherapy, nuclear medicine, oncology and neurology in Leverkusen, Germany, with 200,000 examinations and treatments per year. Interviews with:

- Dr. med. Lutz Henscher
  Specialist in radiology
- Dr. med. Juliane Terpe
  Specialist in diagnostic radiology
- Michaela Hammerschmidt
  Technologist
- Denise Schultes
  Doctor's assistant

Challenge

Introduction of digital mammography to improve image quality and the efficiency of mammography screenings.

Solution

- PCR Eleva CosimaX with three workstations and a four-slot image plate reader
- Philips MammoDiagnost mammography imaging systems

The "Radiologisches Netzwerk Rheinland" is a continually growing professional association for radiology, radiotherapy, nuclear medicine, oncology and neurology and employs around 70 people in Leverkusen. Since the breast diagnosis department has switched from film imaging to digital mammography, image quality has increased significantly, say the doctors. Using digital technology, three doctors are now able to perform a total of 35,000 mammographies a year. Before their first mammography, many women ask about the latest technological developments and are encouraged by the fact that their doctors are using digital imaging techniques.

The pan-regional professional association for radiology, radiotherapy, nuclear medicine, oncology and neurology is represented in several locations in and around Leverkusen as part of the Ärztekammer Nordrhein (North Rhine medical association) and, based on numerous partnerships with hospitals, plays a part in integrated outpatient and inpatient care in several locations. The "Mammamobil" mobile mammography unit also belongs to the practice, looking after twelve locations in the region based on a fixed schedule.
At the Gesundheitshaus Leverkusen, Dr. Lutz Henscher, Dr. Juliane Terpe and Dr. Agnes Caroline Dietz use mammography and ultrasound to carry out all female breast examinations. They have been using the MammoDiagnost mammography system for several years and the PCR (Philips Computed Radiography) Eleva CosimaX system for two years. "We took a gradual approach to introducing digital technology to our practice," explains Dr. Terpe. "We started off with a single-slot image plate reader and are now using a four-slot plate reader, and image archiving has been fully digital since last year." The large practice now has three MammoDiagnost systems and three reporting workstations.

Dr. med. Lutz Henscher, specialist in radiology.

PHILIPS

Digital technology saves the doctors' assistants a huge amount of time.

Improved image quality

The introduction of the new system has enabled doctors to see tiny microcalcifications and structures of the breast tissue which would hitherto have been invisible. "Digital mammography is superior, especially where young females with dense tissue are concerned," says Dr. Terpe.

"Using the new technology, exposures are close to perfect every time."

Whereas previously, sometimes it was only the white areas which were predominantly visible, now the internal structures of the breast are visible on the mammogram in clearly recognizable black and white, even where the tissue is dense. "With analog imaging, the setting parameters of the processor could not be kept absolutely constant, resulting in variations in quality. Sometimes the images were too bright, sometimes too dark," recalls Dr. Henscher. "Using the new technology, exposure is close to perfect every time, allowing the margin of error to be kept very low."

"What's more, the way the system operates makes our job much easier and enables us to increase diagnostic accuracy," says Dr. Terpe. The doctors have defined their "Hanging Protocol" in such a way that it automatically displays each image in the same order, from small images to medium-sized and enlarged images and back to the original small-scale format.

Going filmless

The doctors also highly rate the ability to directly compare current images with older archived images. X-ray images can be accessed much more quickly than with a conventional search for archived X-ray films. Dr. Terpe adds: "Another advantage is that the images can no longer be lost or mixed up." The digital X-ray images can be sent to other doctors electronically together with the reports more quickly and safely than by post. "Ours is now a completely filmless system," says Dr. Terpe.

"Another advantage is that the images can no longer be lost or mixed up."

Digital technology saves the doctors' assistants a huge amount of time, since trips to the dark room are no longer necessary. "I used to take the pictures to Dr. Terpe myself. Now the system sends the images automatically," says technologist Michaela Hammerschmidt. "Now we no longer have to develop films and can use the time we save to take care of our patients or do the accounting," adds colleague Denise Schultes.

Efficient screening

Digital technology is ideal for handling a large number of mammographies. The number of women undergoing mammographies has increased dramatically in the last one and a half years, since the mammography specialists in charge of Screening Unit 8 are now having to look after women from a large part of the Cologne region. Women between the ages of 50 and 69 are entitled to take part in the free prevention program geared towards detecting breast cancer early. The initiative, launched in 2002, is designed to enable doctors to detect tumors that are not yet palpable. The screening process places extremely high demands on the participating doctors in terms of quality; they have to be specially trained and routinely have to evaluate the mammographies of at least 5,000 women a year.

The doctors have redefined their workflow for participating in the national screening program. In each case, dual reporting is required and all reports are discussed with

"Women are well informed and many ask specifically about digital mammography."

The "Mammamobil" mobile mammography unit also belongs to the practice.

"Now we no longer have to develop films and can use the time we save to take care of our patients."

"Digital mammography is superior, especially where young females with dense tissue are concerned."

a colleague. Dual reporting using a monitor is much easier than with analog film that has to be hung up. What's more, both of those responsible for reporting have immediate access to the same digitally archived images, allowing them to make comparisons.

The screening program involves the practice sending large amounts of data to the regional Reference Center for Mammography. "Every day we measure the data of several devices, including the data from our Mammamobil," says Mrs. Hammerschmidt. "The data from the consistency check is then sent to the reference center by e-mail. This would hardly be possible without digital technology." A digital system is also crucial to the mobile mammography unit, which changes location every two to four weeks. "If we were processing film, we would have to dispose of all the chemicals every time we change location," reflects Dr. Terpe.

Satisfied patients

Besides improved image quality and an improved day-to-day workflow, patients' demand also played a part in the decision to switch to digital technology. "When women call for a mammogram appointment, they very often ask about digital devices," says Mrs. Schultes. "Women are pleased to see that our mammography units are equipped with state-of-the-art technology."

"Women are well informed and ask specifically about digital mammography."

The profesional association provides both diagnostics and radiation therapy. The center has grown steadily over the last few years, which Dr. Henscher attributes largely to the use of excellent equipment. "Women are very well informed nowadays, not just about symptoms but also about the latest technologies. Many ask specifically about digital mammography and 3-D ultrasound; if we didn't have this technology, these women wouldn't come to us at all for their mammographies."

Dual reporting using a monitor is much easier.

Future-proof investment

When the new systems were introduced, it was important to the doctors that the images of the new device were very similar to the original mammograms. "With the PCR Eleva CosimaX we could continue as before, as the image displayed was very similar to what we were used to seeing", says Dr. Henscher.

Which means that although the switch from analog to digital mammography has brought about a considerable improvement in image quality, making it much easier to come to a diagnosis, it has actually been very easy for the physicians to get used to the new system.

"I would definitely recommend Philips to anyone."

"The staff at Philips were very patient with us in the beginning," he adds. "The service was impeccable." More recently, however, the staff at the practice have had no reason to contact the Philips service team. Dr. Terpe sums up: "We are impressed with the MammoDiagnost and PCR Eleva and they are also very good value for money. I would definitely recommend Philips to anyone."

Philips Healthcare is part of
Royal Philips Electronics

Interested?
Would you like to know more about our imaginative products? Please do not hesitate to contact us. We would be glad to hear from you.

On the web
www.philips.com/healthcare

Via email
healthcare@philips.com

By fax
+31 40 27 64 887

By mail
Philips Healthcare
Global Information Center
P.O. Box 1286
5602 BG Eindhoven
The Netherlands

By phone
Asia
Tel: +852 2821 5888

Europe, Middle East, Africa
Tel: +49 7031 463 2254

Latin America
Tel: +55 11 2125 0764

North America
Tel: + 1 425 487 7000
800 285 5585 (toll free, US only)

MammoDiagnost with PCR Eleva CosimaX is not yet available in North America.

Printed in The Netherlands.
4522 962 29511/714 * NOV 2007