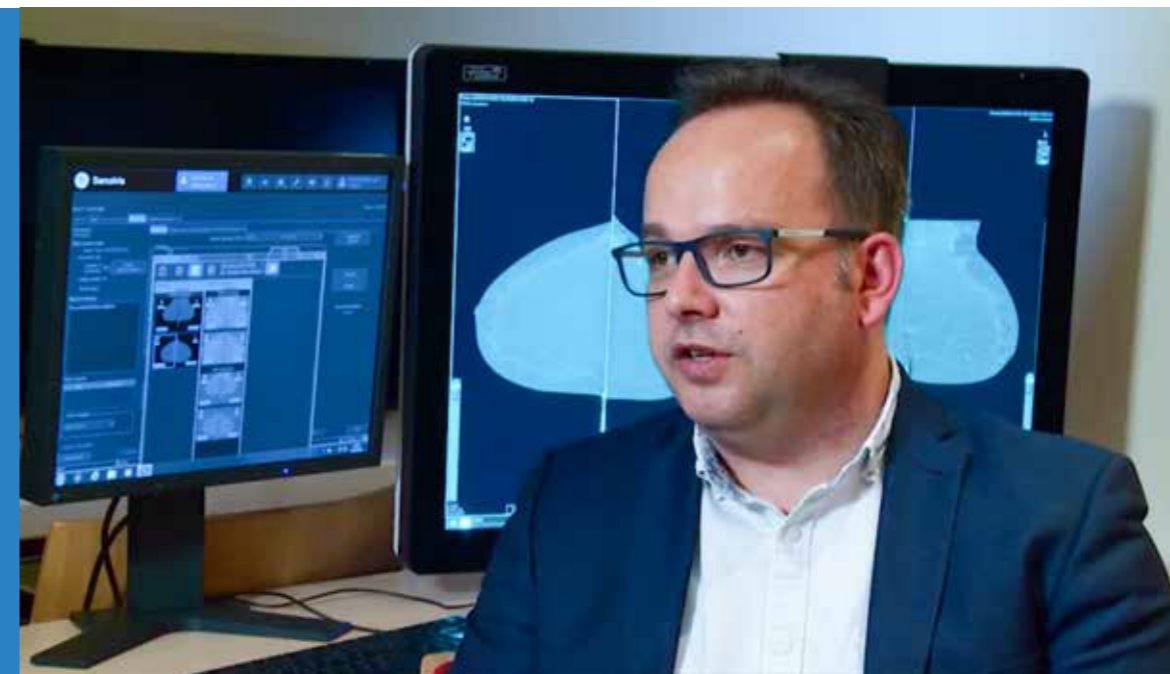


## Focus on CESM in screening recall

Contrast-Enhanced Spectral Mammography (CESM), as a fast and affordable technology allowing for the visualization of vascularized lesions in the breast, is changing the game in clinical practice. The combination of morphologic and physiologic information provided by CESM has been shown to have a better diagnostic accuracy compared to digital mammography<sup>1</sup>. CESM is routinely used in different clinical contexts such as a problem solving tool in case of non-concordant mammography and ultrasound images. There is ongoing research of potential interest of using CESM as a first-line tool in screening recalls<sup>2</sup>, for challenging breasts such as very dense<sup>1</sup> or post-op patients operated ones<sup>3</sup>, and/or as a tool in treatment planning or for monitoring neoadjuvant chemotherapy<sup>4</sup>. In addition, research currently explores the interest of this tool in a screening setting for high risk and dense breast patients. From a patient perspective, CESM is preferred (over MRI) as it is faster, of greater comfort and generates less anxiety<sup>5</sup>.

**Dr. Marc Lobbes** is a member of the Board of the European Society of Breast Imaging (EUSOBI), Member of the Dutch College of Breast Imaging (DCBI), Breast radiologist of both Zuyderland Medical Center and Maastricht University Medical Center.

As dedicated breast radiologist, he annually views over 500 breast MR exams, over 3,000 clinical mammograms, and performs over 60 MR guided biopsies. He participates in the Dutch breast cancer screening program, viewing over 8,000 screening mammograms annually. Due to his training and vast experience in evaluating breast MRI exams, he frequently acts as a consultant for other hospitals. Dr. Marc Lobbes is the author of more than 90 scientific papers (of which 17 papers on CESM) and author of multiple book chapters on CESM.



**Could you please briefly introduce yourself?**

*Dr. Lobbes:* I have been the Director of the Breast Imaging Department for 16 years in Maastricht University Hospital. I recently moved to the Zuyderland Medical Hospital which is a large general hospital located in Sittard-Geleen in the southern part of the Netherlands.

**Can you share with us your experience with contrast mammography?**

*Dr. Lobbes:* We've been early adopters of contrast enhanced mammography. The first clinical cases we handled were in November 2012, and we really started using it regularly since January 2013. We focused our initial experiences with Contrast enhanced mammography on screening recalls as

we thought it would be a very interesting study population. And since that period, we tried to extend the indications for CESM, gaining more confidence, and more experience.

**What are the main advantages of using CESM in your practice?**

*Dr. Lobbes:* I think the main benefit of using contrast enhanced mammography in screening recalls is that, as a doctor i am much more confident that what I am looking at is really the truth. So I am much more confident in the lesions that I am detecting, seeing whether it's benign or malignant, and even if I don't see anything abnormal on either the low energy image or your recombined contrast image, I feel much more confident that it's safe to call these patients back in two years for regular screening, instead of keeping having

them come back for follow-up every six or twelve months. So I avoid keeping healthy people within a hospital system while they should really go out and not worry about it, then return within two years for a regular screening.

**What would be your message to a multidisciplinary team starting with contrast?**

*Dr. Lobbes:* I think the most important thing that I would give as a take home message for the other members of a multidisciplinary team is that they really can rely on the images that they see. The image quality is good and we know from literature - and not only one publication but several publications now - that the diagnostic accuracy of contrast enhanced mammography matches the quality of breast MRI<sup>1</sup>.

*"Using CESM in recall from screening, I am much more confident in the lesions that I am detecting, seeing whether it's benign or malignant, and even if I don't see anything abnormal on either the low energy image or the recombined contrast image I feel much more confident that it's safe to send these people back within two years for regular screening, instead of keep having them call back for a follow-up in six or twelve months"*

So, members of an MDT [MultiDisciplinary Team] should really consider it as a powerful tool, not only detecting breast cancer but also looking at the disease or even response monitoring. They really can have confidence in this technique.

**Tomosynthesis was made available to radiologists about the same**

**time as contrast mammography, however tomosynthesis was more rapidly adopted. Do you see any particular reason for this?**

*Dr. Lobbes:* I think the reason why tomosynthesis was much more widely adopted than contrast enhanced mammography is that if you use these synthetic mammograms, the

additional dose is much lower than what you would have in a contrast enhanced mammogram. And a further disadvantage of contrast enhanced mammography is that you use intravenous injection of iodinated contrast agent, which can cause some kind of kidney injury or perhaps hypersensitivity reactions. Even-though the occurrence of such adverse event is extremely low, that's I think, the main reasons why people were more likely to accept DBT at first over contrast enhanced mammography. □

The statements by Dr. Lobbes reported here are based on results that were achieved in the customer's unique setting. Since there is no "typical" hospital and many variables exist, i.e., hospital size, case mix, etc., there can be no guarantee that other customers will achieve the same results.

1. Data on file. Ge Healthcare 2017. All countries except USA.  
 2. Lobbes MB and al, Contrast-enhanced spectral mammography in patients referred from the breast cancer screening programme, European Radiology 2014.  
 3. Helal MH et al The role of contrast-enhanced spectral mammography in the evaluation of the postoperative breast cancer, 2019 Clinical Radiology.  
 4. Iotti V and al, Contrast-enhanced spectral mammography in neoadjuvant chemotherapy monitoring: a comparison with breast magnetic resonance imaging , 2017e Breast Cancer Research  
 5. Hobbs et al, Contrast-enhanced spectral mammography (CESM) and contrast enhanced MRI (CEMRI): Patient preferences and tolerance, J Med Imaging Radiat Oncol. 2015

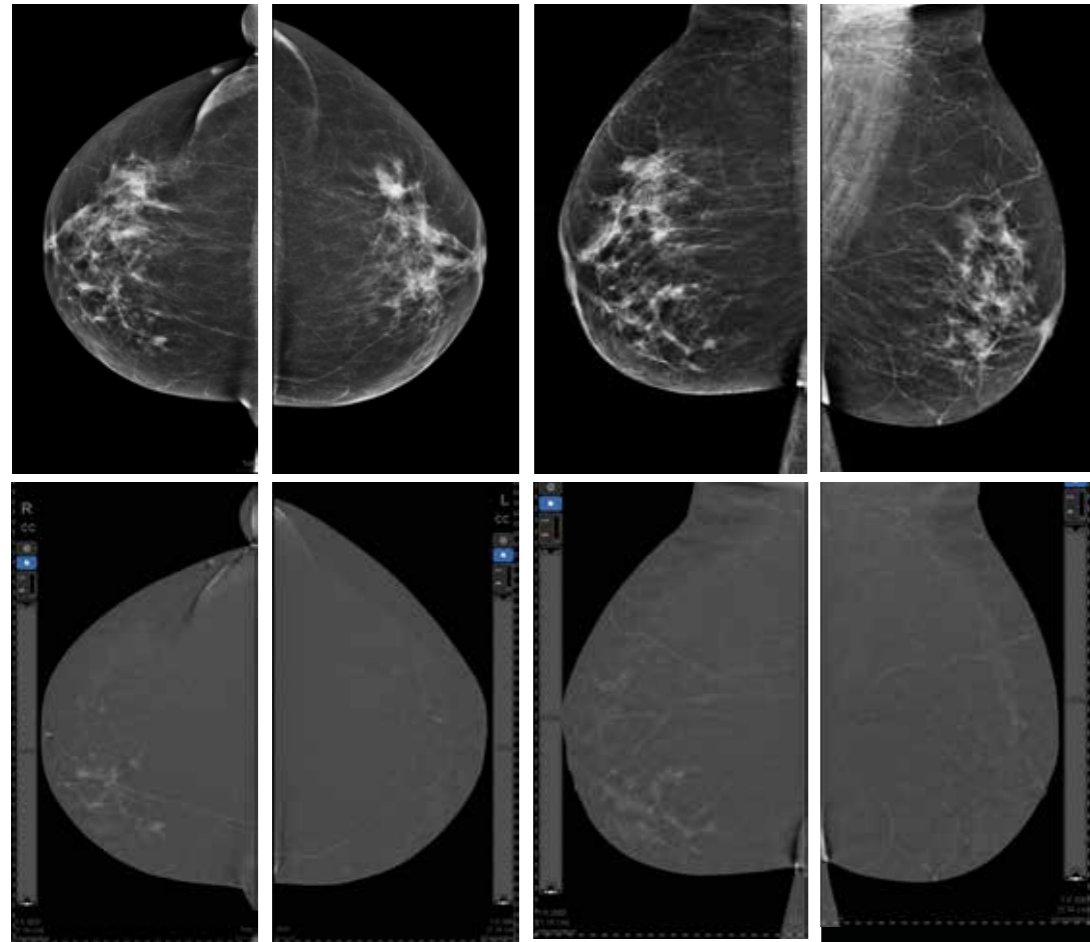


# Clinical case: CESM in screening recall

Courtesy of Dr. Lobbes, Zuyderland Medical Center, Netherlands.

## Clinical context

60 year old female. Recall from screening for a mass in the lower inner quadrant of the left breast . No complaints. Mother died of breast cancer at the age of 52.



## Clinical findings

### Low-energy images

- Right breast: Linear orientated pleomorphic calcifications in combination with ill-defined irregular masses
- Left breast: no abnormalities

### Recombined images:

- Right breast: Area of nodular non mass enhancement corresponding with the findings seen on the low-energy image
- Left breast: Small enhancing mass at 12 o'clock position

## Pathology

- Right breast: pT1(m)N0M0 in large area of DCIS (up to 7 cm)
- Left breast: Targeted US negative; MRI guided biopsy: adenosis

## Benefits of CESM :

After one single exam:

- Identification of disease extent on right Breast
- Identification of contra-lateral lesion enhancing