

# Downclassification and upclassification of suspicious breast masses using opto-acoustic imaging

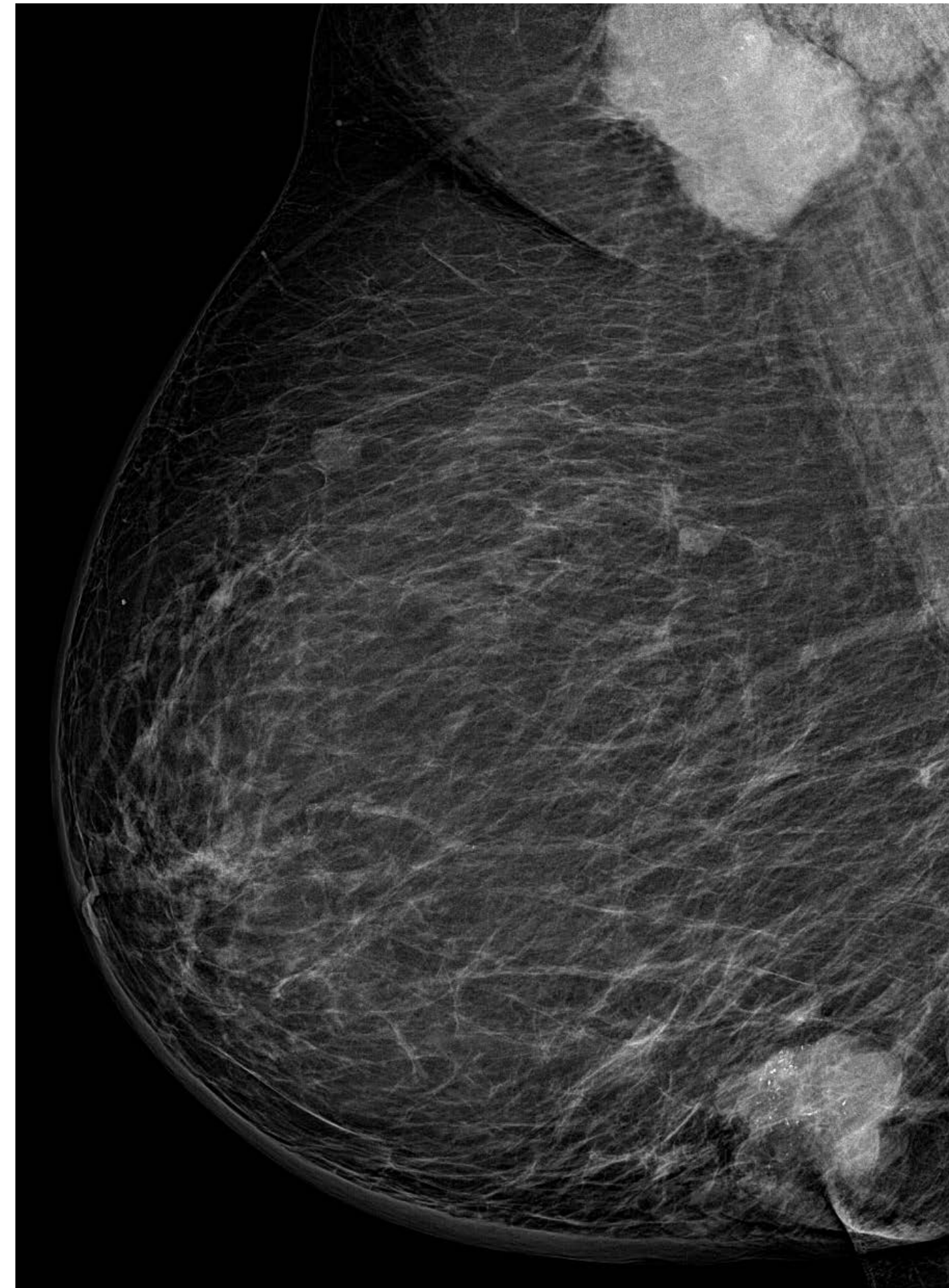
Jeroen Veltman, MD, PhD  
Hengelo, Netherlands

Some of these images are taken  
with the Seno Imagio<sup>®</sup> system  
and are not to be reproduced.

Copyright Seno Medical Instruments, Inc.  
All rights reserved.

# Malignant mass upgrade case 1

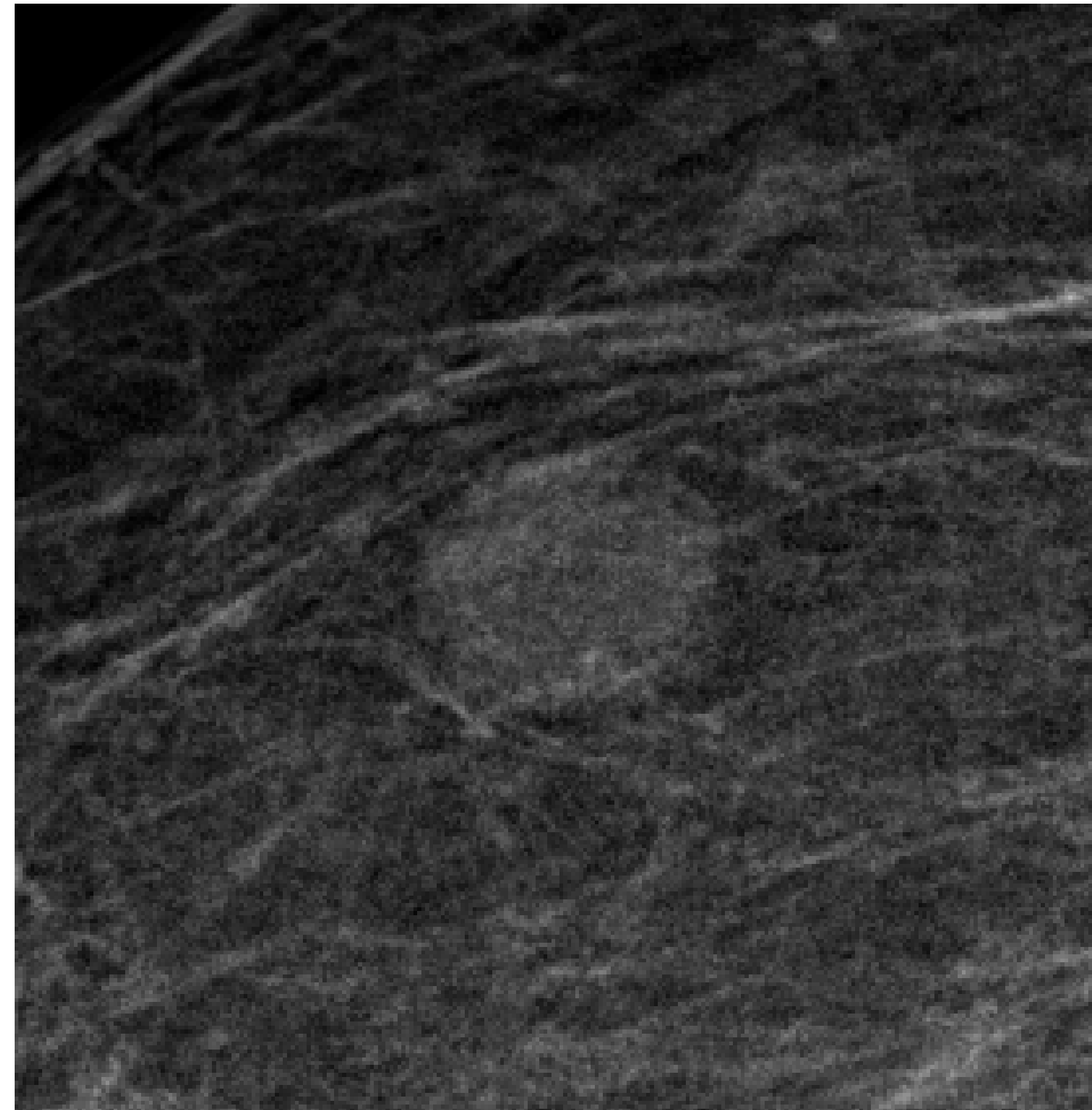
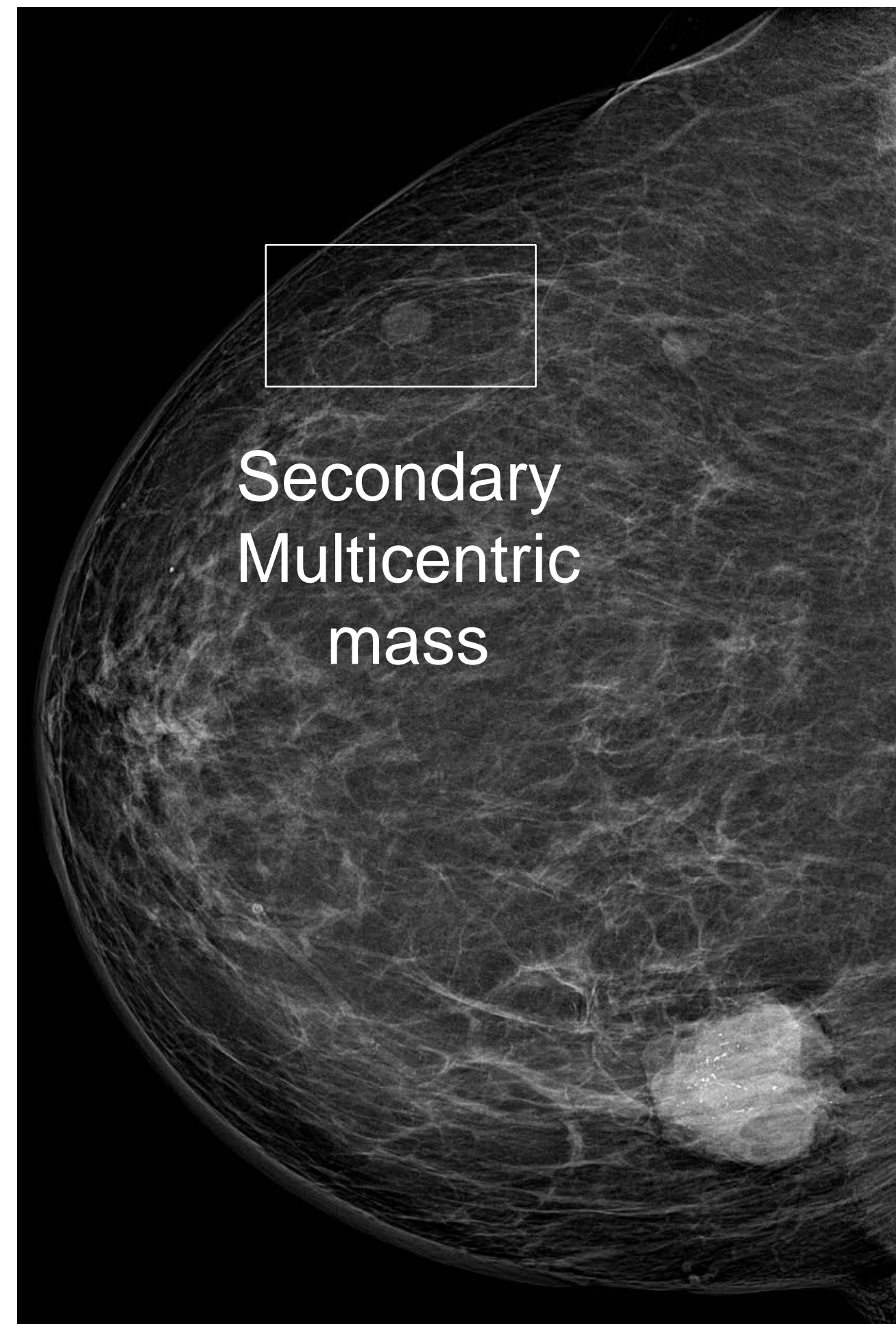
# MAESTRO upgrade case 1 mammogram



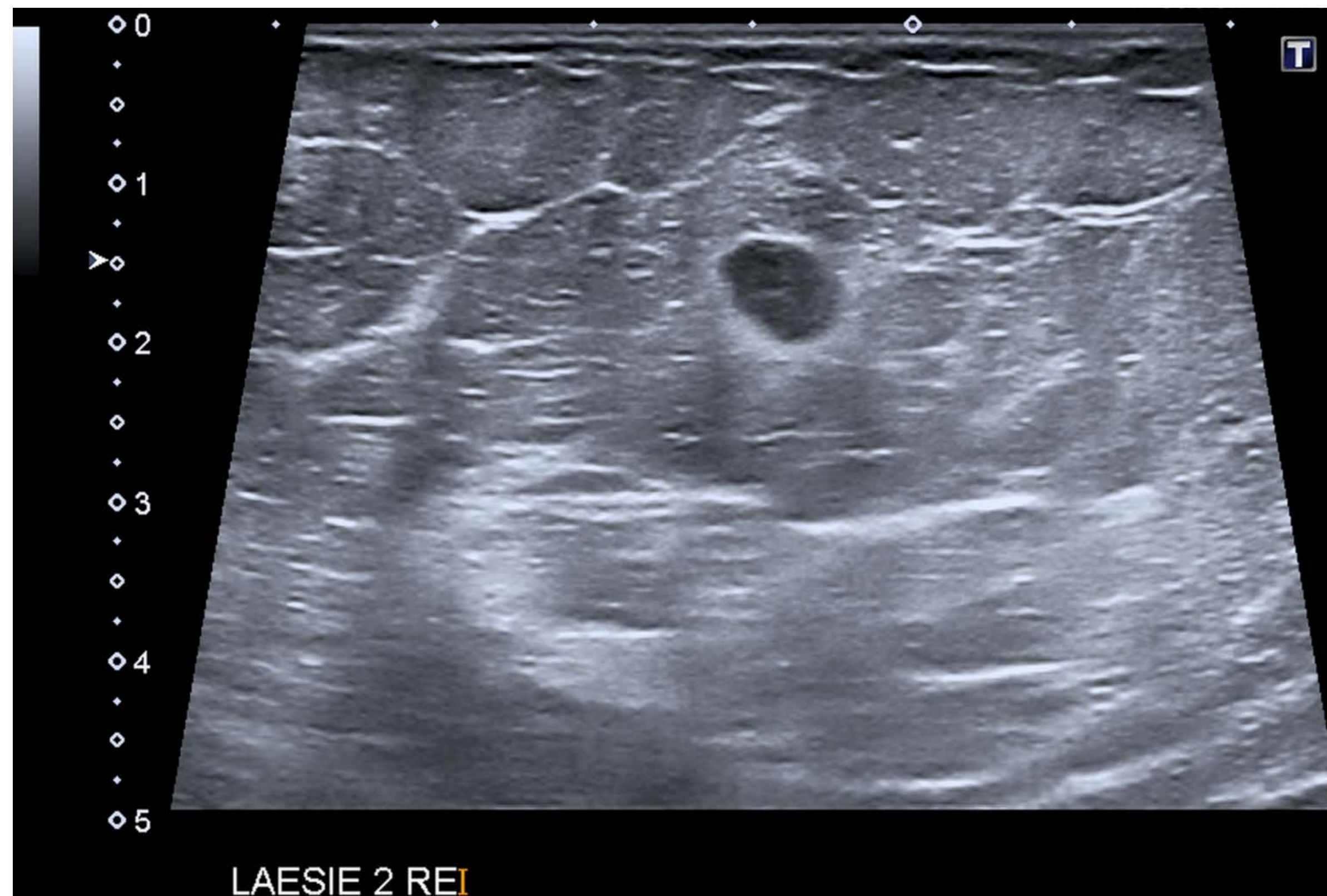
Metastatic  
axillary LN

IDC, gr II

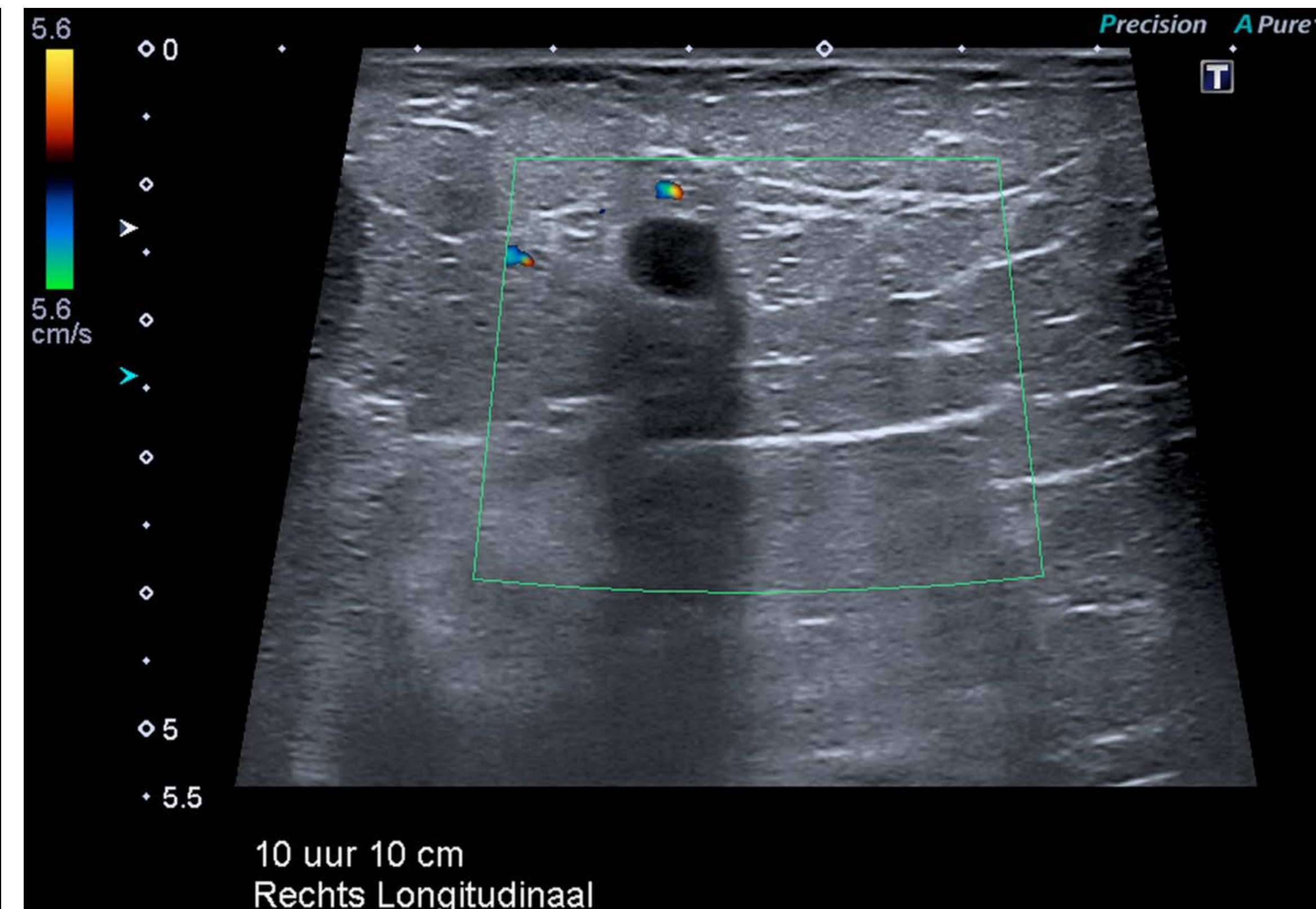
# MAESTRO upgrade case 1 mammogram



# MAESTRO upgrade case 1 – conventional ultrasound (CDU) – multicentric mass UOQ right

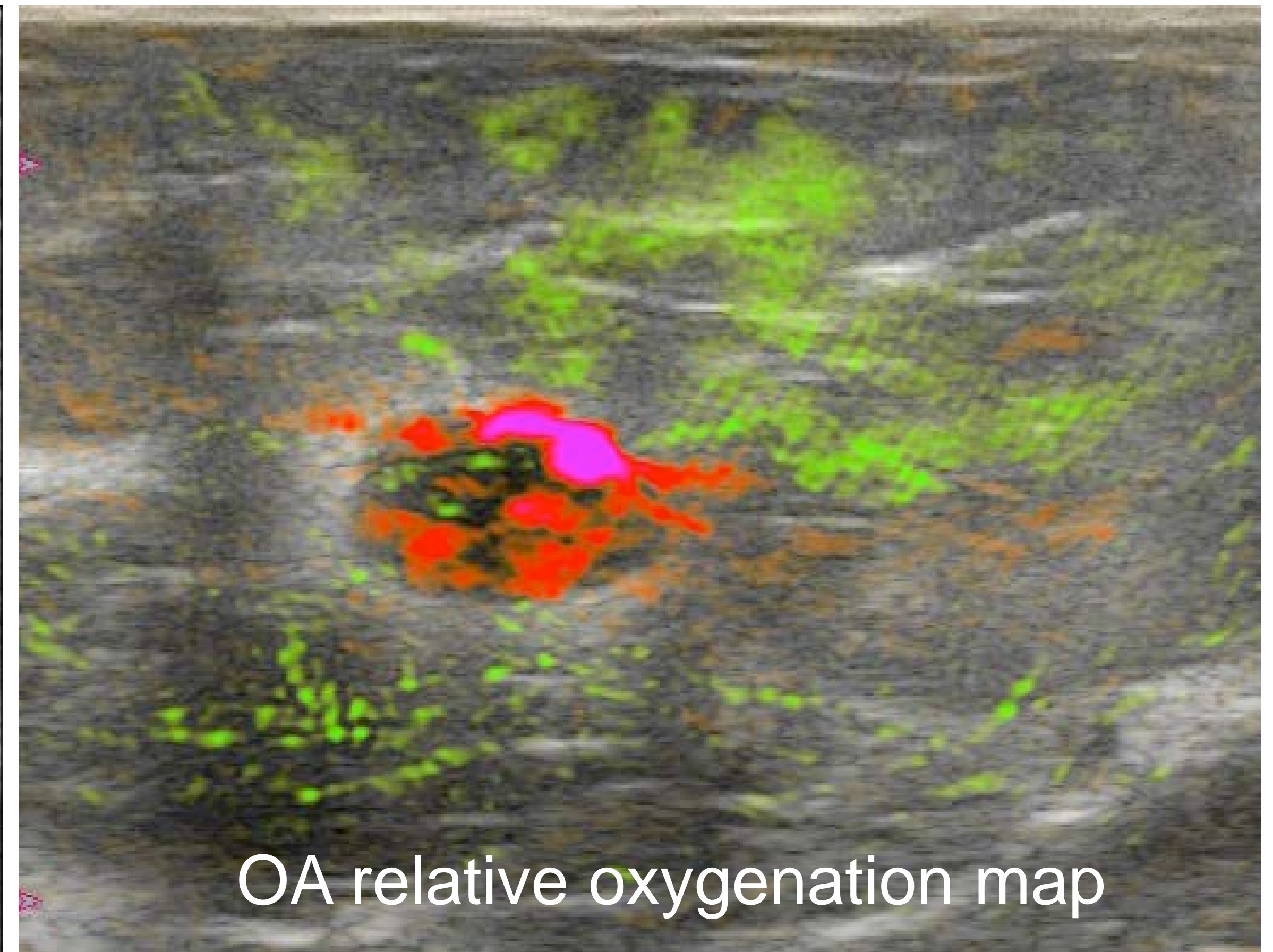
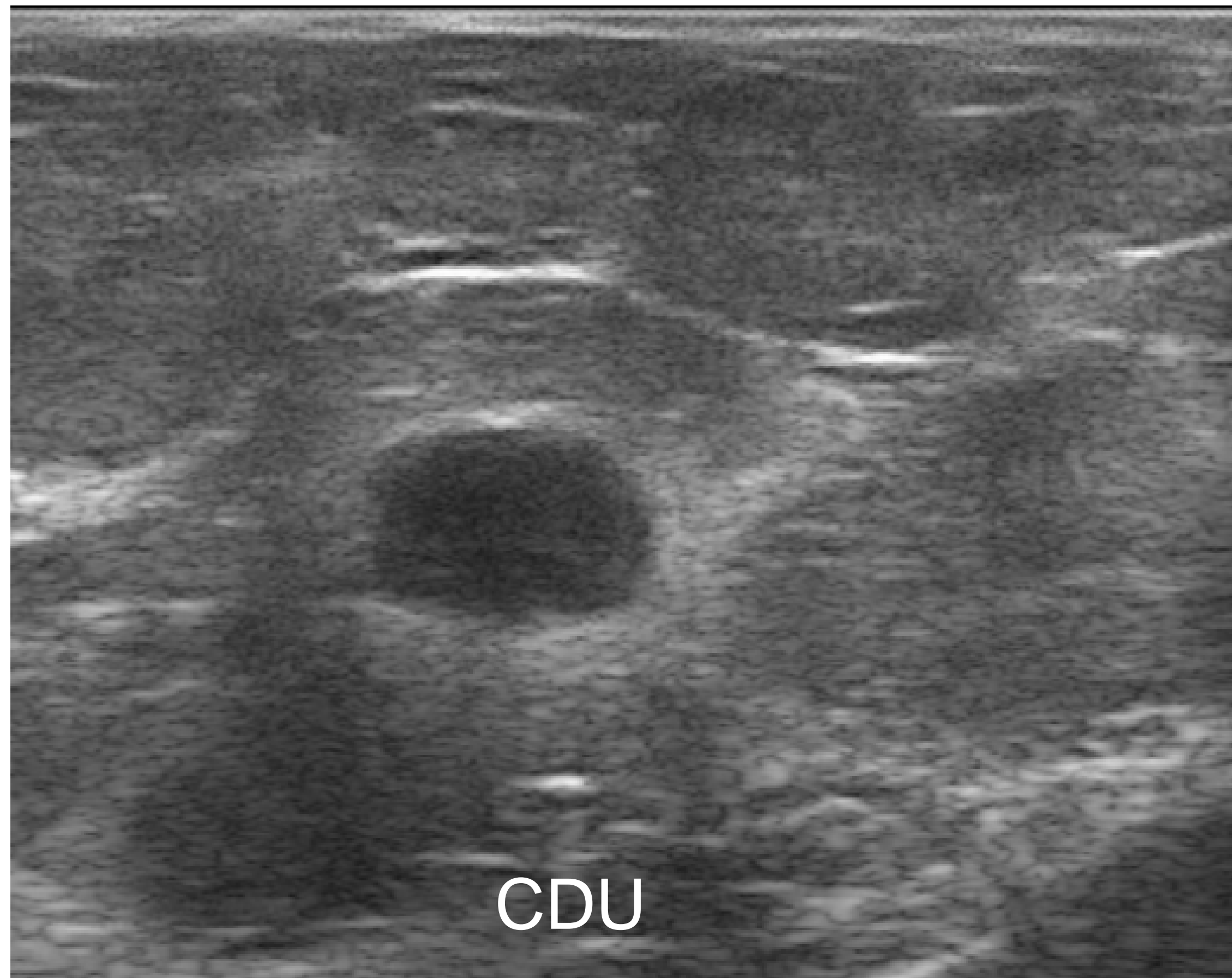


CDU (7mm)

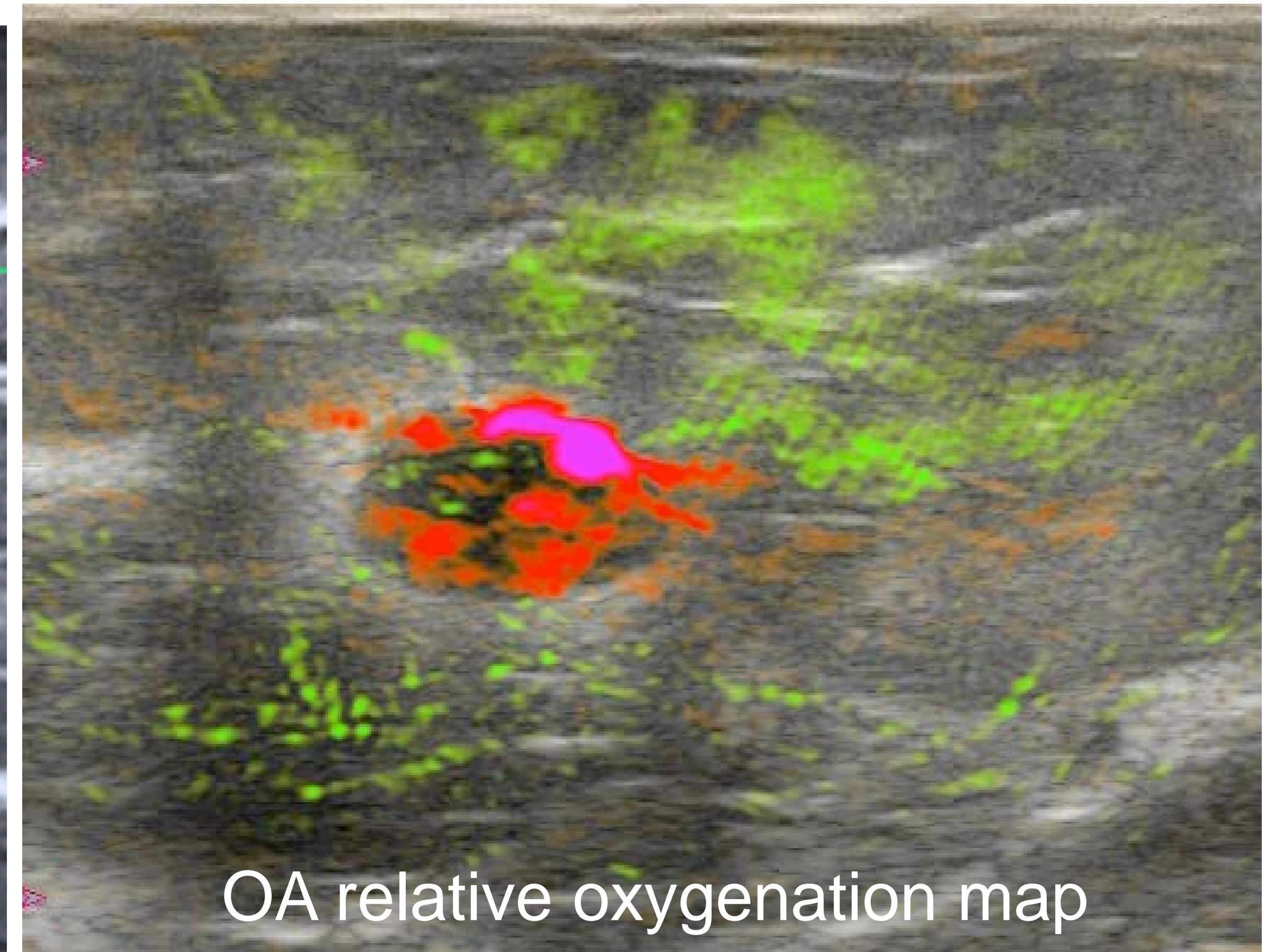
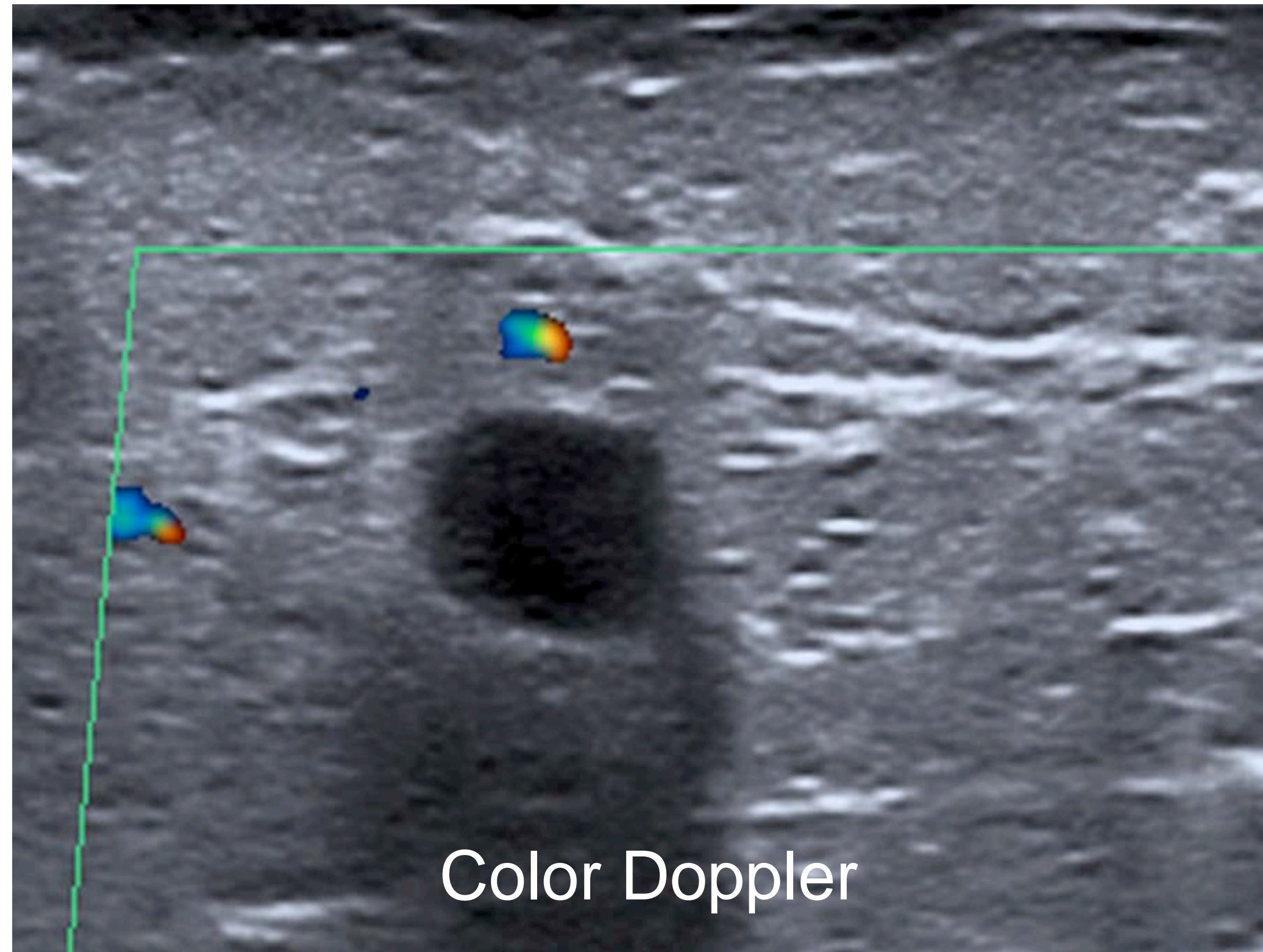


Color Doppler

# MAESTRO upgrade case 1 – Imagio gray scale ultrasound (IUS) vs. OA – secondary mass UOQ right

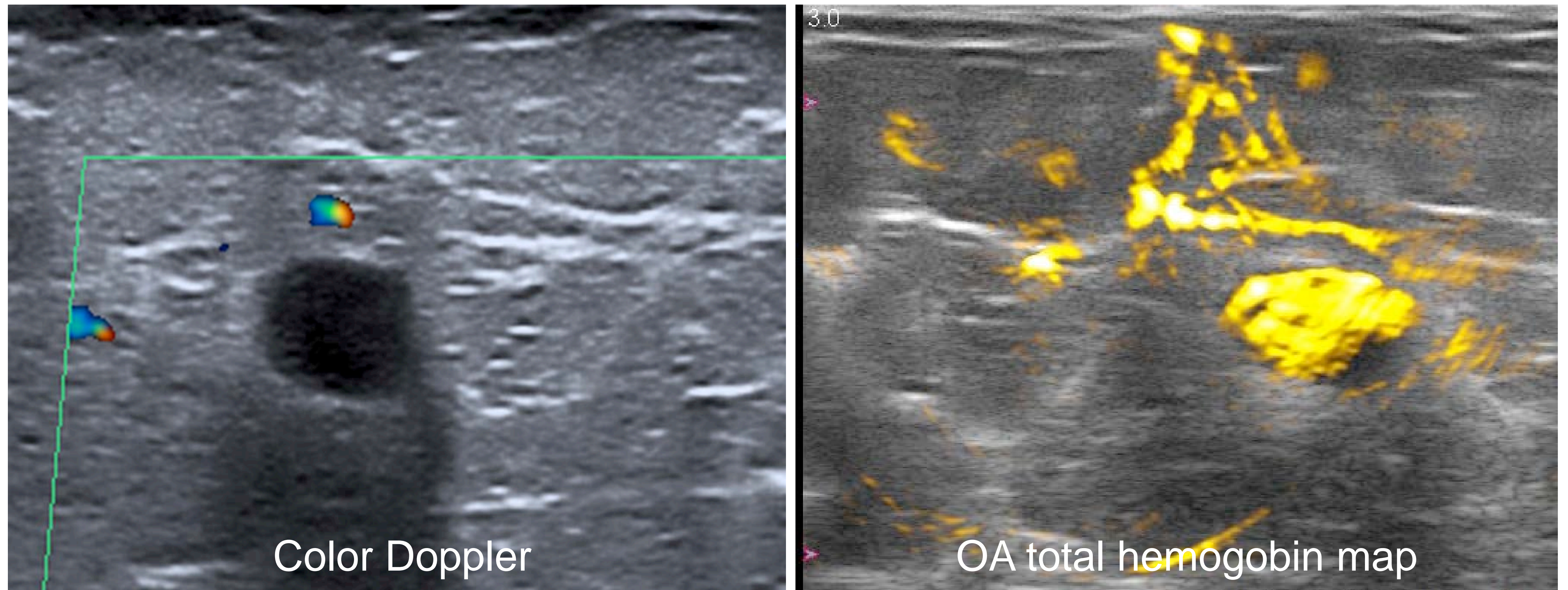


# MAESTRO upgrade case 1 – OA relative hemoglobin map vs Color Doppler – secondary mass UOQ right





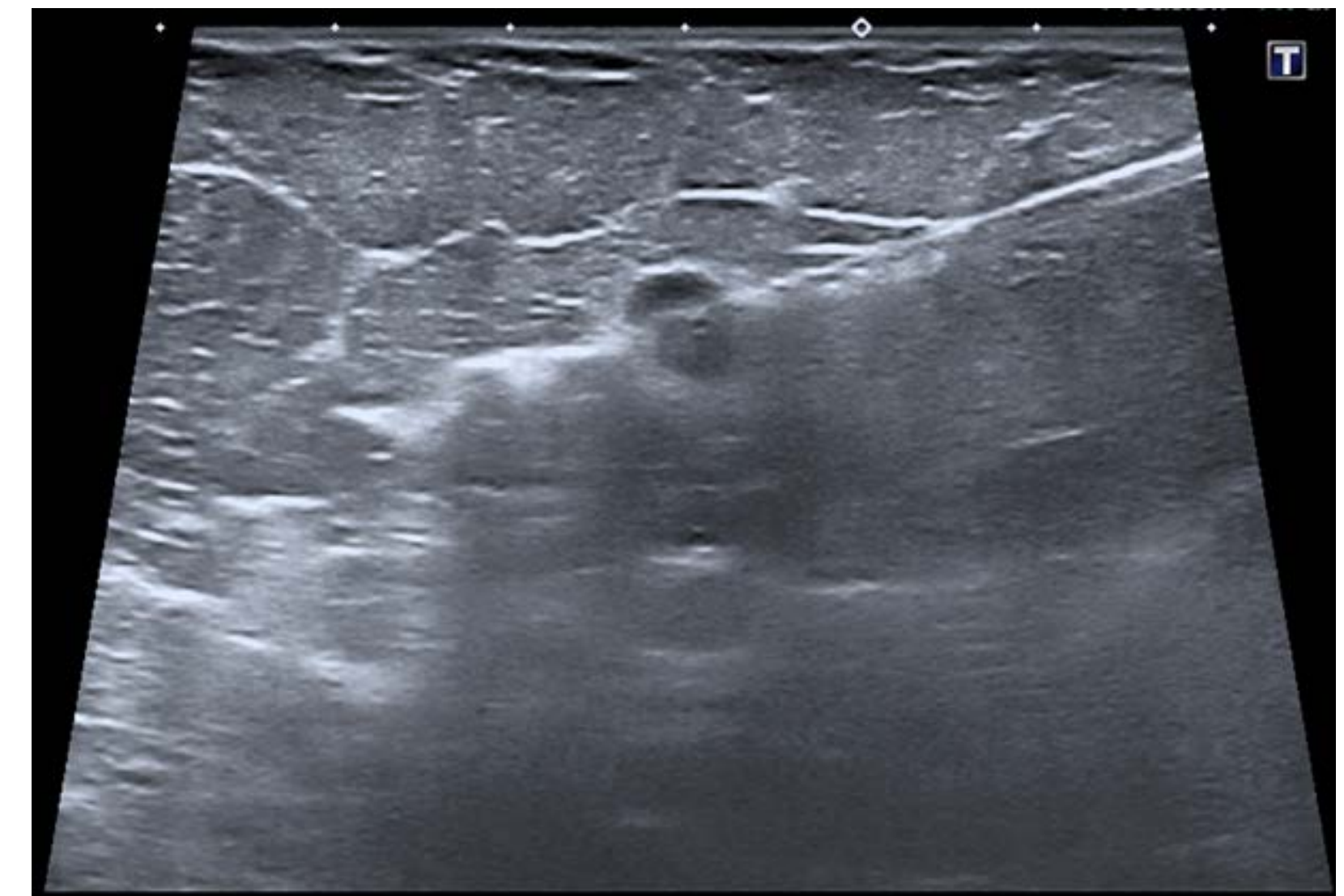
# MAESTRO upgrade case 1 – OA total hemoglobin map vs Color Doppler – secondary mass UOQ right



# MAESTRO upgrade case 1 readings and histology

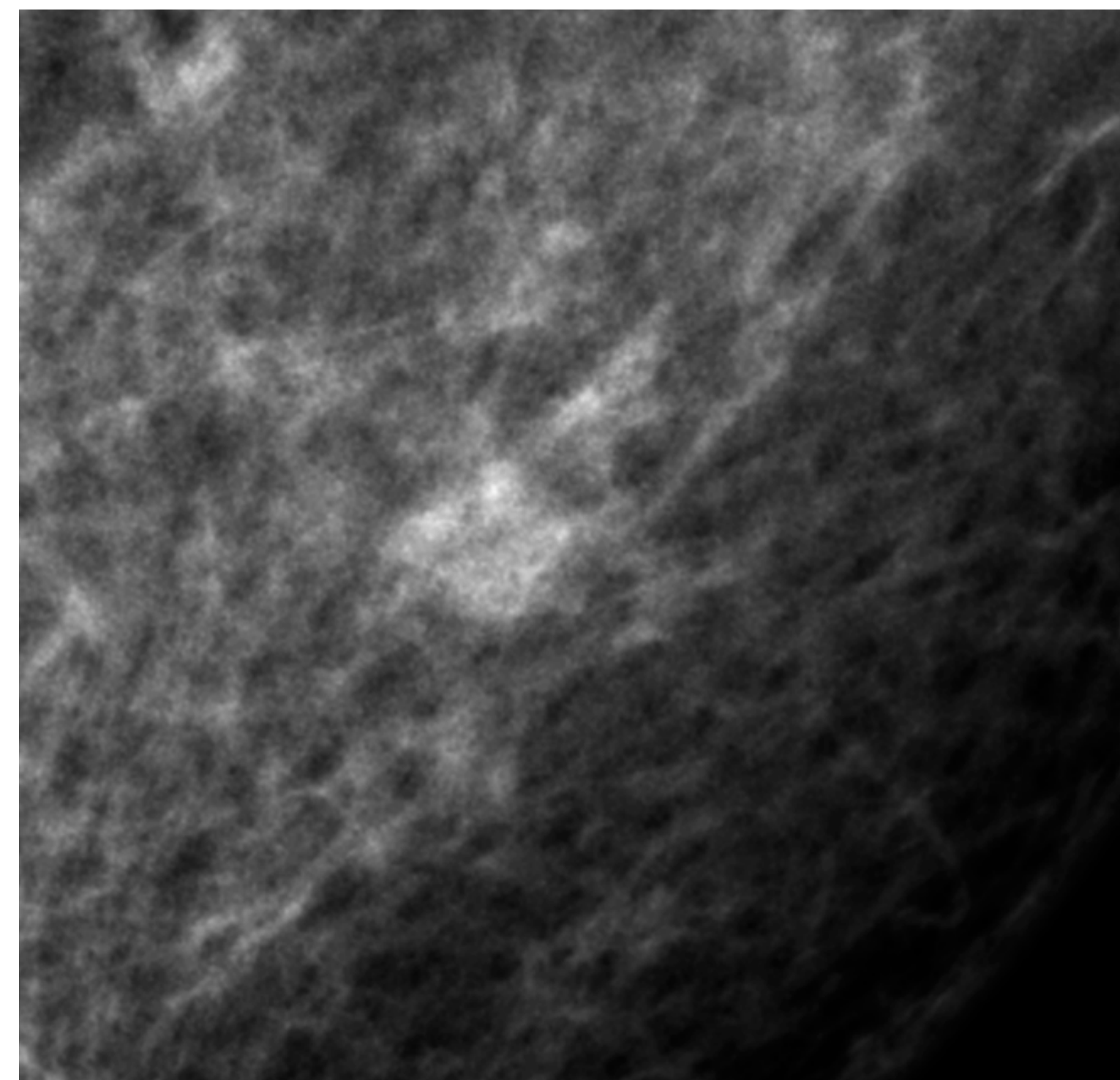
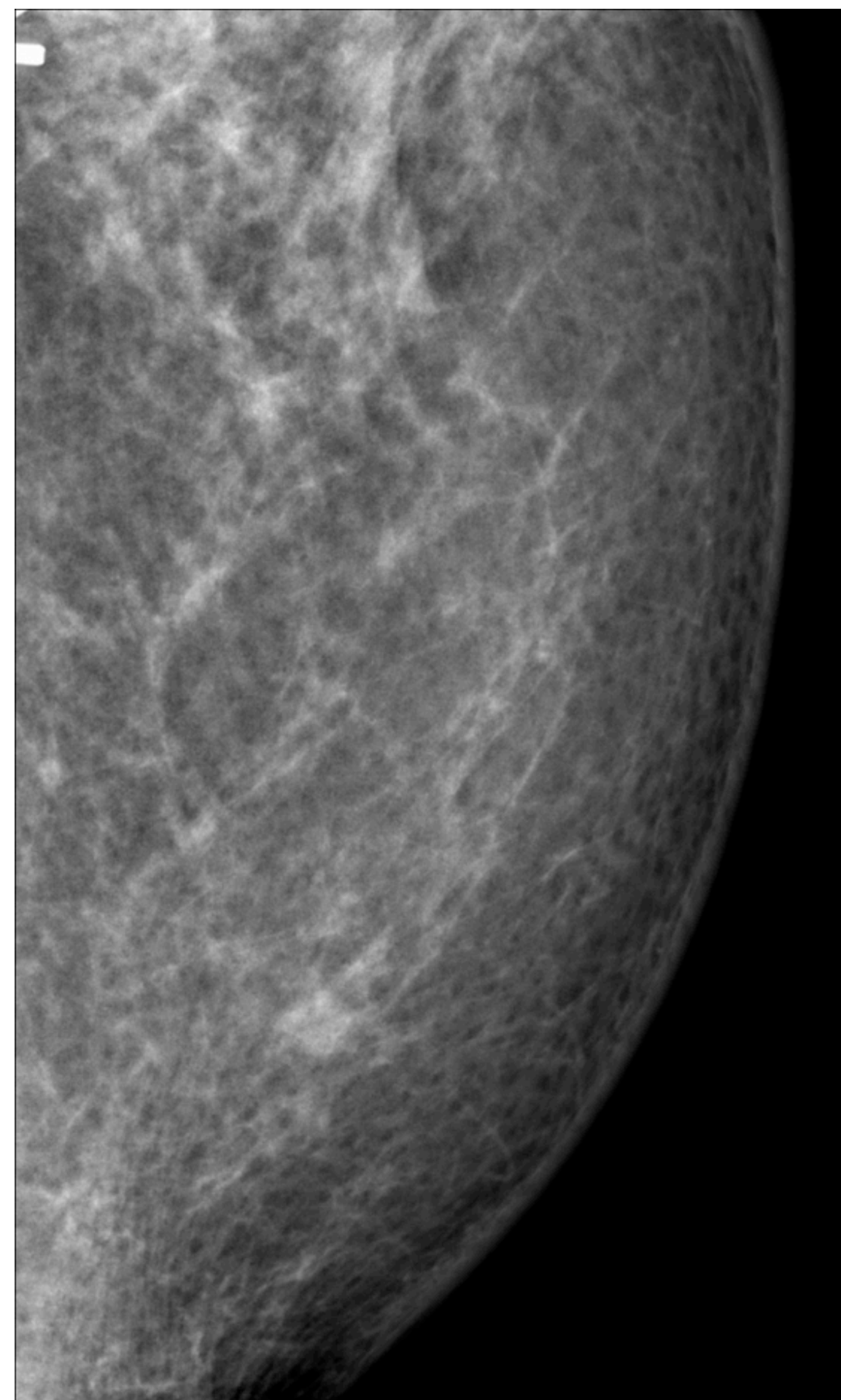
- CDU BI-RADS = 4b and CDU POM = 15%
- OA BI-RADS = 4c and POM = 90%
- Histology
  - Mass 1: IDC, grade II with grade 3 DCIS, -/-/-
  - Mass 2: IDC, grade II, -/-/-
  - Axillary LN = metastasis

OA facilitates upgrade to multicentric disease



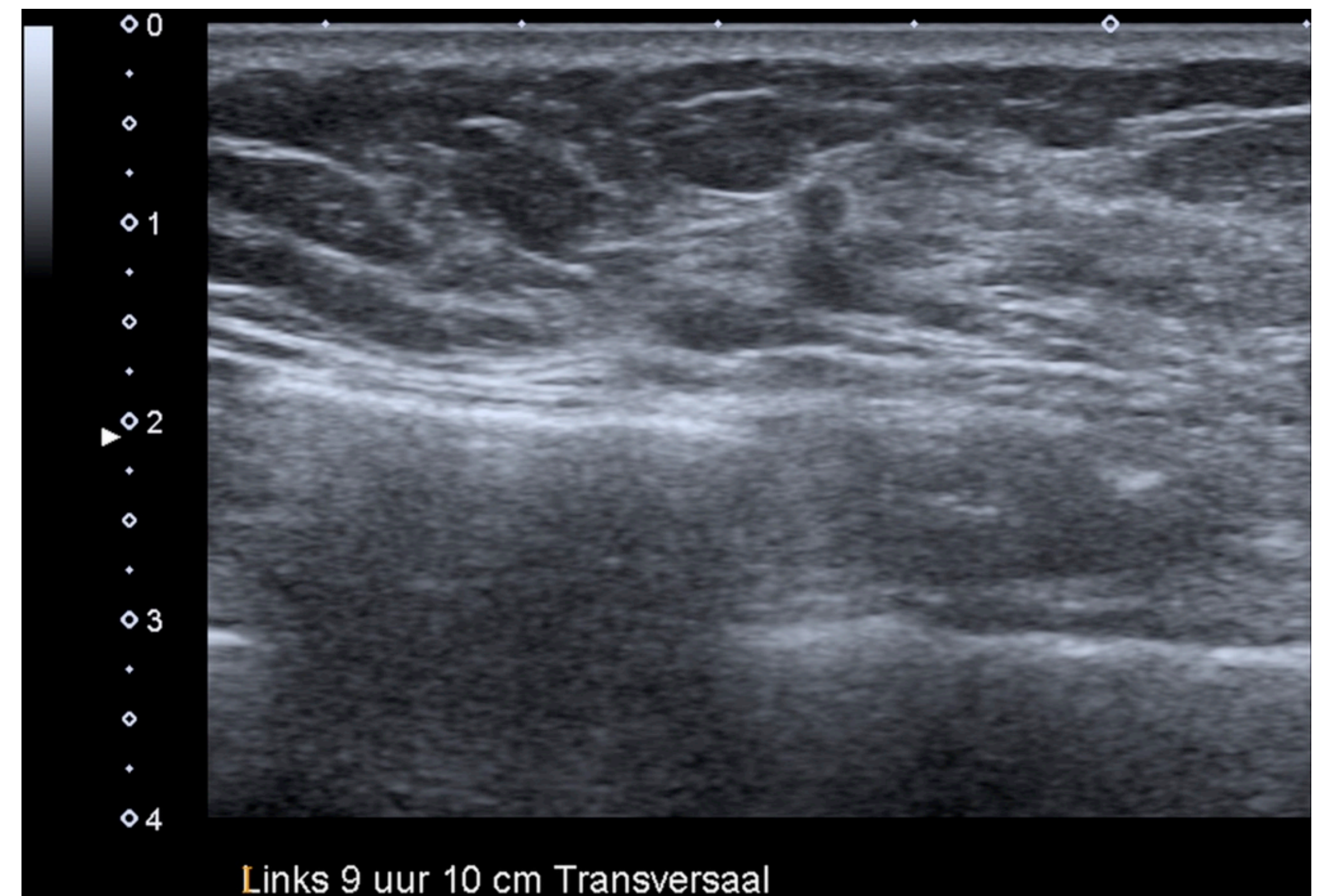
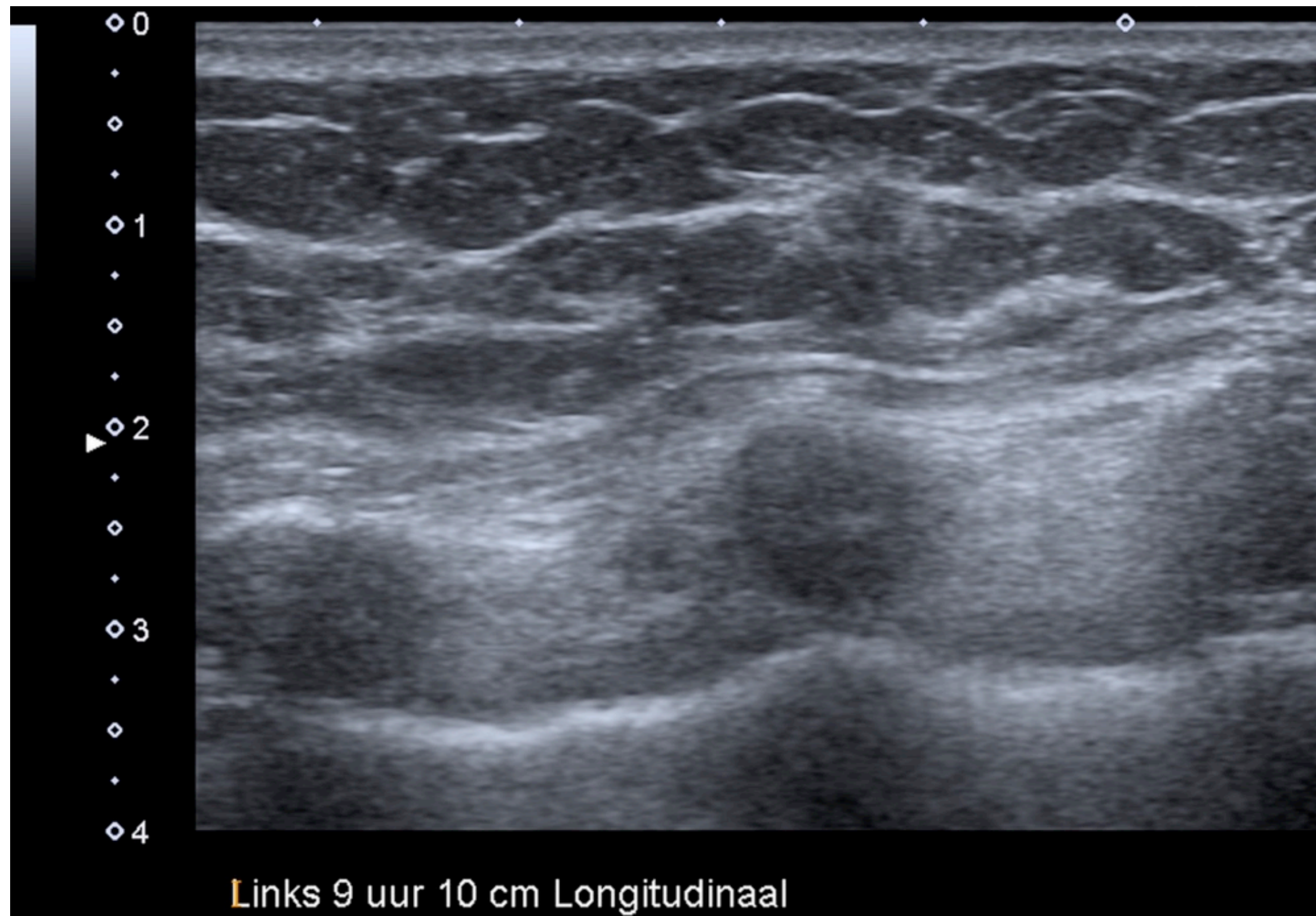
# Malignant mass upgrade case 2

# MAESTRO OA upgrade case 2 mammogram



# MAESTRO OA upgrade case 2

## Conventional diagnostic Ultrasound - 5mm solid mass



5mm mass

# MAESTRO OA upgrade case 2

## OA 4-on-1

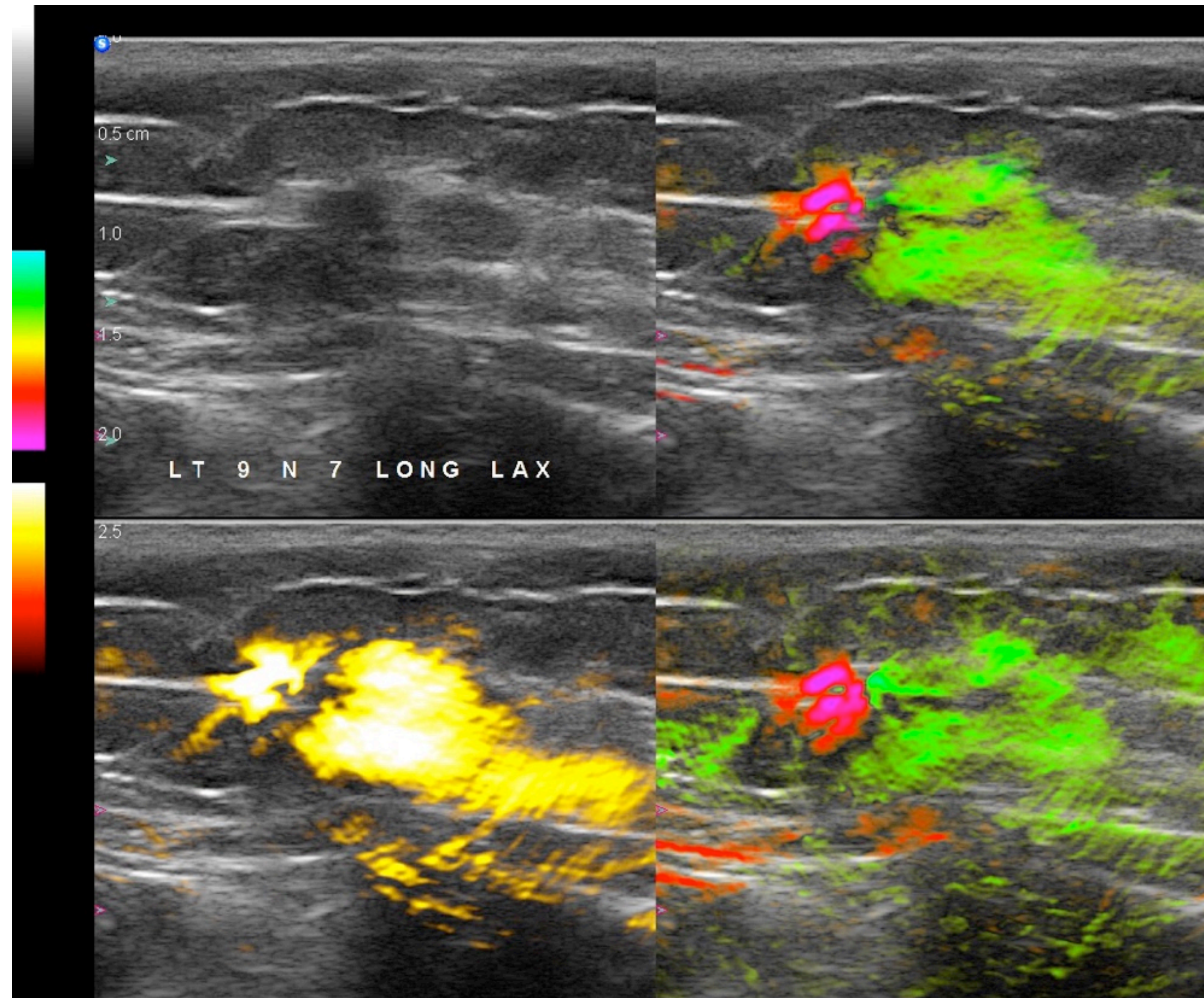
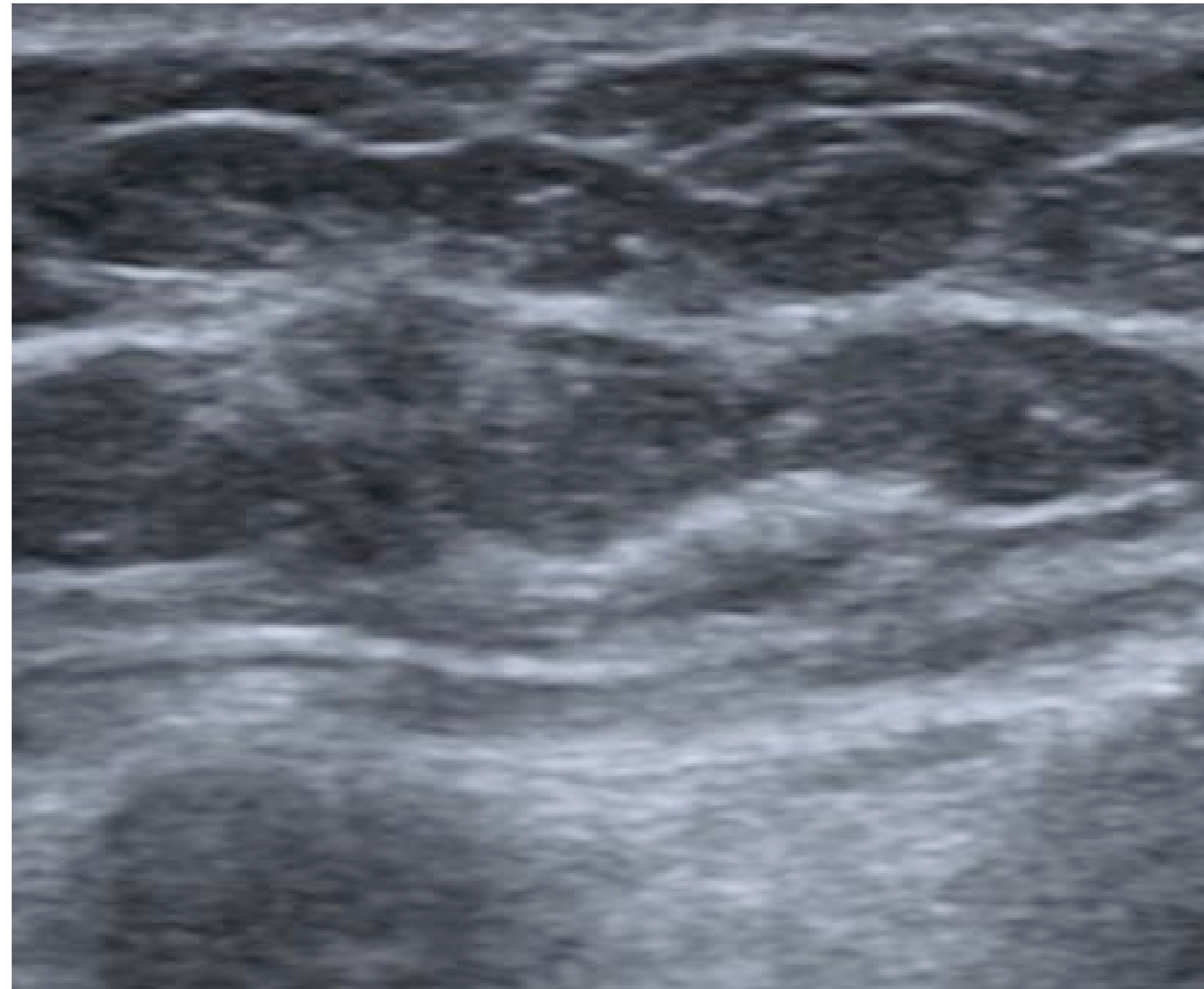


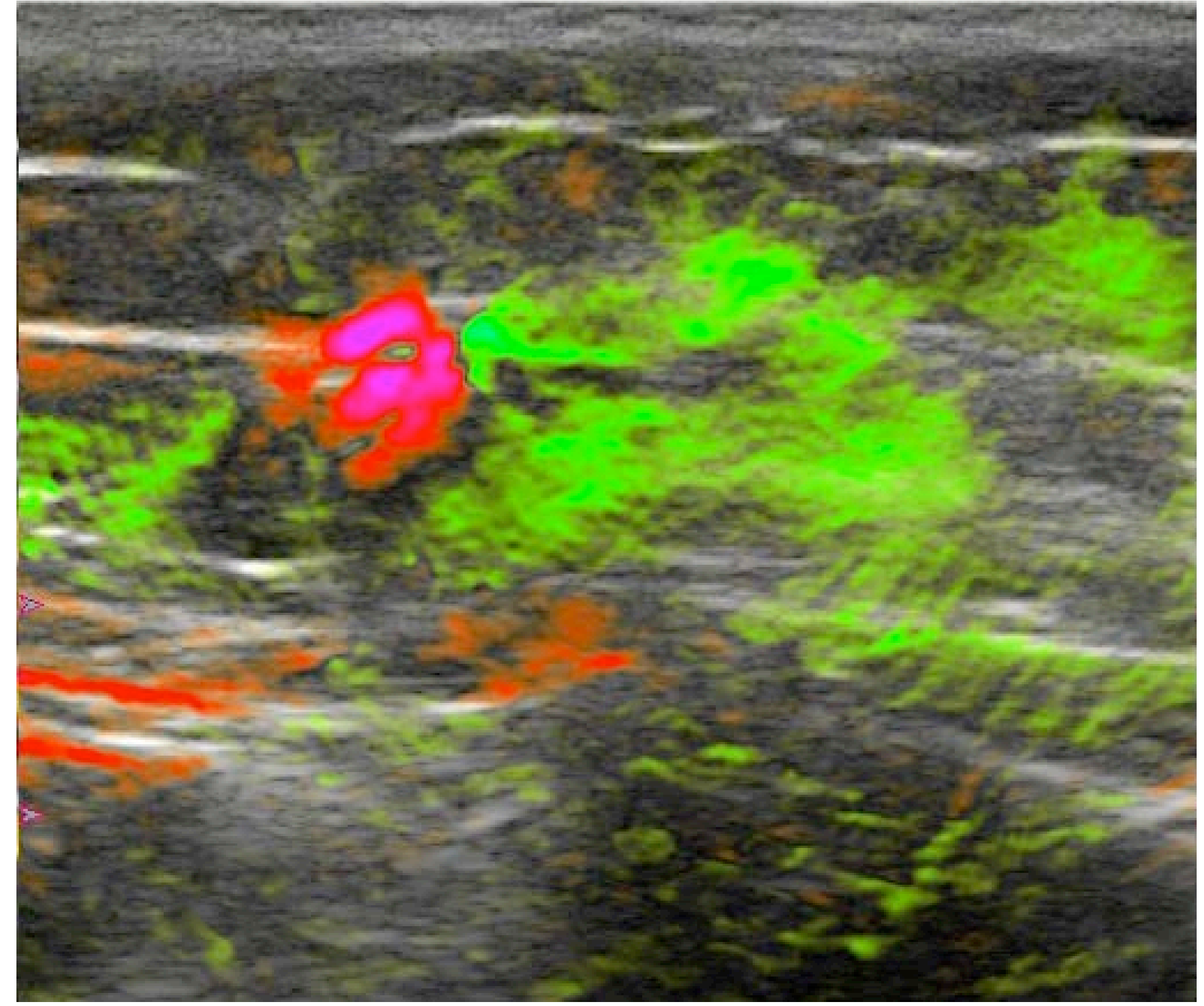
Image proprietary to Seno Medical Instruments, Inc.

# MAESTRO OA upgrade case 2

## OA 2-on-1 - intense deoxygenated blush



IUS



OA

# MAESTRO malignant mass upgrade case 2 readings and histology

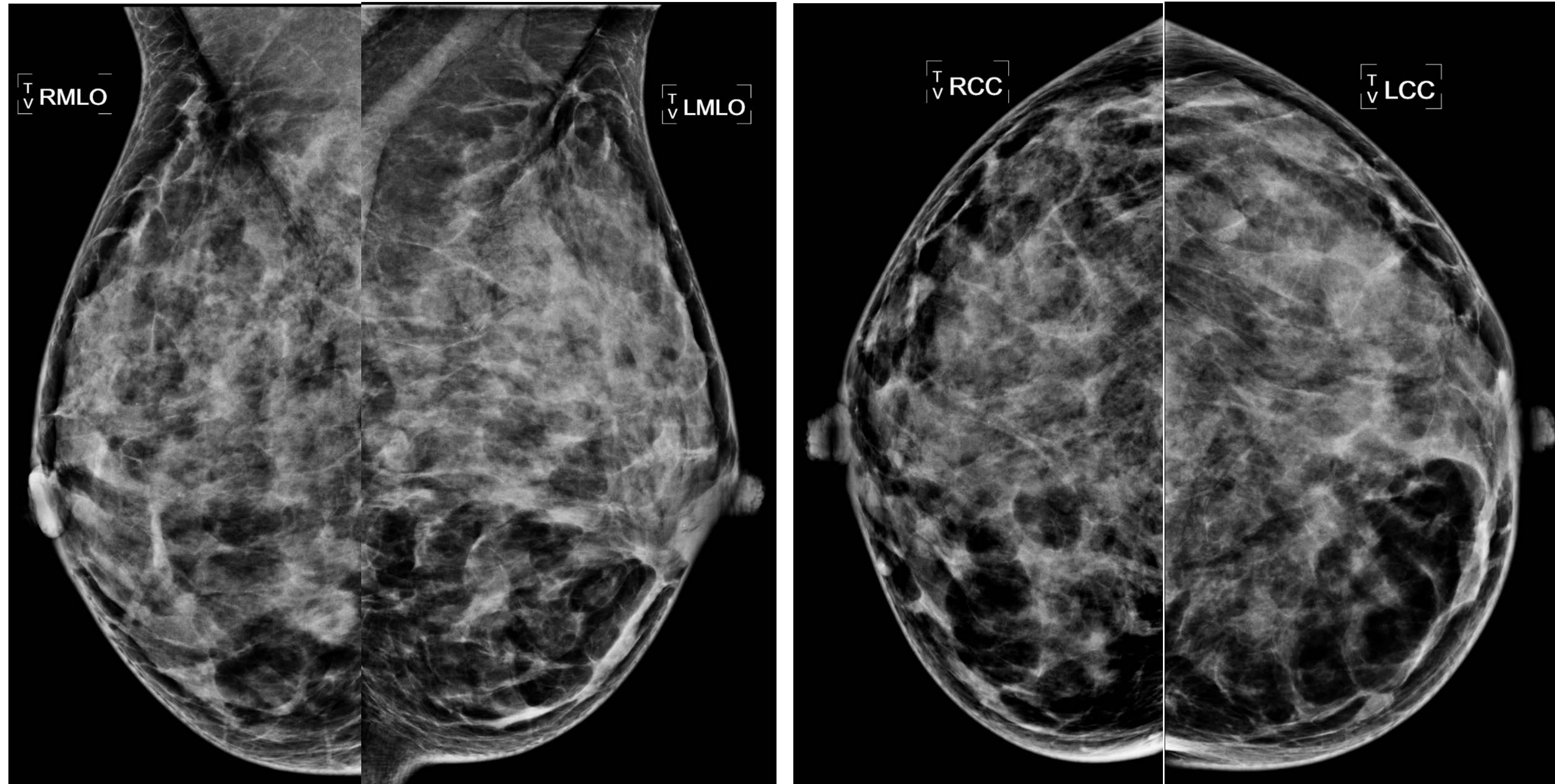
---

- CDU BI-RADS = 4b and CDU POM = 45%
- OA BI-RADS = 4c and OA POM = 90%
- Histology = 5 mm IDC, grade I (BRS 4)
  - ER+
  - PR+

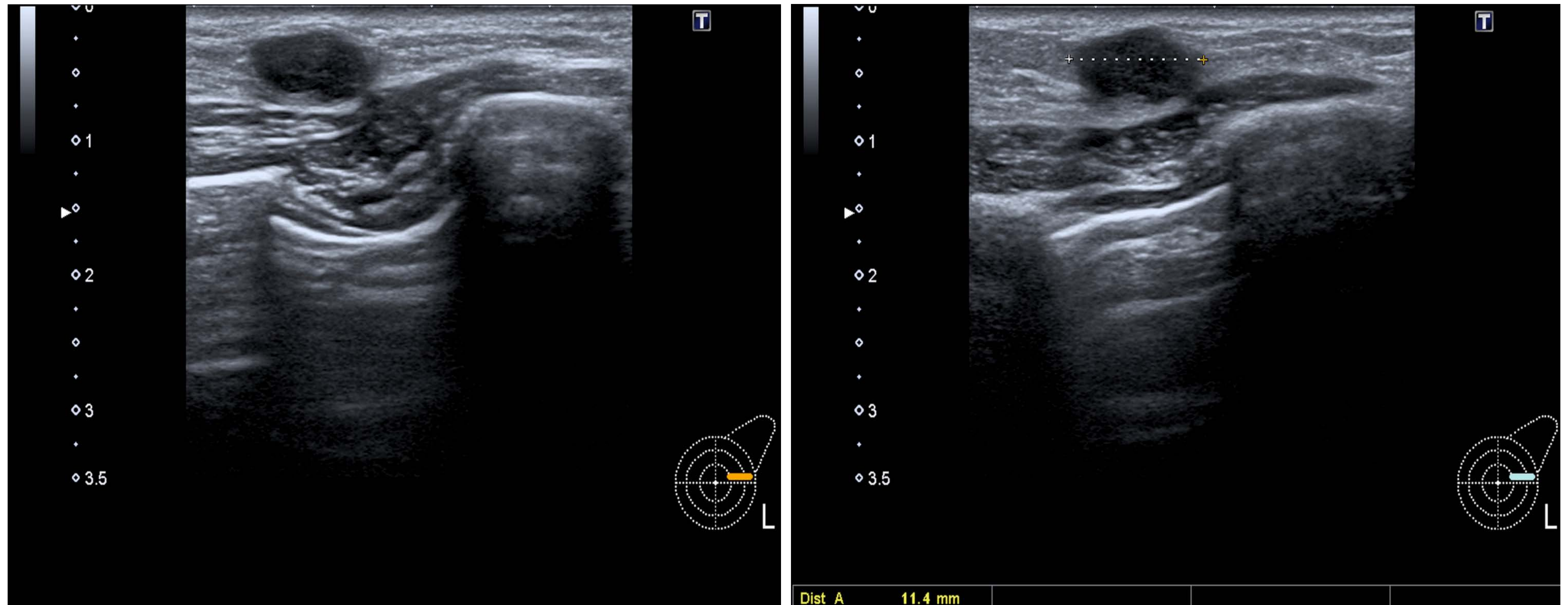


# Benign mass downgrade case 1

# MAESTRO – OA benign mass downgrade case 1 mammogram



# MAESTRO – OA benign mass downgrade case 1 conventional gray scale diagnostic ultrasound (CDU)



# MAESTRO – OA benign mass downgrade case 1

## OA 4-on-1

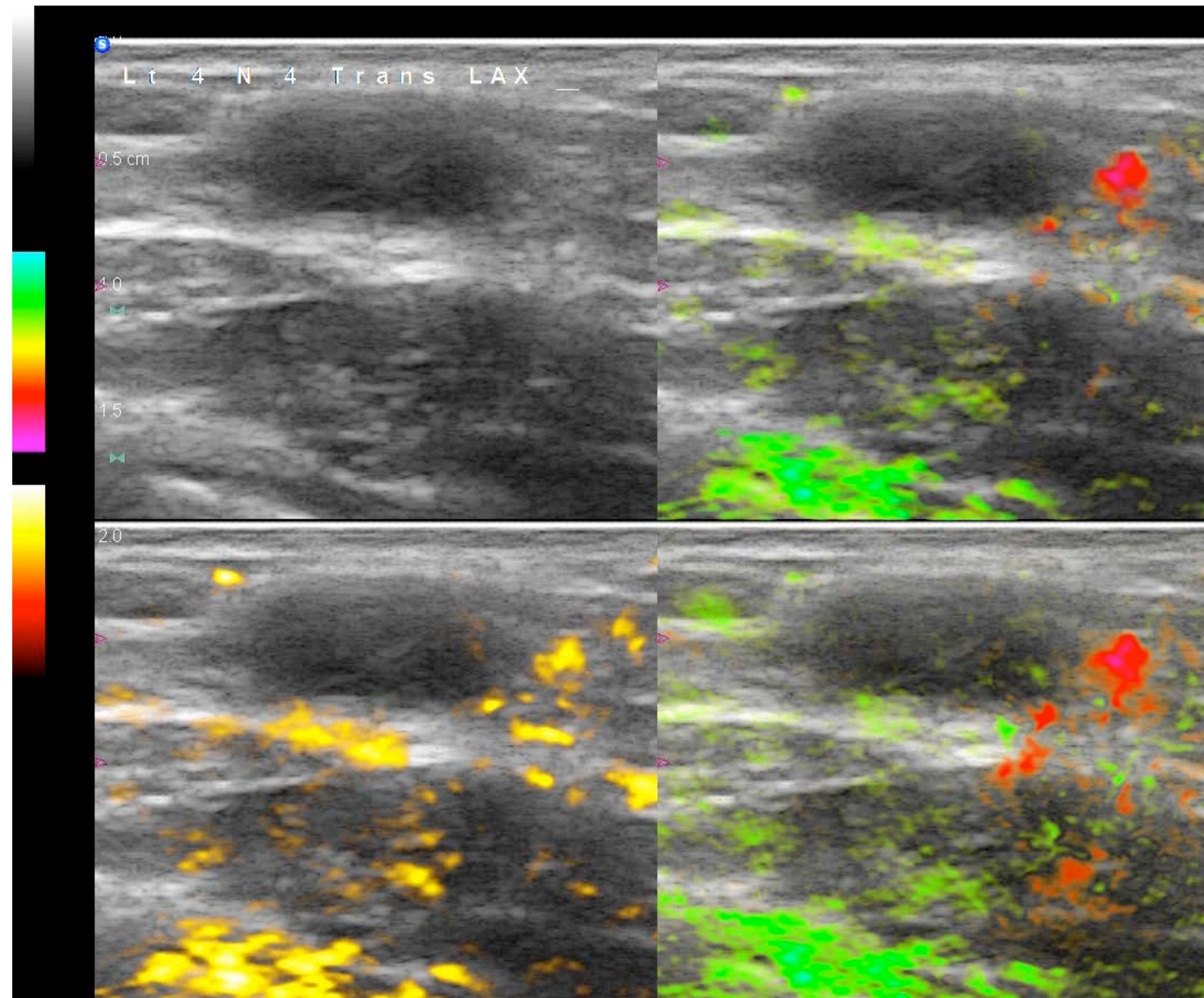
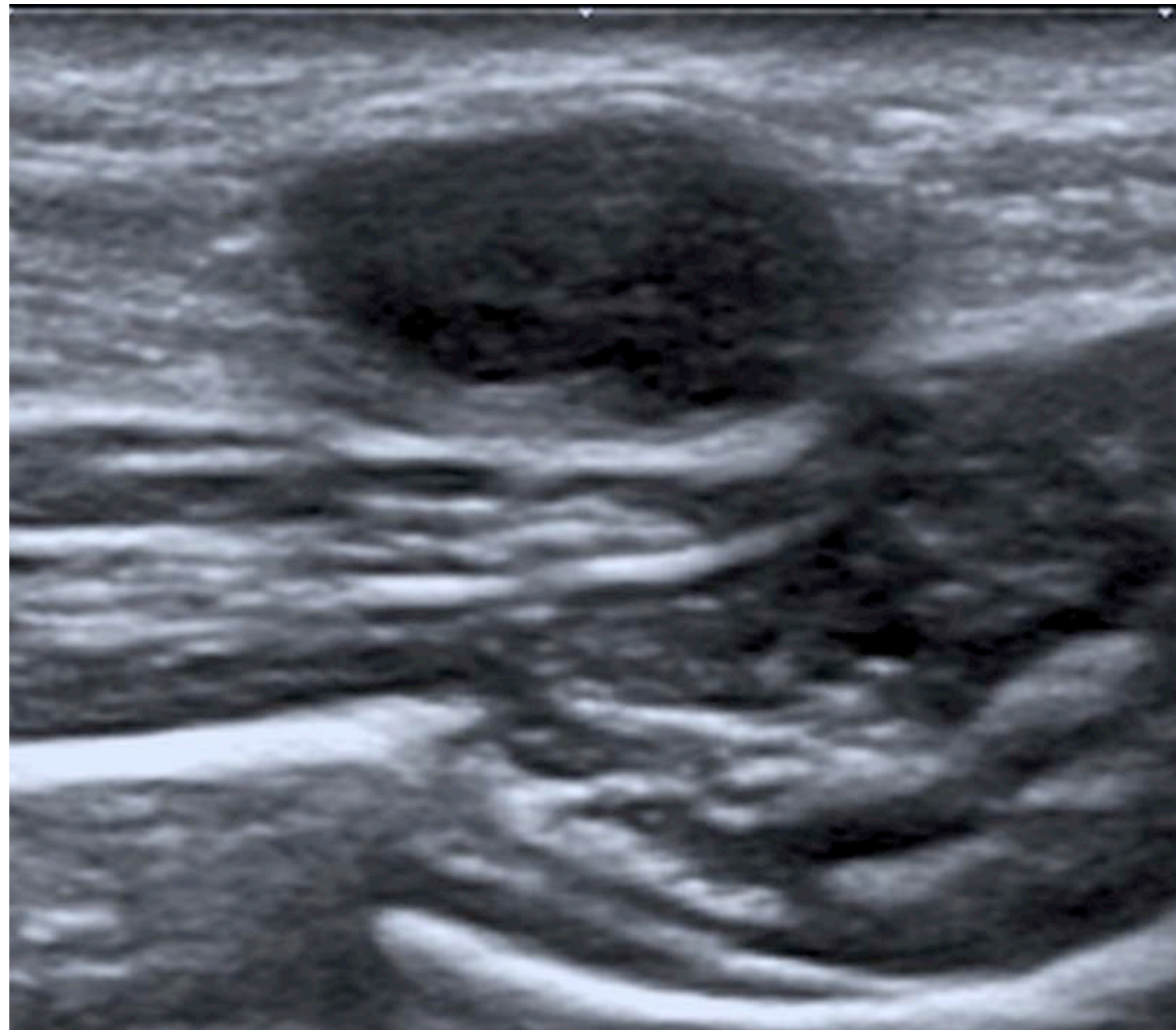


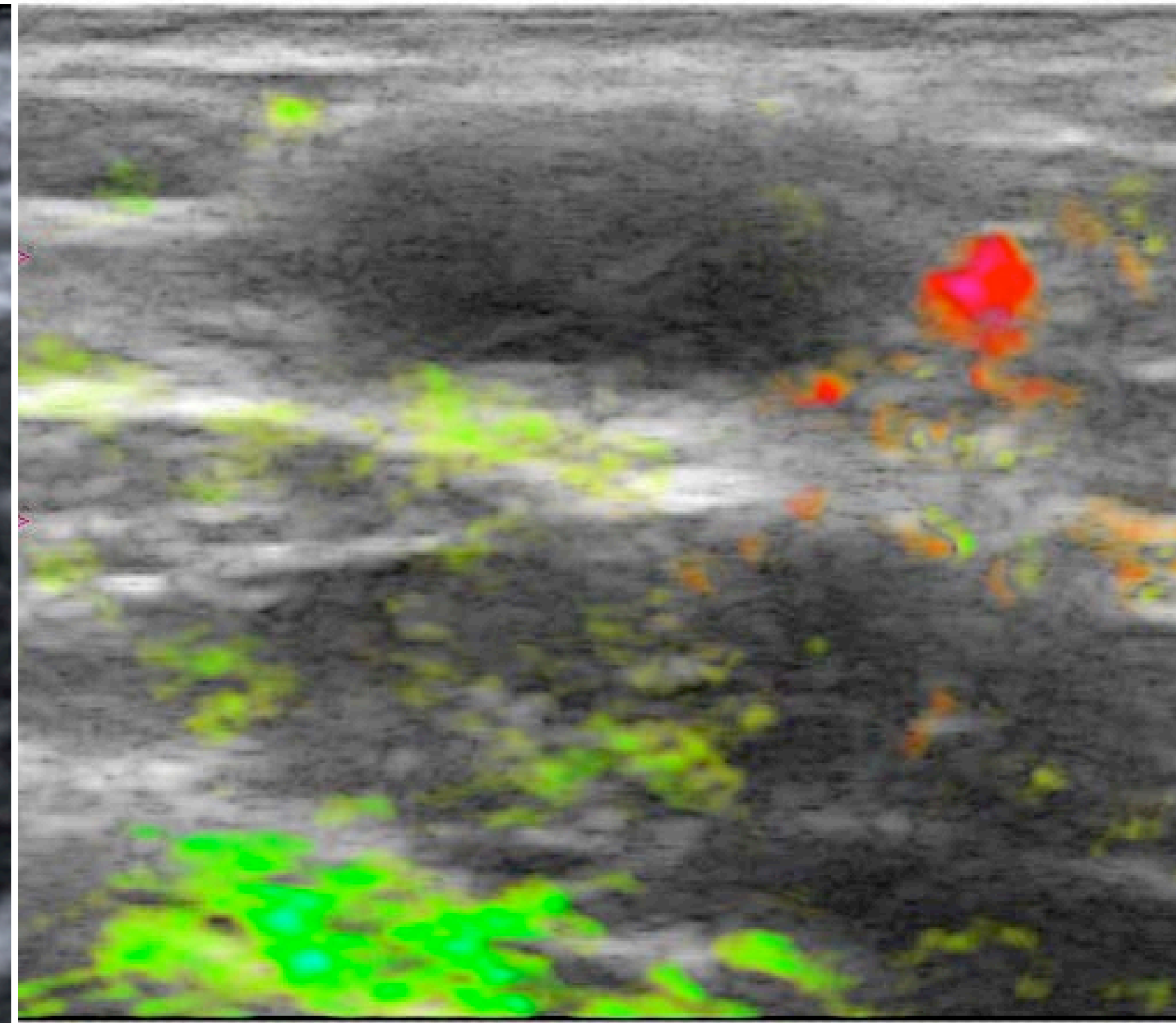
Image proprietary to Seno Medical Instruments, Inc.

# MAESTRO – OA benign mass downgrade case 1

## Imagio CDU vs. OA



CDU



OA

# MAESTRO – OA benign mass downgrade case 1

## readings and histology

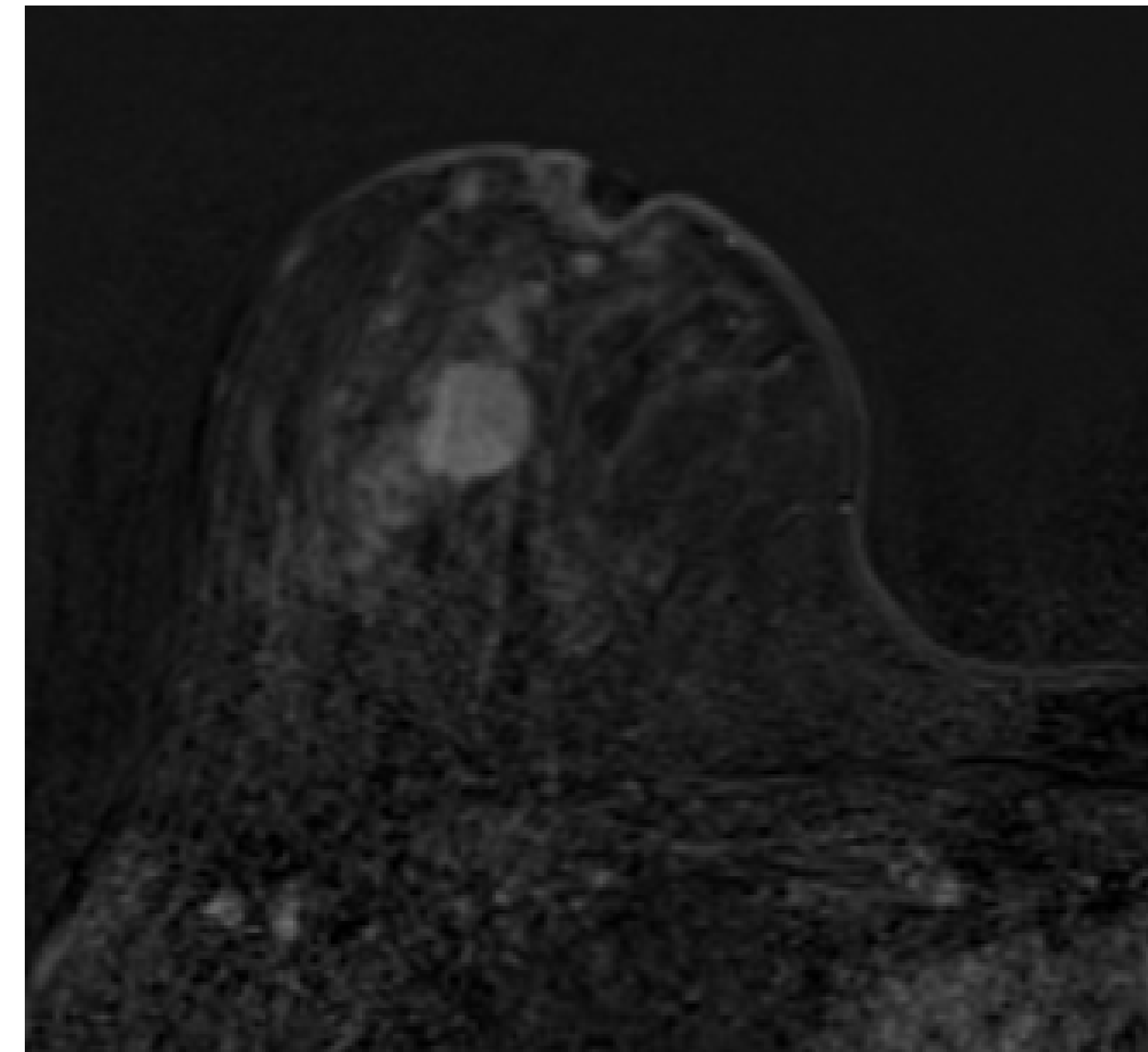
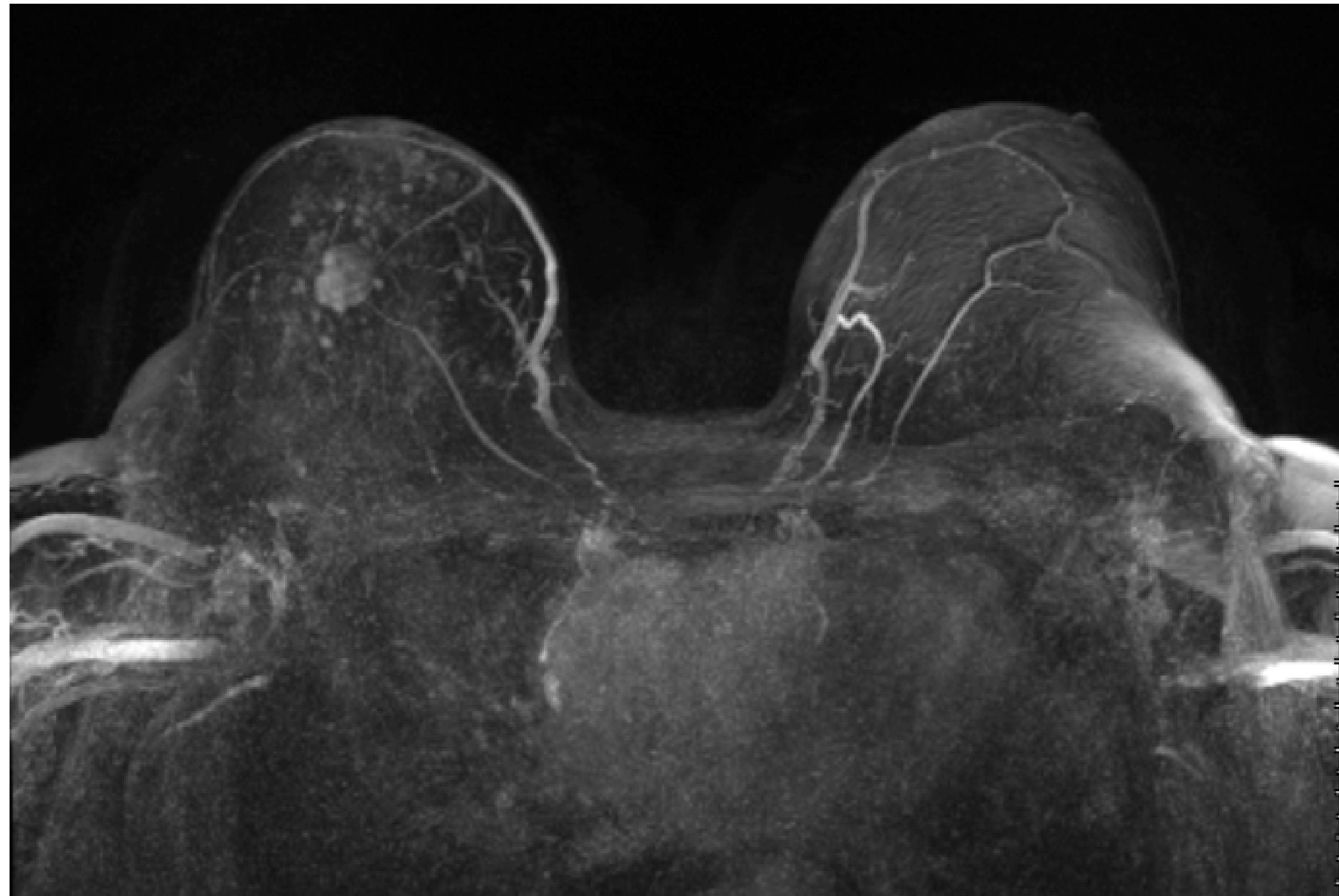
---

- CDU BI-RADS = 4a and CDU POM = 5%
- OA BI-RADS = 3 and OA POM = 2%
- Histology = benign fibroadenoma

# Benign mass downgrade case 2

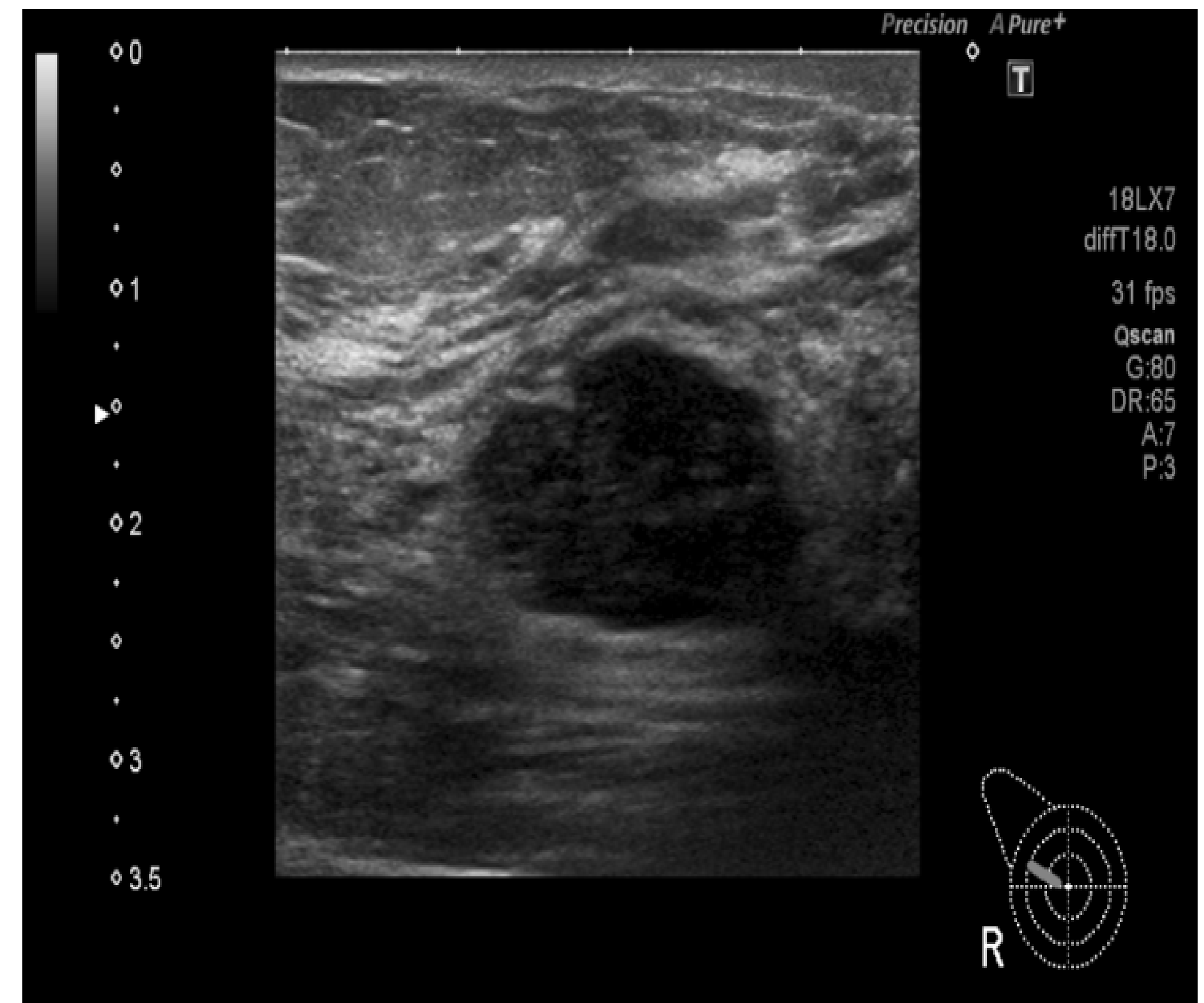
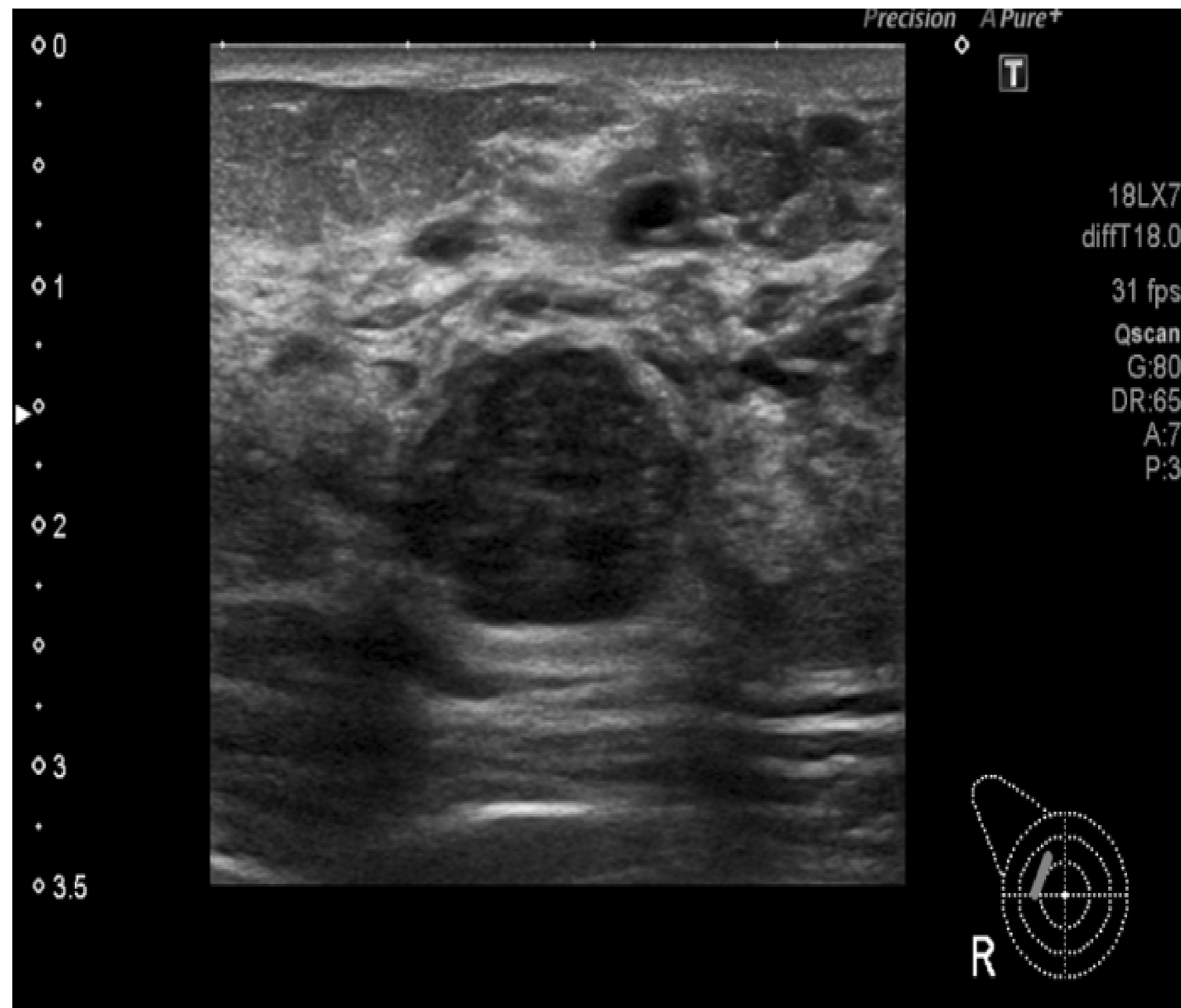
# MAESTRO – benign mass downgrade case 2

## Screening MRI





# MAESTRO – OA benign mass downgrade case 2 conventional gray scale diagnostic ultrasound (CDU)



# MAESTRO – OA benign mass downgrade case 2

## OA 6-on-1

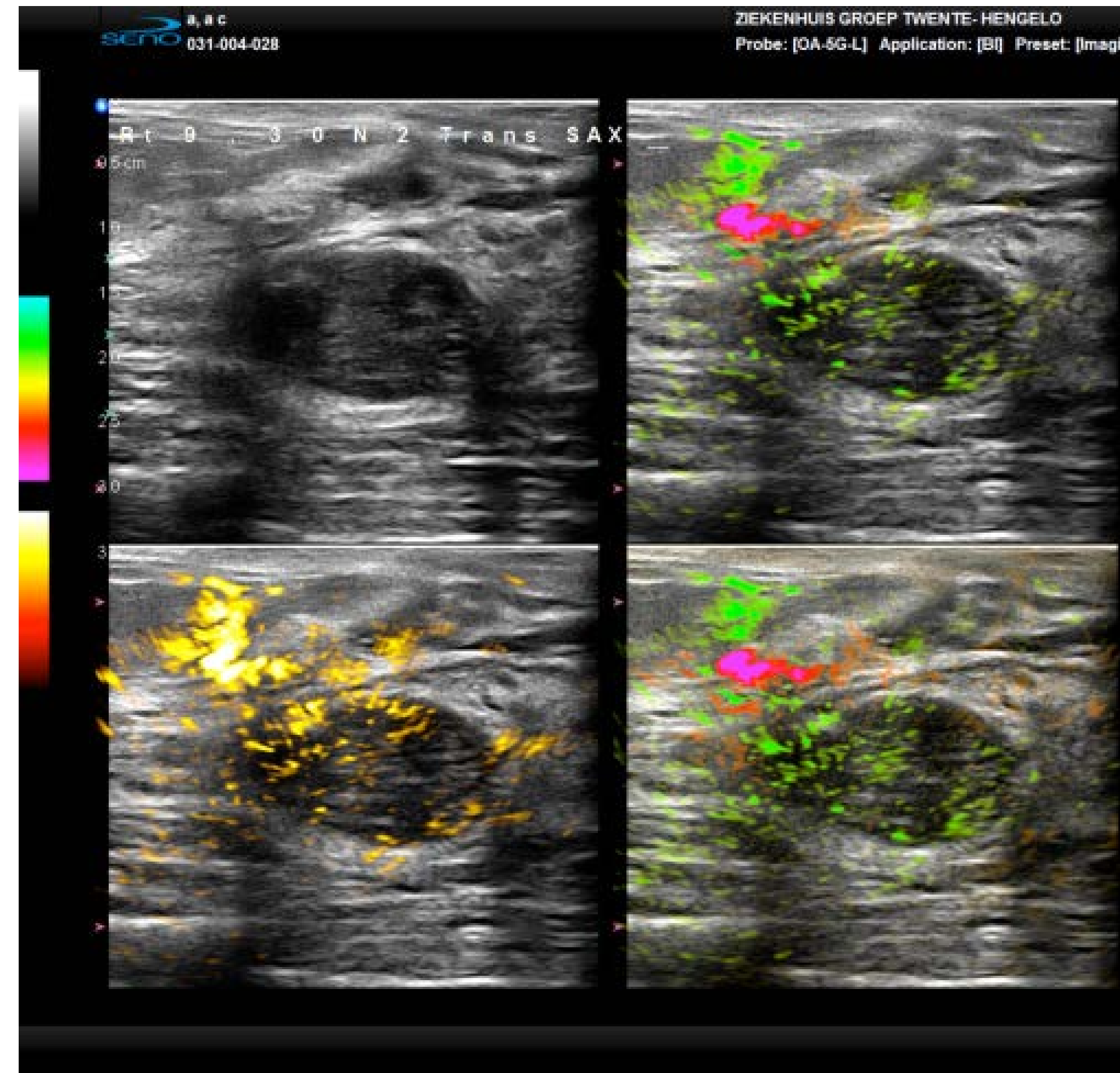


Image proprietary to Seno Medical Instruments, Inc.

# MAESTRO – OA benign mass downgrade case 2 readings and histology

---

- MRI BI-RADS = 4a and MRI POM = 10%
- CDU BI-RADS = 4a and CDU POM = 5%
- OA BI-RADS = 2 and OA POM = 0%
- Histology = benign fibroadenoma

# Summary

Imagio OA can be useful in:

- Downgrading POM and BI-RADS category of benign masses, with potential avoidance of negative biopsies and short interval imaging follow-up
- Upgrading the POM and BI-RADS category of malignant masses, increasing the certainty of malignancy prior to biopsy

# Thank you