

The terminology and diagnostic  
standard of non-mass lesion -  
*Hypoechoic area in the mammary gland*

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Medicine(JSUM) and the Japan Association of Breast and Thyroid  
Sonology(JABTS)

# Background

The mass is a main finding of the breast cancer on both mammography and ultrasonography. But as the mammographic cancer screening has popularized, many small or non-invasive cancers have been detected. Some of them can't be recognized as “mass”, and appear only “hypoechoic area”. And before now, we have experienced many cases that are felt as mass on palpation, but only hypoechoic glandular changes can be seen on the sonograms. We have called them as “*hypoechoic area in the mammary gland*”.

Now, that is ranked one of the findings of non-mass-like lesions and defined to the ultrasonographic finding by the committees of both the Japan Society of Ultrasound in Medicine (JSUM) and the Japan Association of Breast and Thyroid Sonology (JABTS).

# Definition

The hypoechoic area with different properties compared with surrounding or corresponding area of the opposite breast, but it isn't recognized as a mass on the ultrasonography.

# Hypoechoic area in the mammary gland

## a) spotted or mottled hypoechoic area

Small hypoechoic areas are seen forming one lesion.

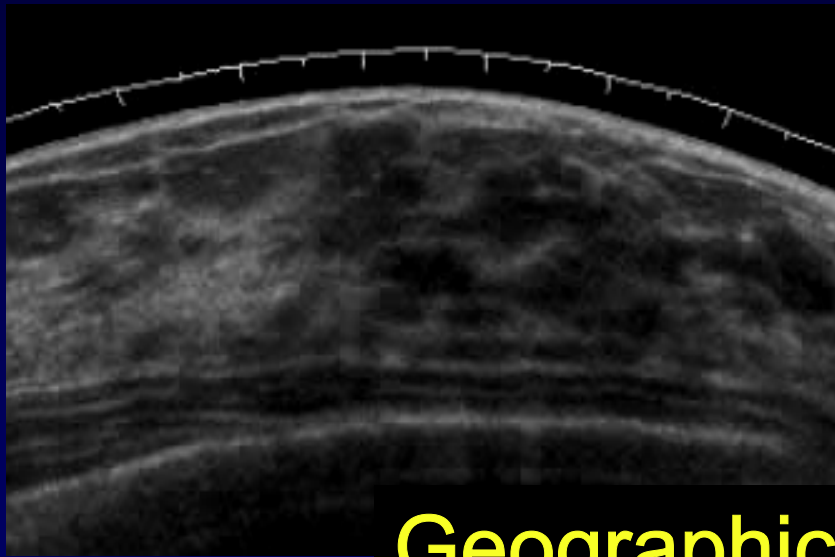
## b) geographic hypoechoic area

Many small hypoechoic areas grow together and can be seen as geographic shape.

## c) hypoechoic area with indistinct or ill-defined border

The hypoechoic area can't be seen as "mass" due to their ill-defined margins.

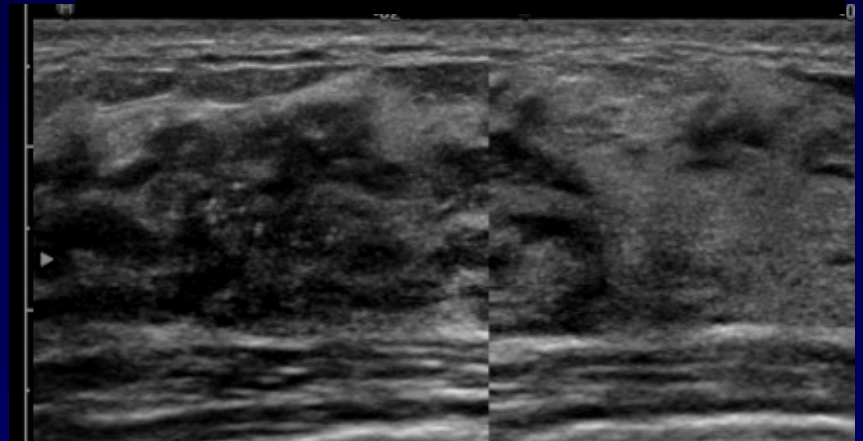
# Hypoechoic area in mammary gland



**Geographic**



**S p o t t e d o r m o r e**



**Indistinct or ill-  
defined**

If we waver in judgment it's existence, we should compare it with the contra- or ipsi-lateral mammary gland.

# Diseases possibly detected as hypoechoic area in the mammary gland

- IDC, ILC, inflammatory carcinoma
- Intraductal proliferative lesions
  - DCIS, IDC with a predominant intraductal component, usual ductal hyperplasia and atypical ductal hyperplasia
- Benign epithelial proliferations
  - Adenosis including variants,
  - Radial Scar/Sclerosing complex lesion
- Mastitis
  - lymphocytic mastitis, acute mastitis

# Assessment Category

Spotted or mottled, geographic,  
indistinct hypoechoic areas



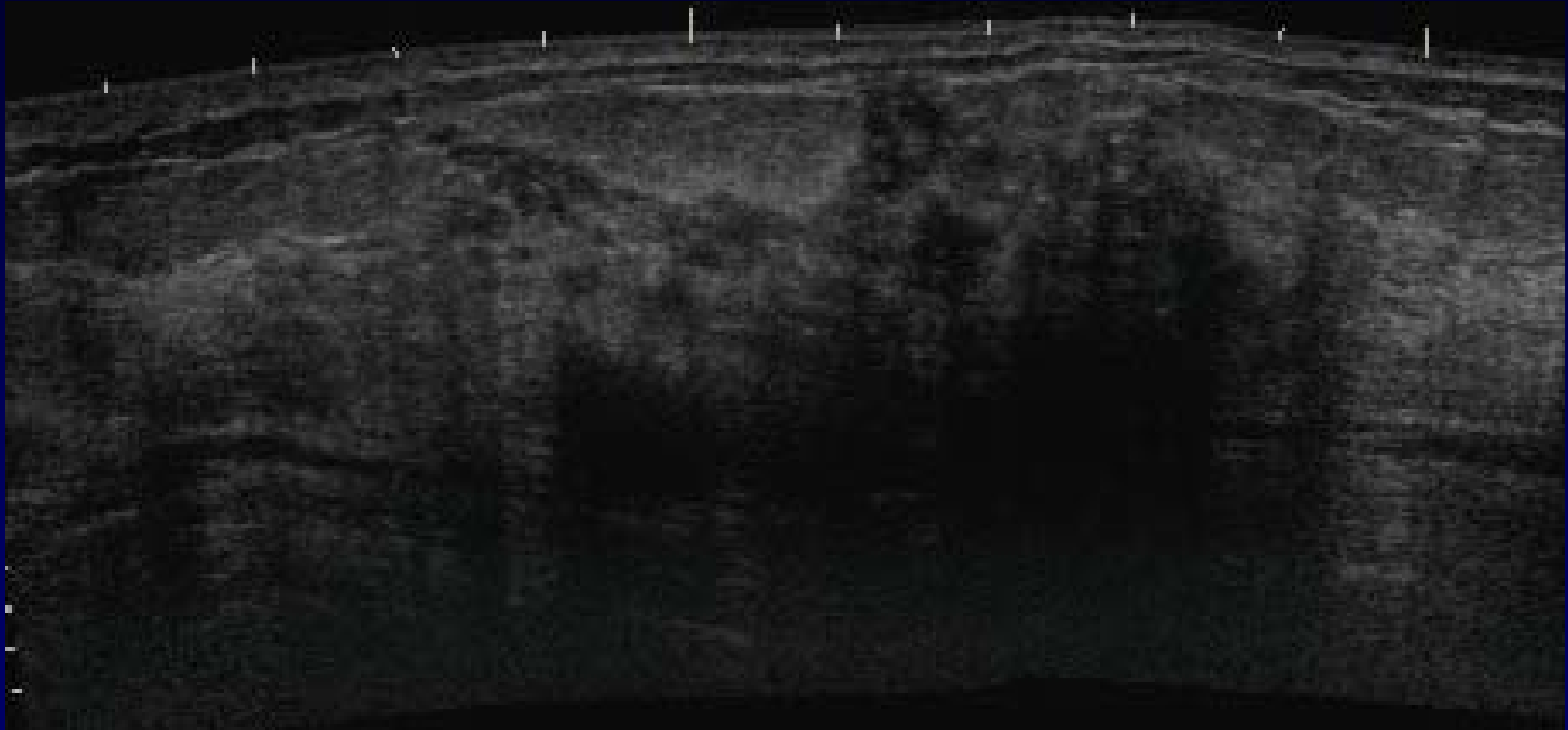
With echogenic foci

**C4**

**C4,5**

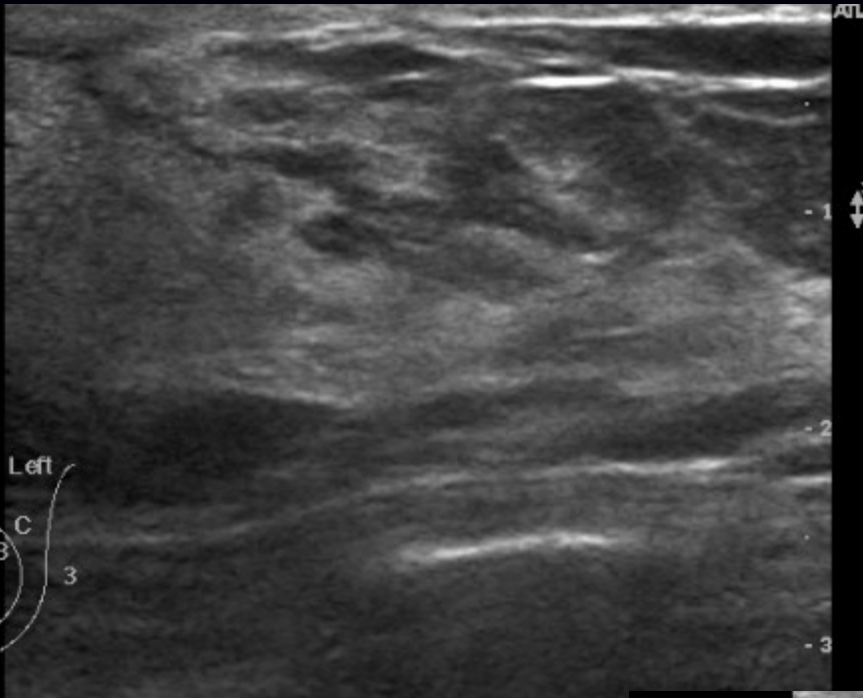
Vascularity and elasticity are also important information  
assessment

the hypoechic area with echogenic foci

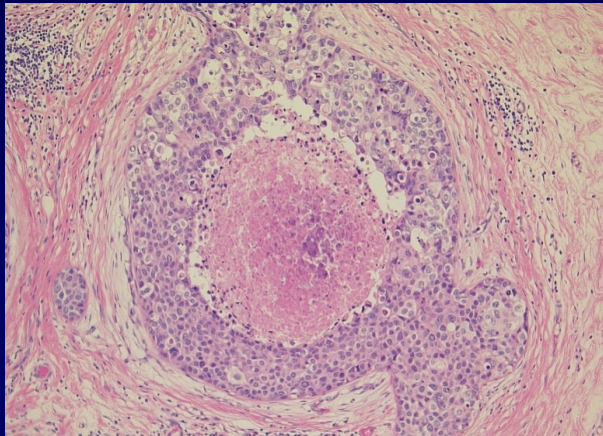




Map 4  
170dB/C 4  
Persist Off  
2D Opt:FSCT  
Fr Rate:Surv  
SonoCT™  
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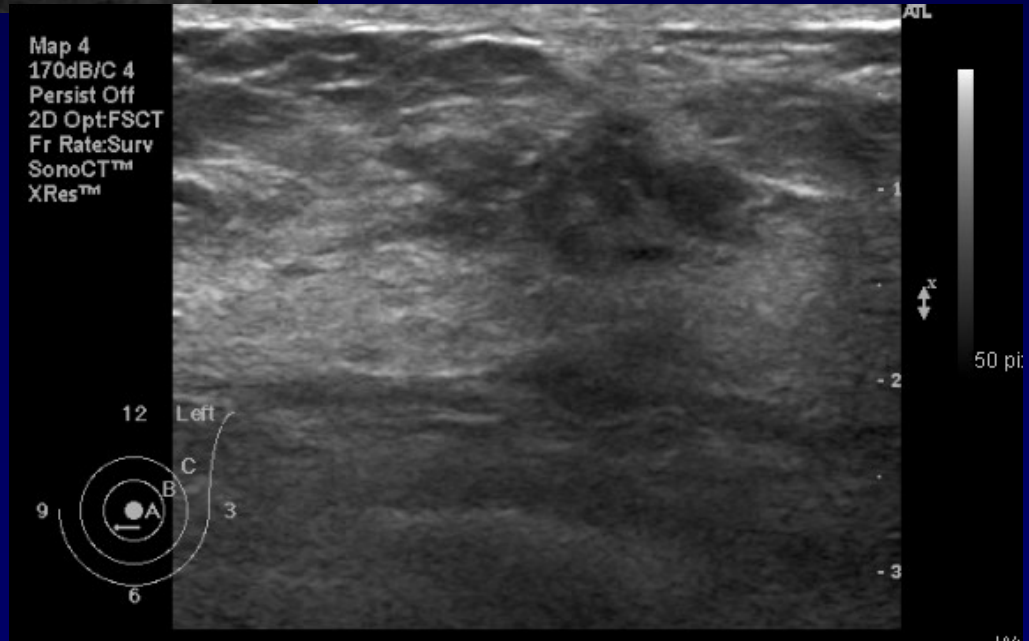


duct dilatation +  
geographic or  
indistinct  
hypoechoic area

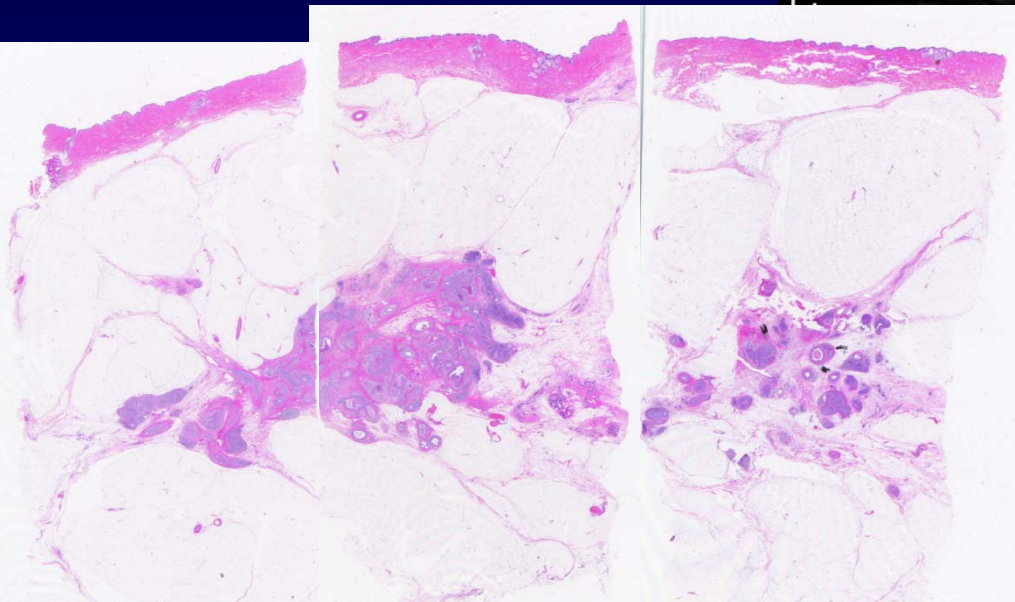
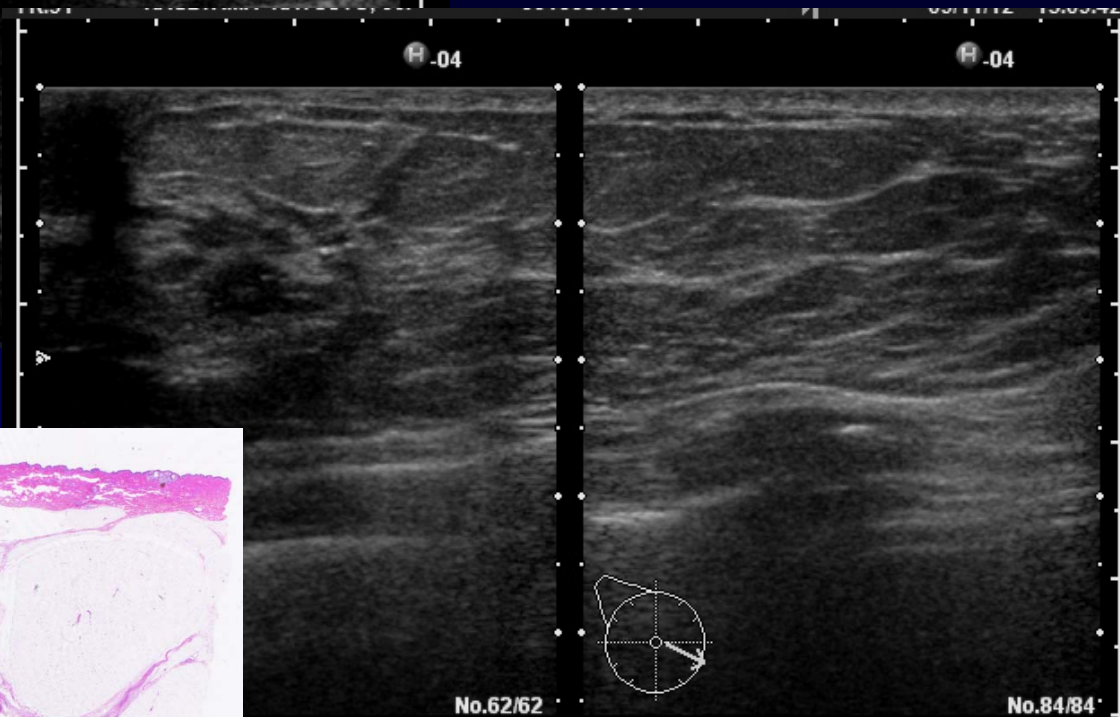
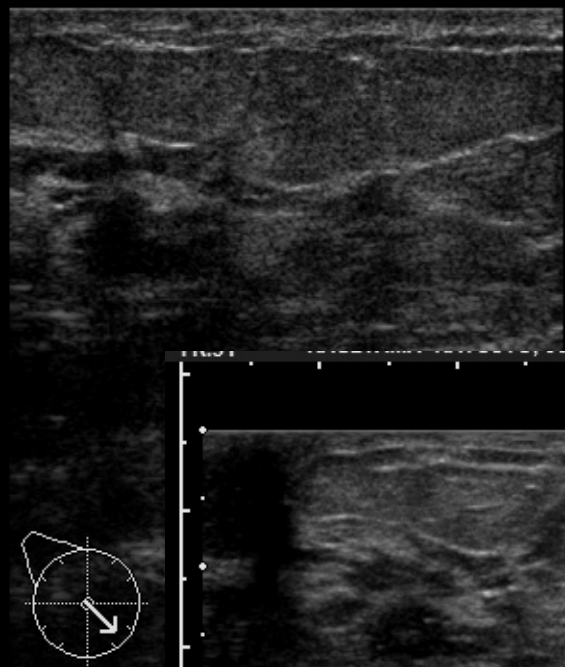
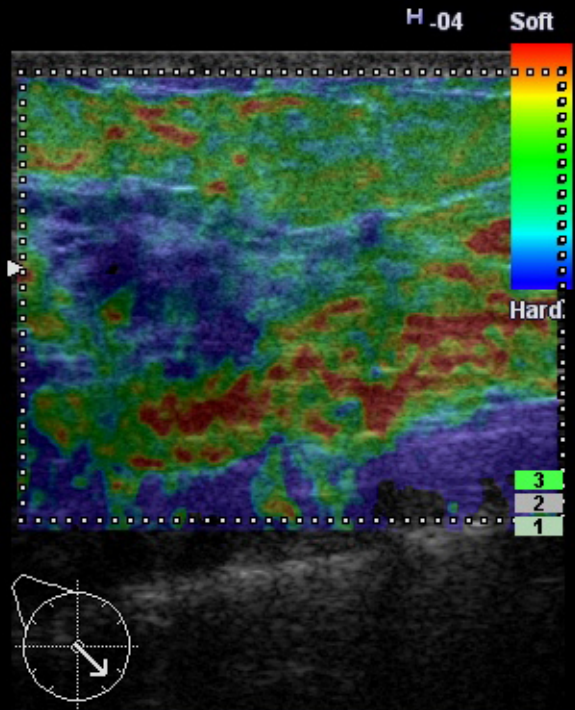


DCIS

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SonoCT™  
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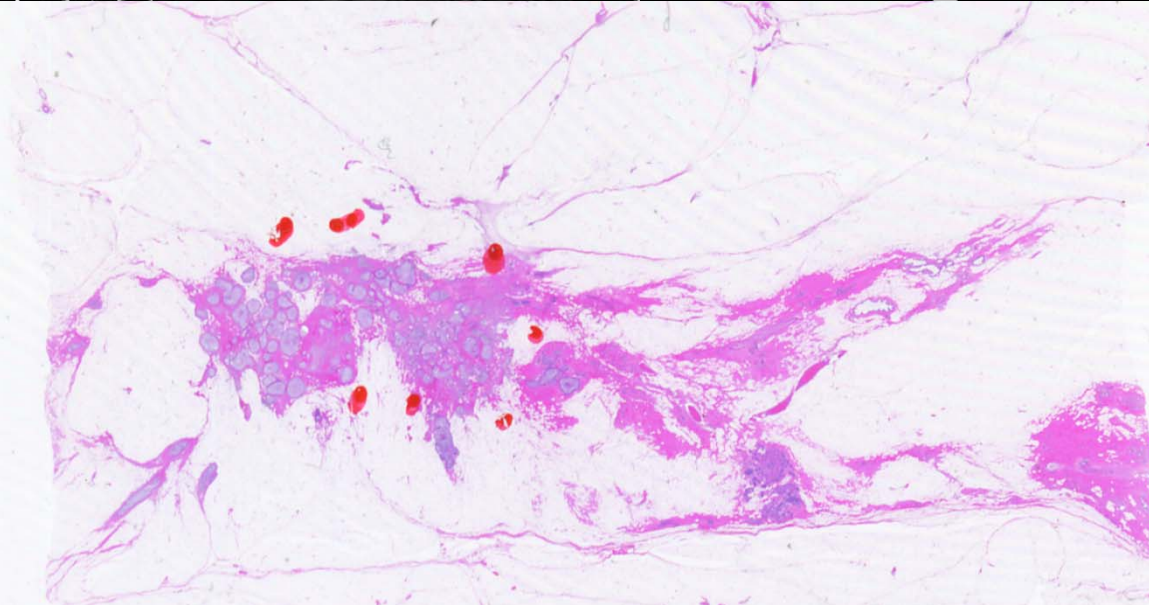
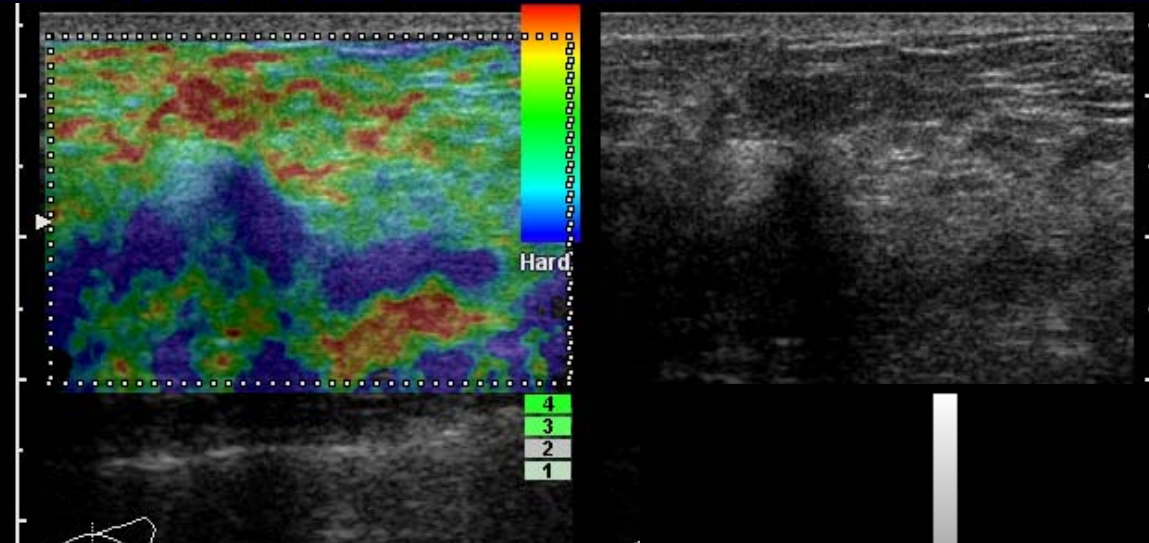
Geographic and indistinct hypoechoic area



multiple small foci of invasive ductal carcinoma associated with wide-spread, high-grade DCIS



# Indistinct hypoechoic area + Distortion



Invasive ductal carcinoma with wide spread intraductal component with radial scar like configurations

# Discussion

Many DCIS and IDC with a predominant intraductal component have been detected as the hypoechoic area in the mammary gland. And many benign lesions such as various epithelial proliferations and mastitis also have been found.

So, we emphasize the importance of the differential diagnosis of these lesions by their distribution and other associate signs.

Now, the term of the “hypoechoic areas in the mammary gland” has been spreading in Japan, but it is the question that the strict same sense of this term may be imaged by all ultrasonographers.

# Conclusion

The *hypoechoic area in the mammary gland* is a very important finding for detect and recode the non-mass like lesion on ultrasonography.

We have to decide and disperse fine criteria for the practical screening or examinations as soon as possible.



*Thank you for your attention !*



*Nagoya Castle in Pink Ribbon Lighting-up*