
KAMPA CHA RLES BRIDGE
LANDING STAGE DEPARTURE BOAT



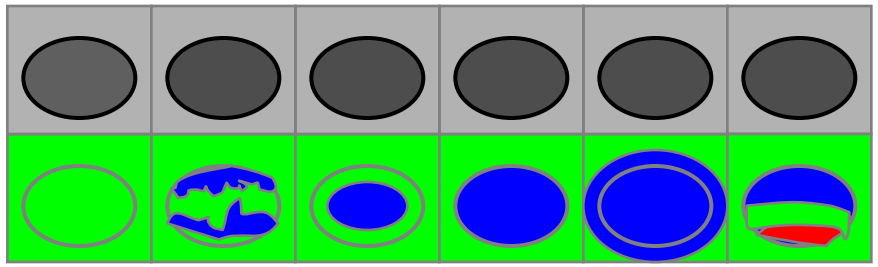
Breast



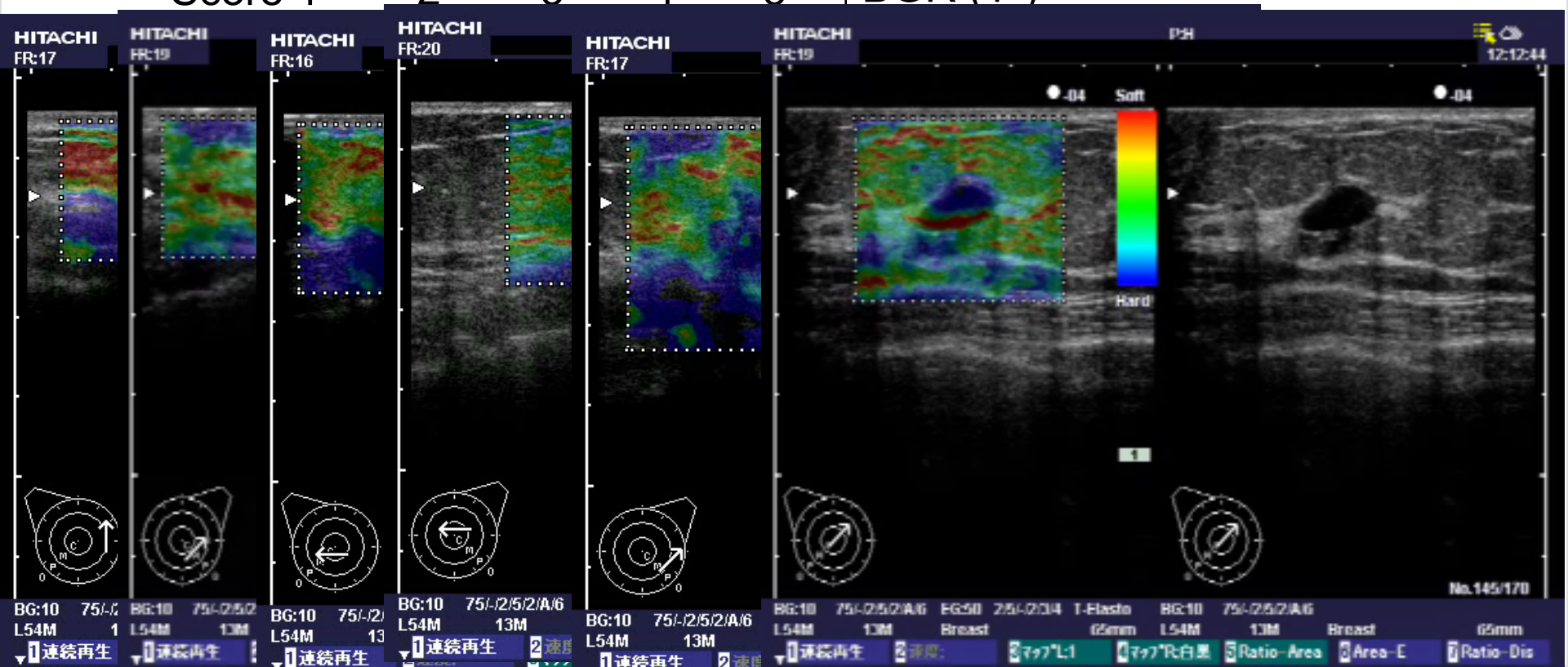
Author: Kukulski

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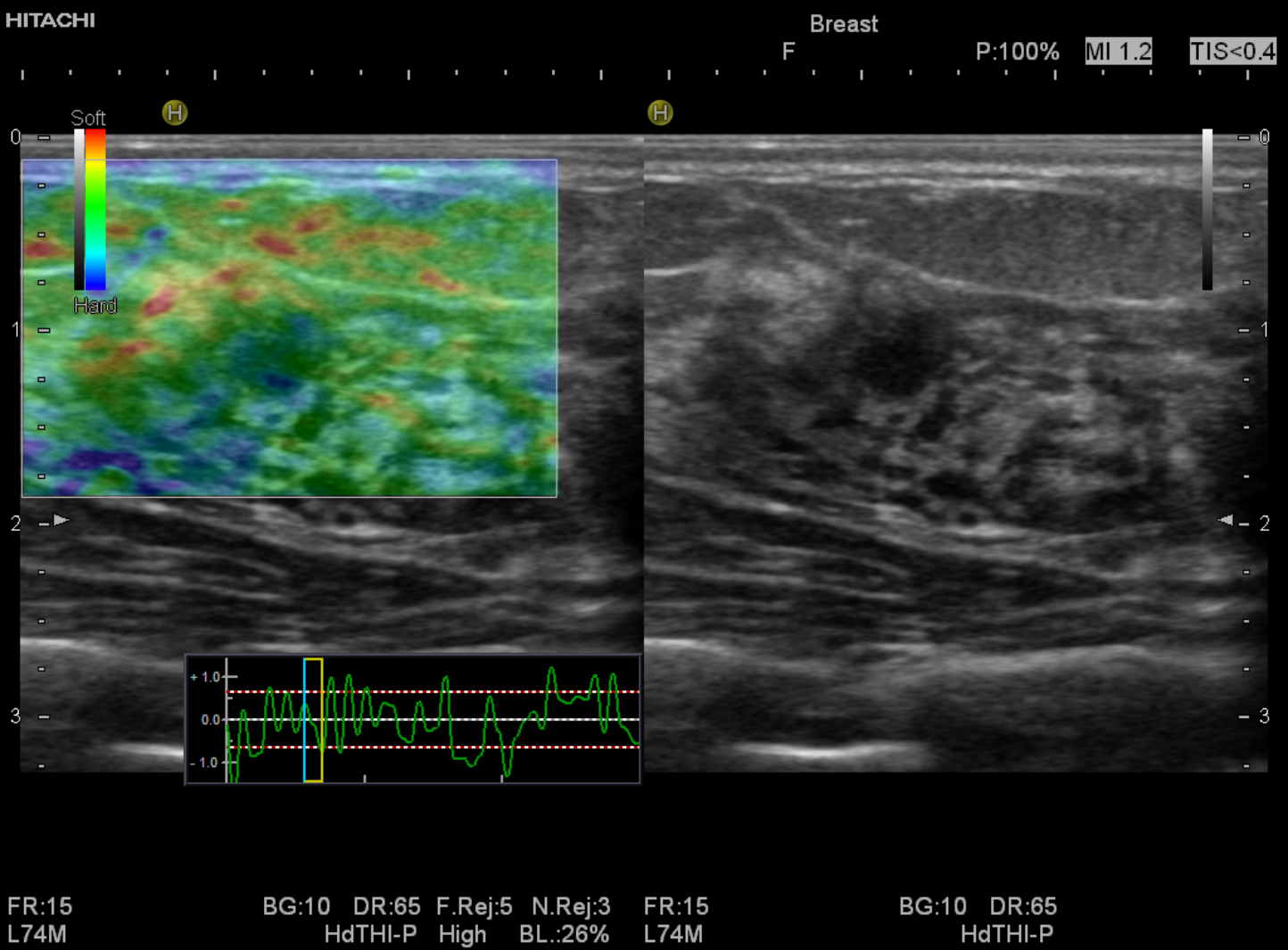
Tsukuba Elasticity Score



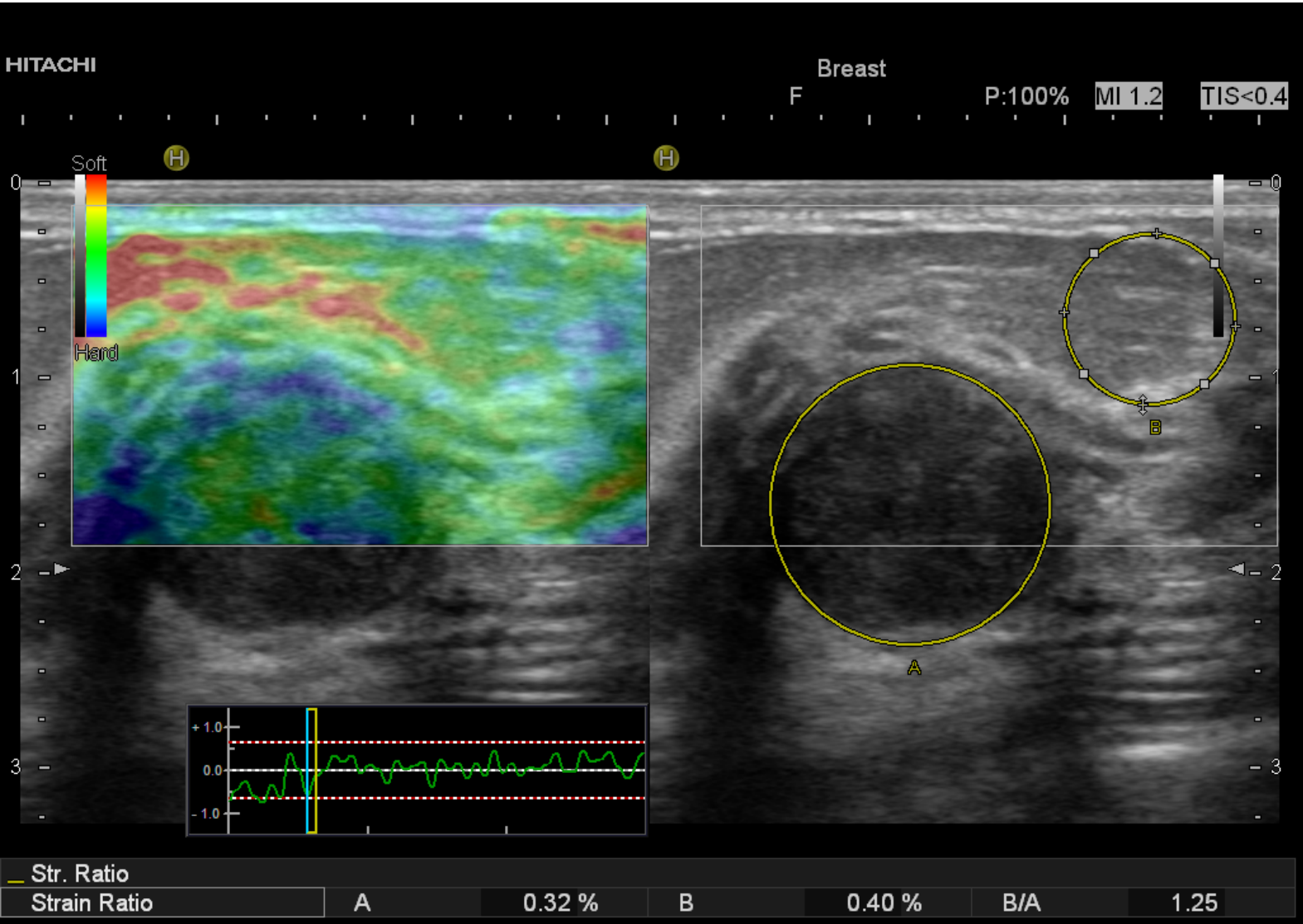
Cysts show a specific color artifact (BGR sign
Blue → Green → Red)



Breast – benign

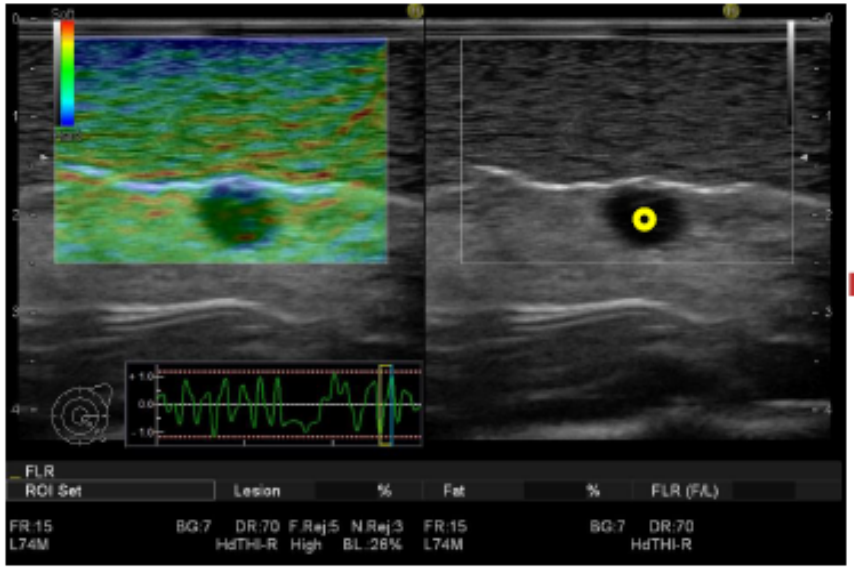


Breast - benign

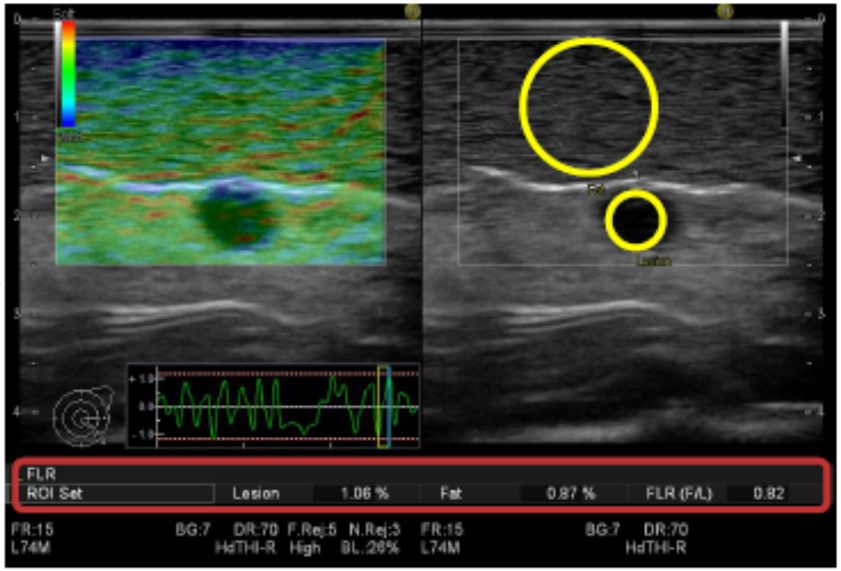


Assist Strain Ratio

- ROI setting process for strain ratio measurement is automated for breast applications (FLR):
  - Single click operation which removes operator dependency.
  - Applicable to targets which are mass-forming lesions in the Breast.
  - Can be measured on retrieved image



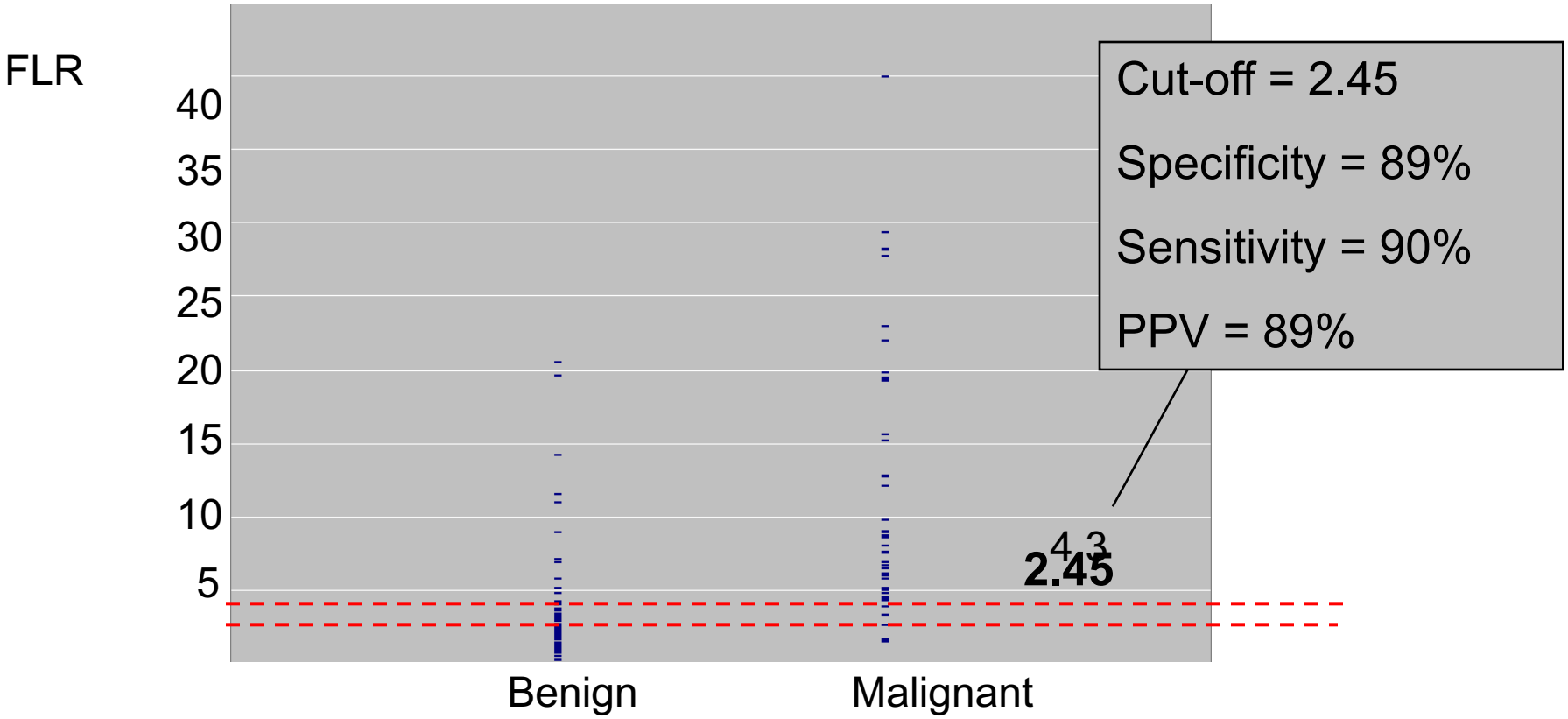
Click the center of lesion.



ROI's are set automatically and result is displayed.

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Values of FLR in Benign and Malignant tumors



FLR in Benign Tumor shows low value, FLR in Malignant Tumor shows high value.
Using a cut-off of 4.3, FLR achieved high percentage in specificity, sensitivity and accuracy respectively. (Lhano et al)

SIGNIFICANT DIFFERENTIATION OF FOCAL BREAST LESIONS: CALCULATION OF STRAIN RATIO IN BREAST SONOELASTOGRAPHY.

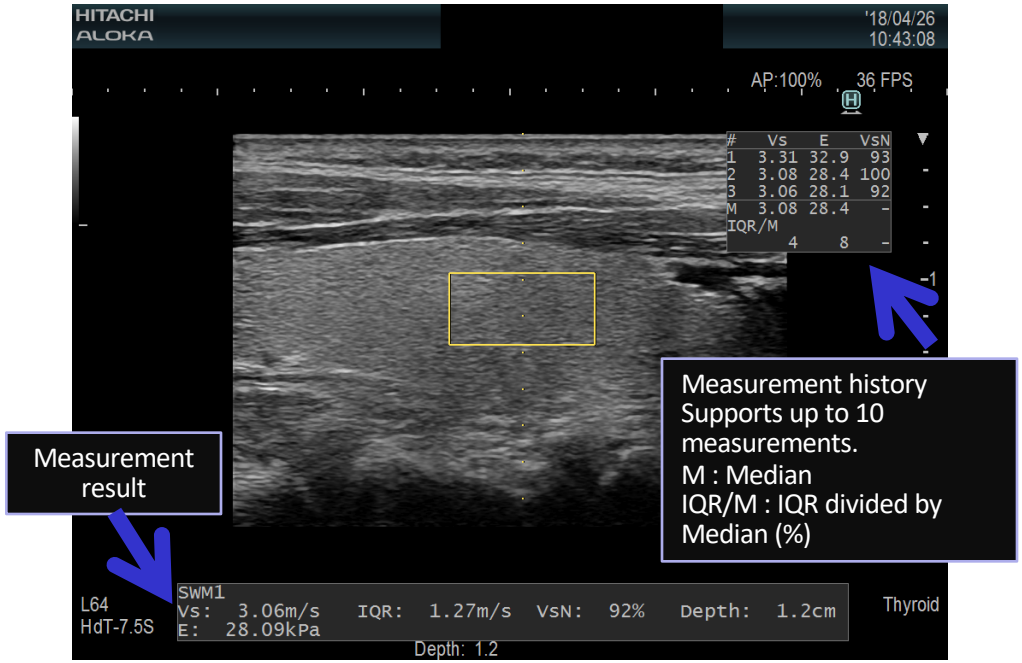
Thomas A, Degenhardt F, Farrokh A, Wojcinski S, Slowinski T, Fischer T.

Department of Obstetrics and Gynecology, Charité-Universitätsmedizin Berlin, Berlin,

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SWM for other applications

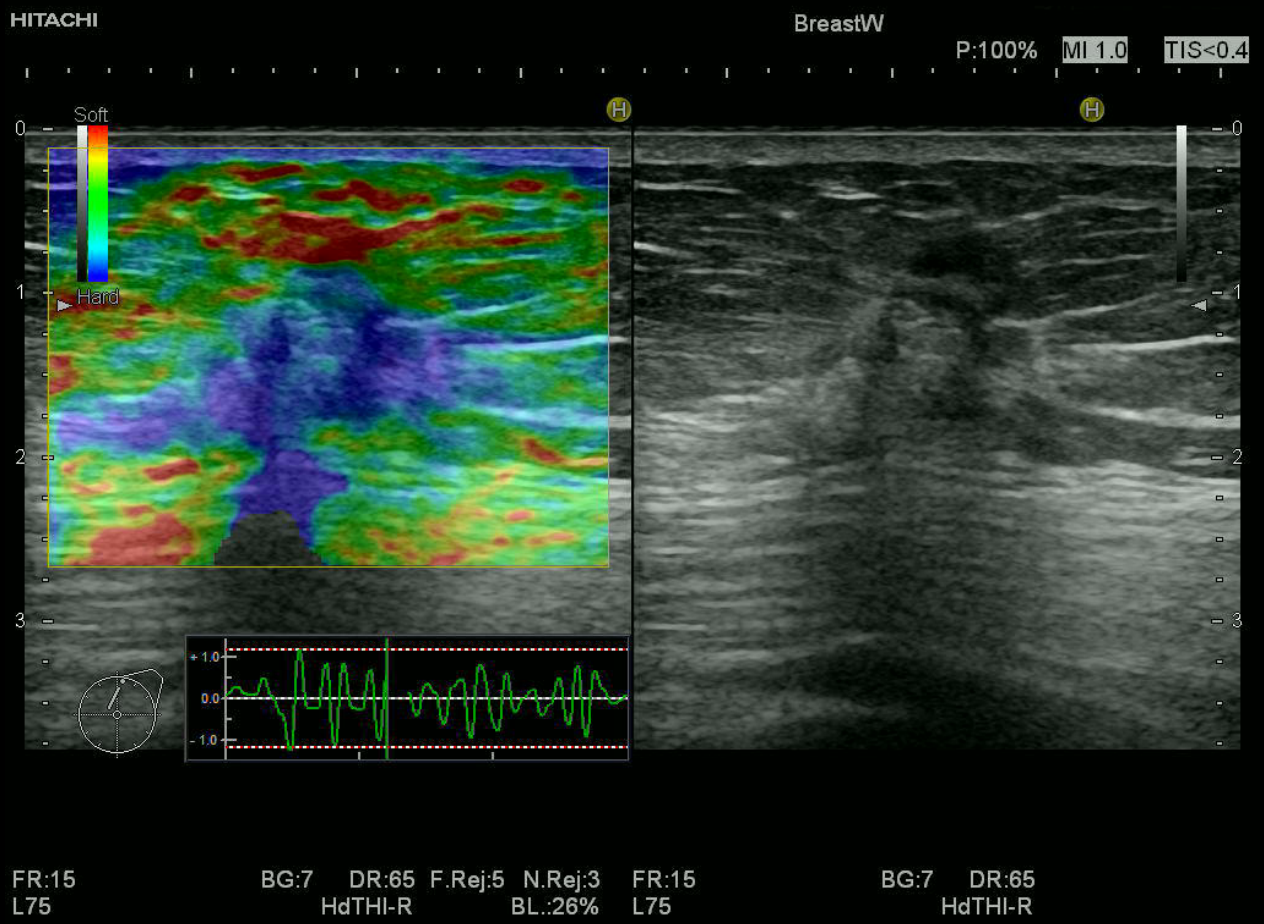
- Shear Wave Measurement is now available on linear probes for variety of clinical applications: Breast, Thyroid, MSK, Small Parts and many others.
- SWM ROI adjustment is also possible to fit all the clinical cases and applications



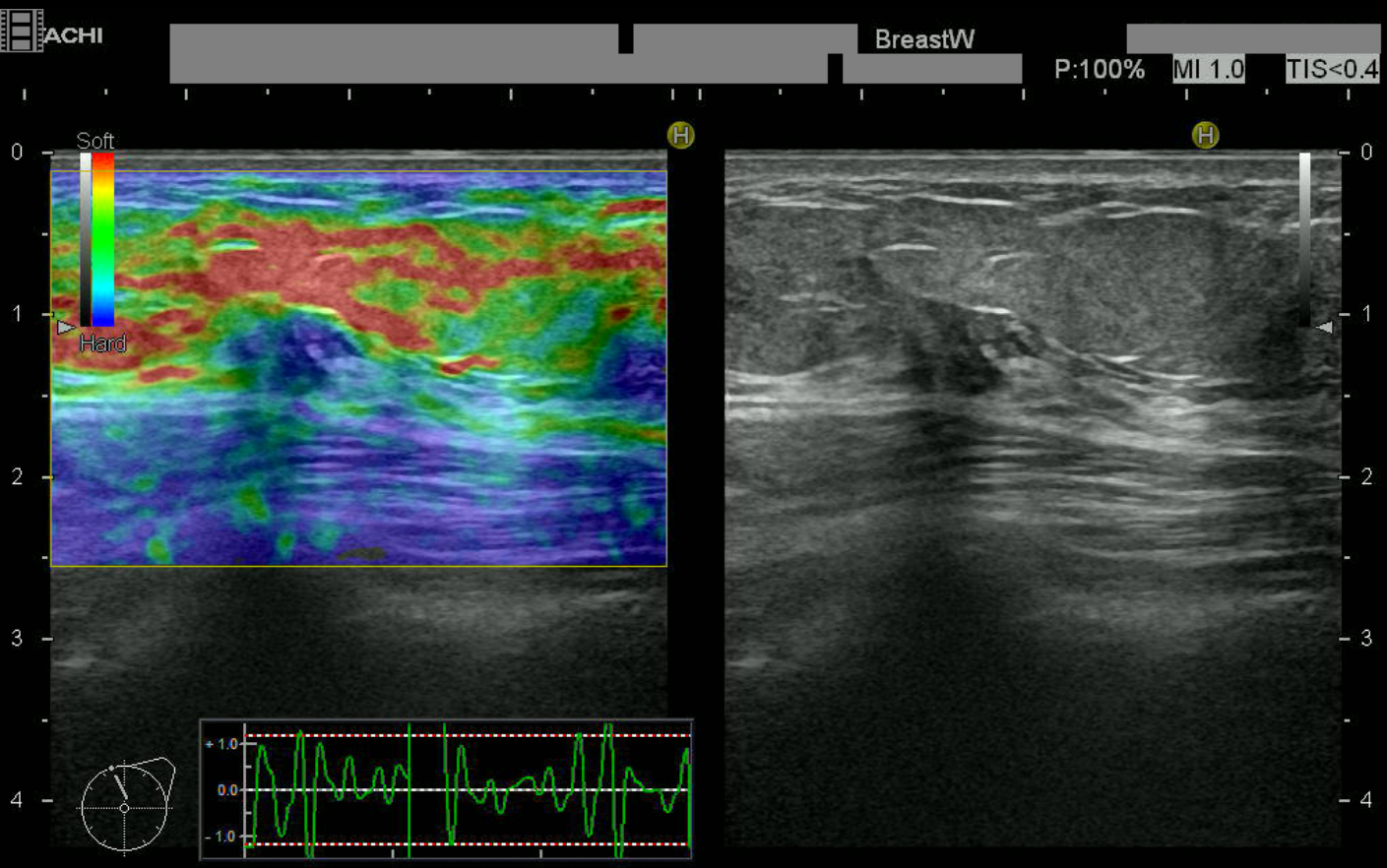
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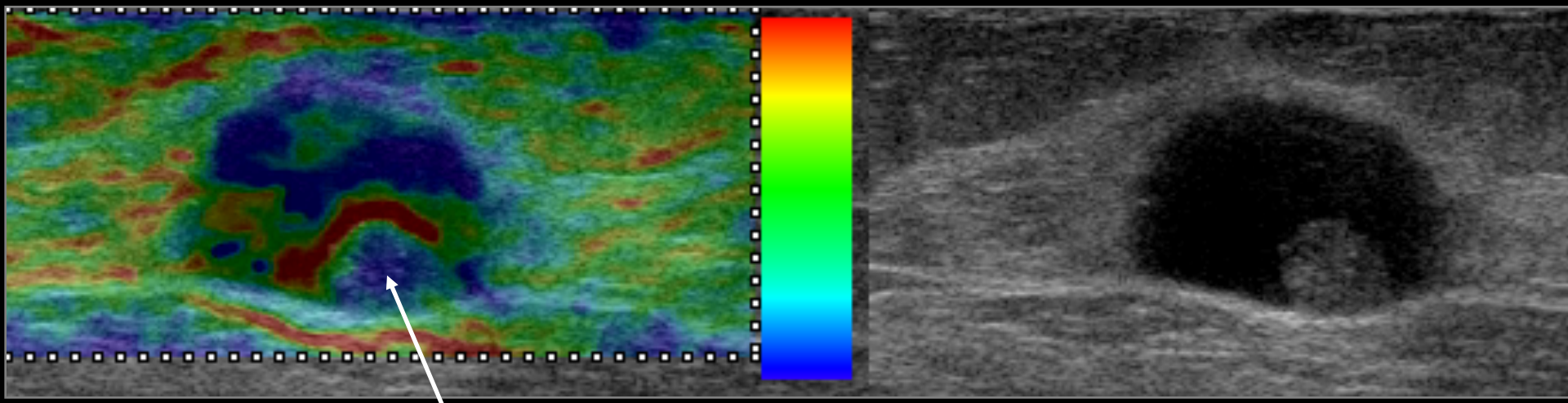
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Breast – malignancy



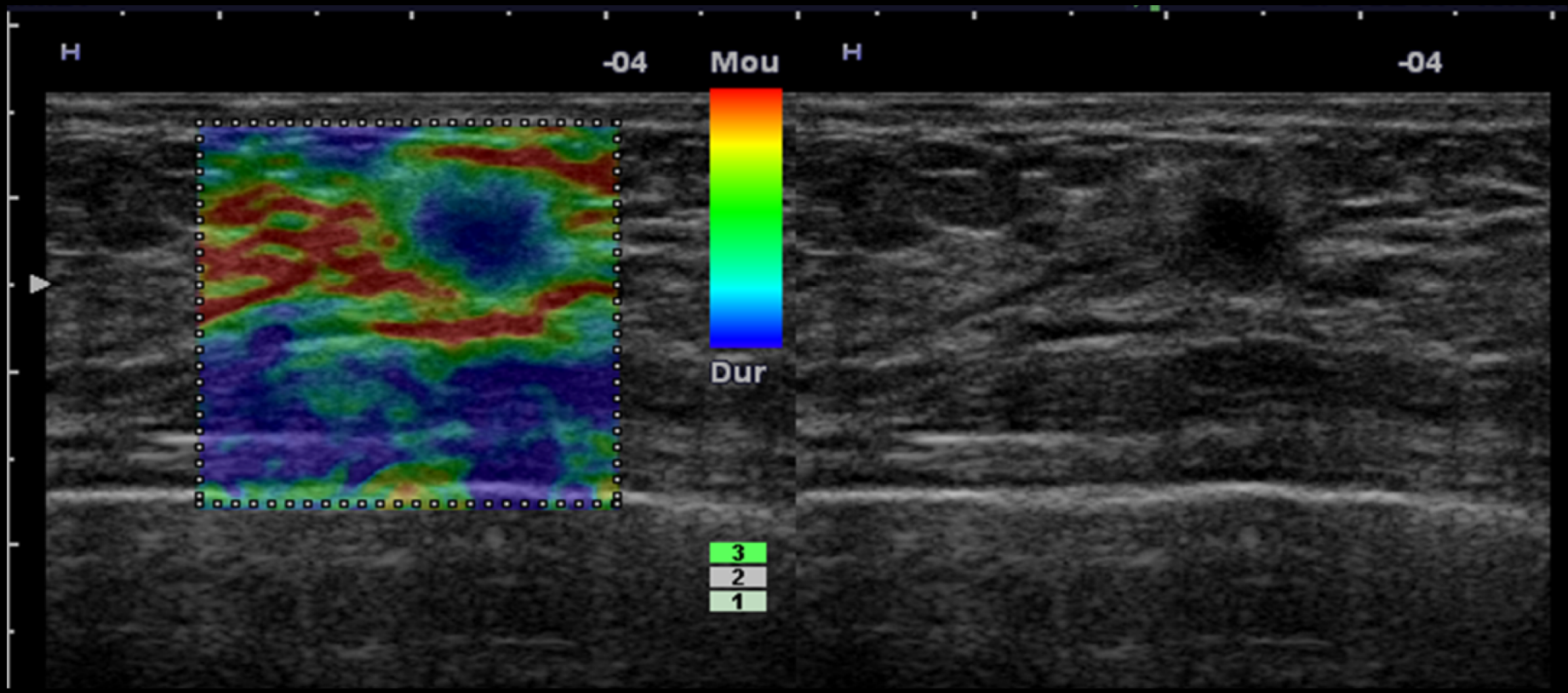
Breast – malignancy – multifocal lesion





Central part – blue > papillary ca

Lymph node infiltration

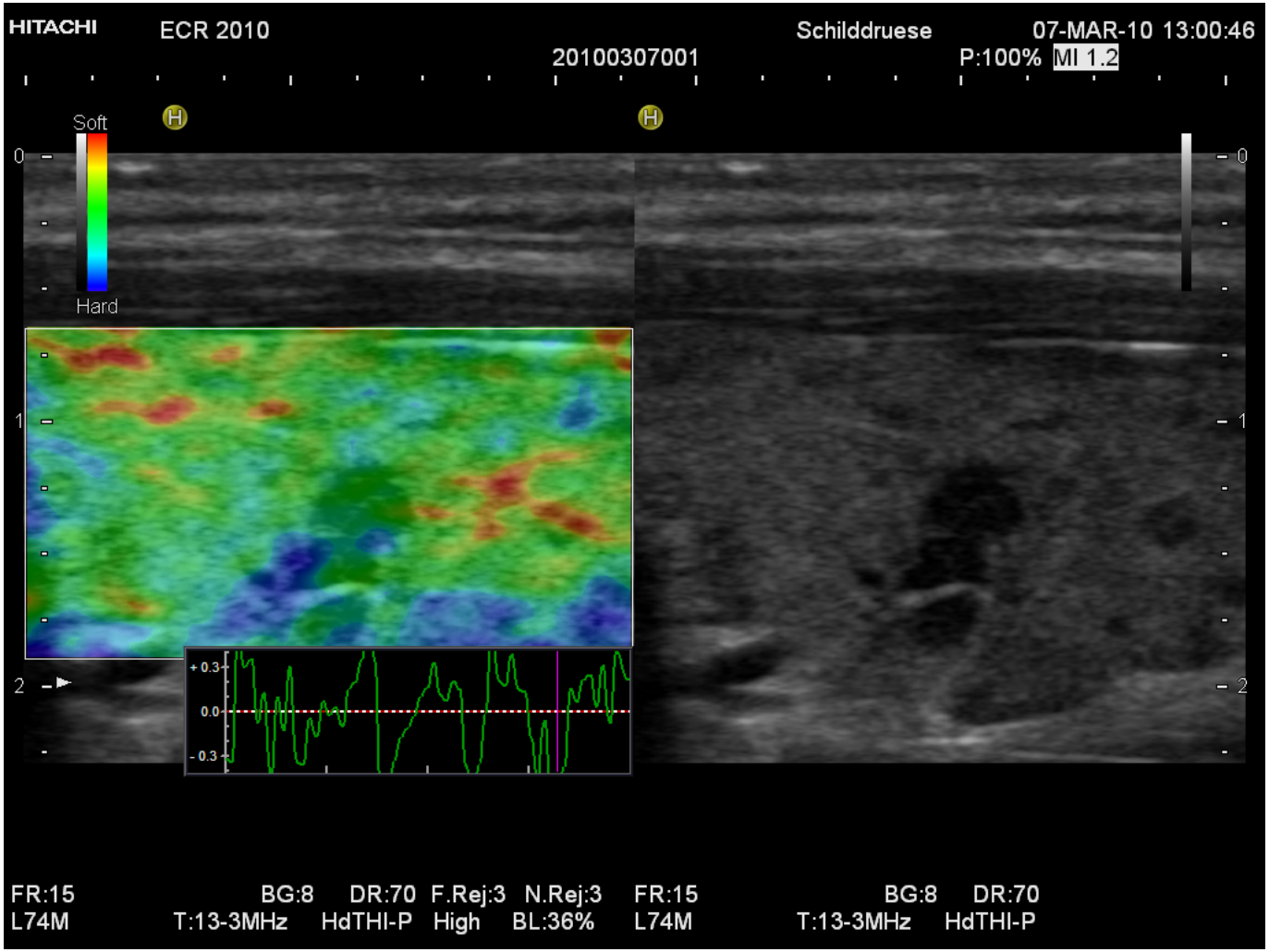


Thyroid and lymph nodes



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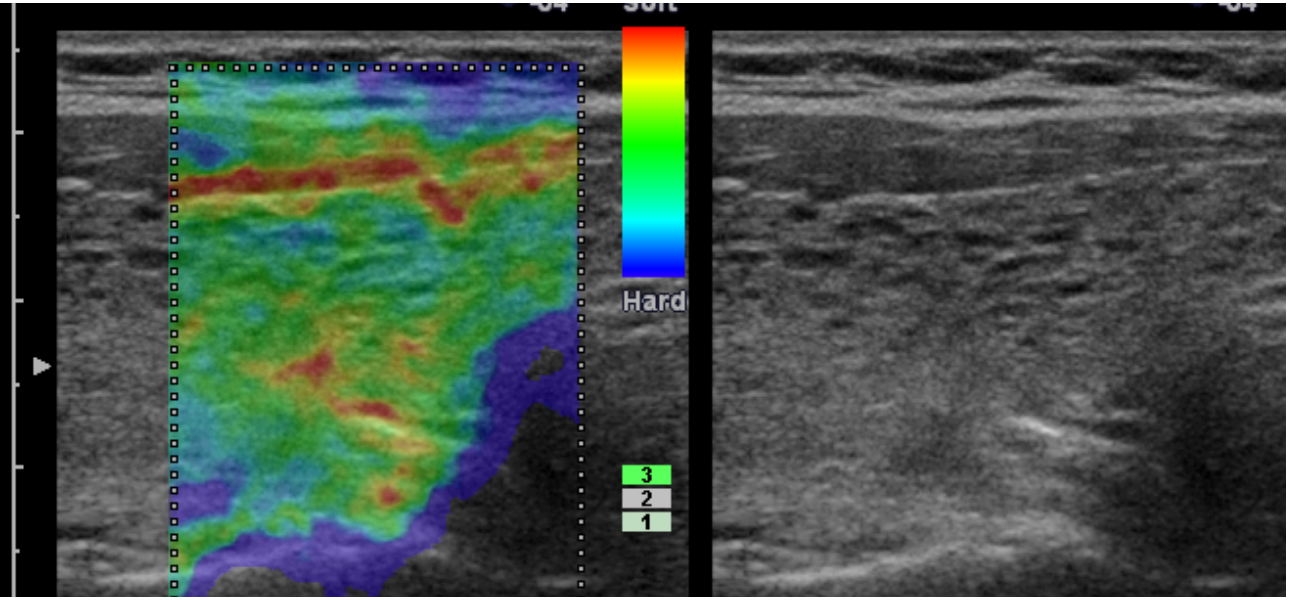
Coloid cysts

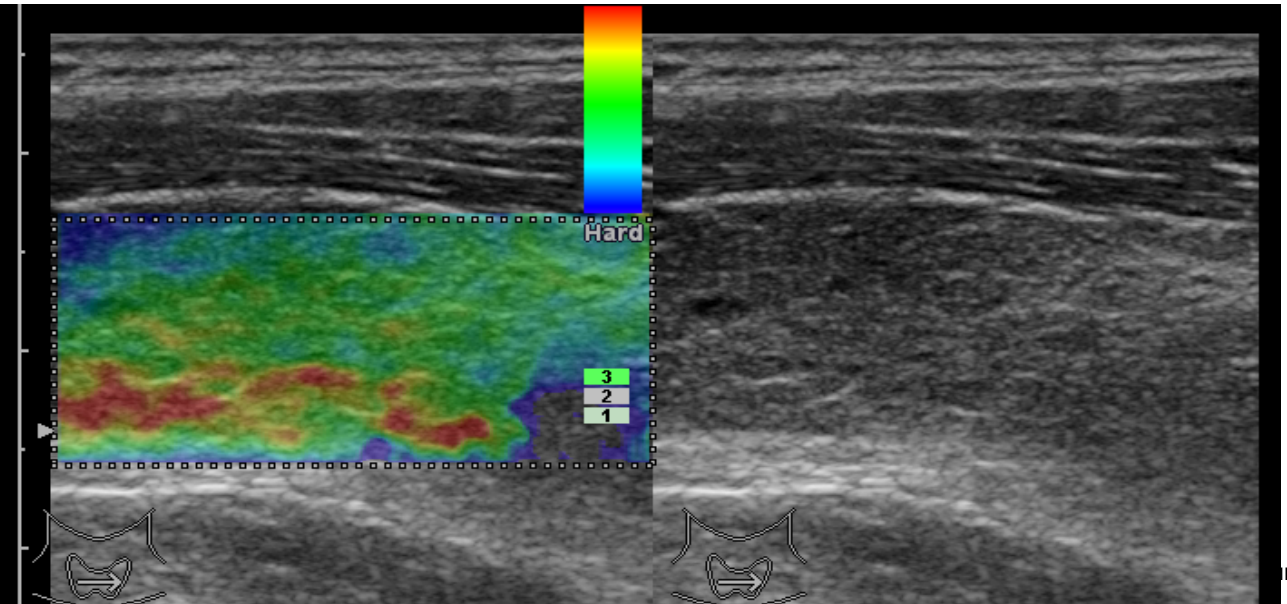


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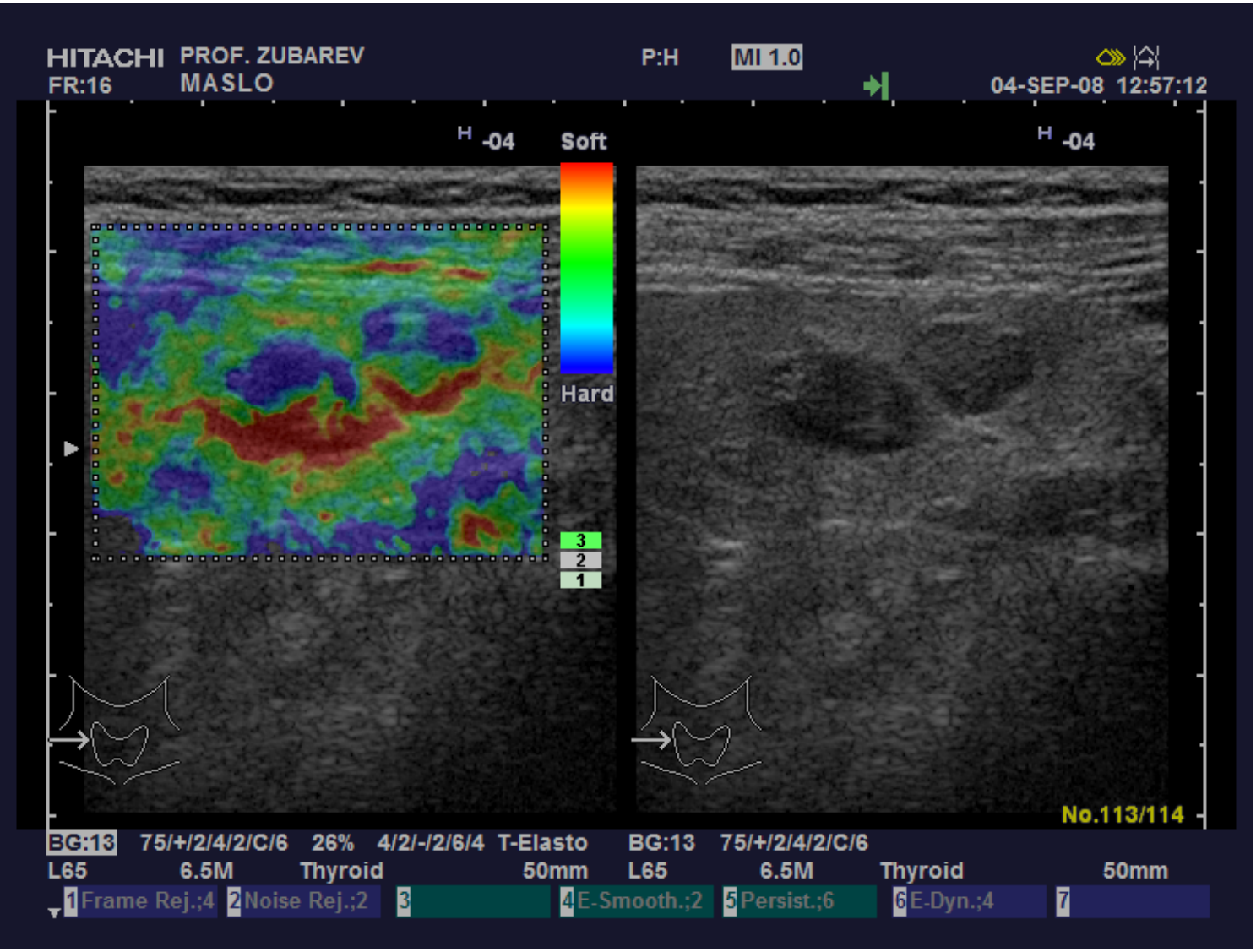
Thyroiditis





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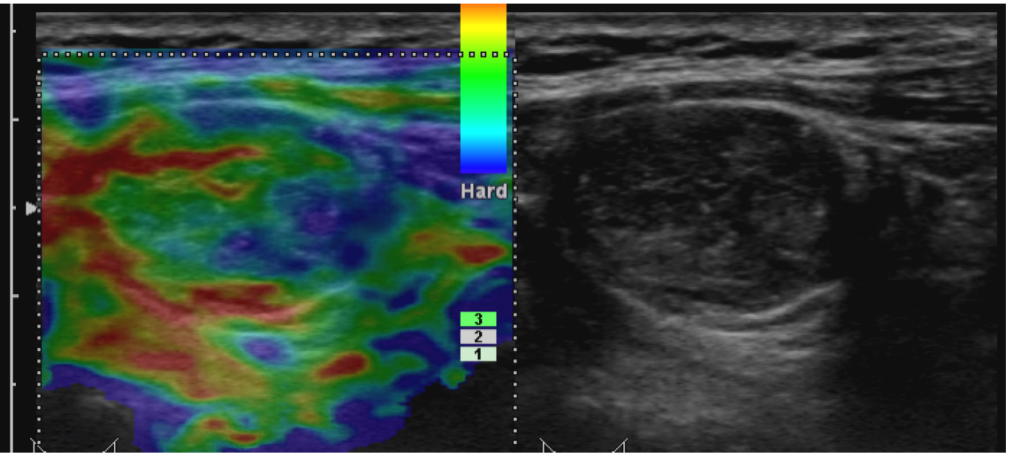
Colloid cysts



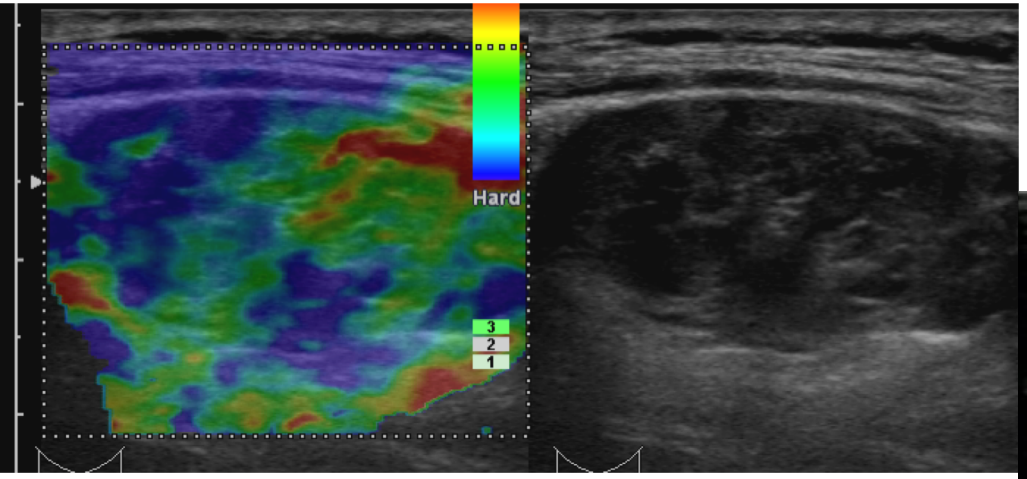
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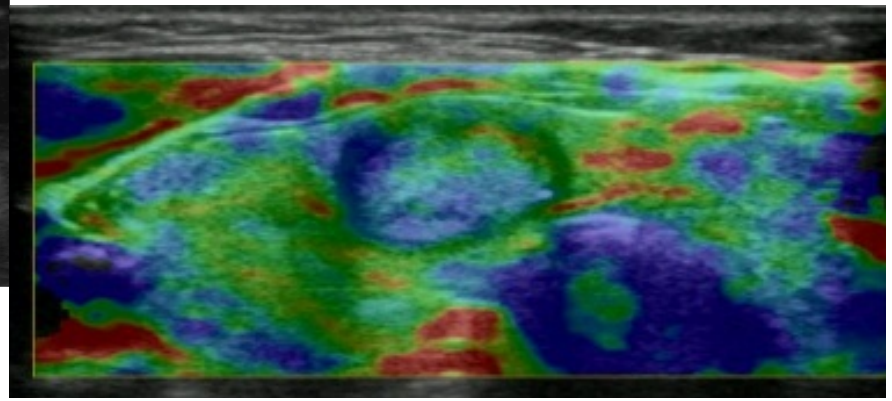
Malignancy



Follicular carcinoma



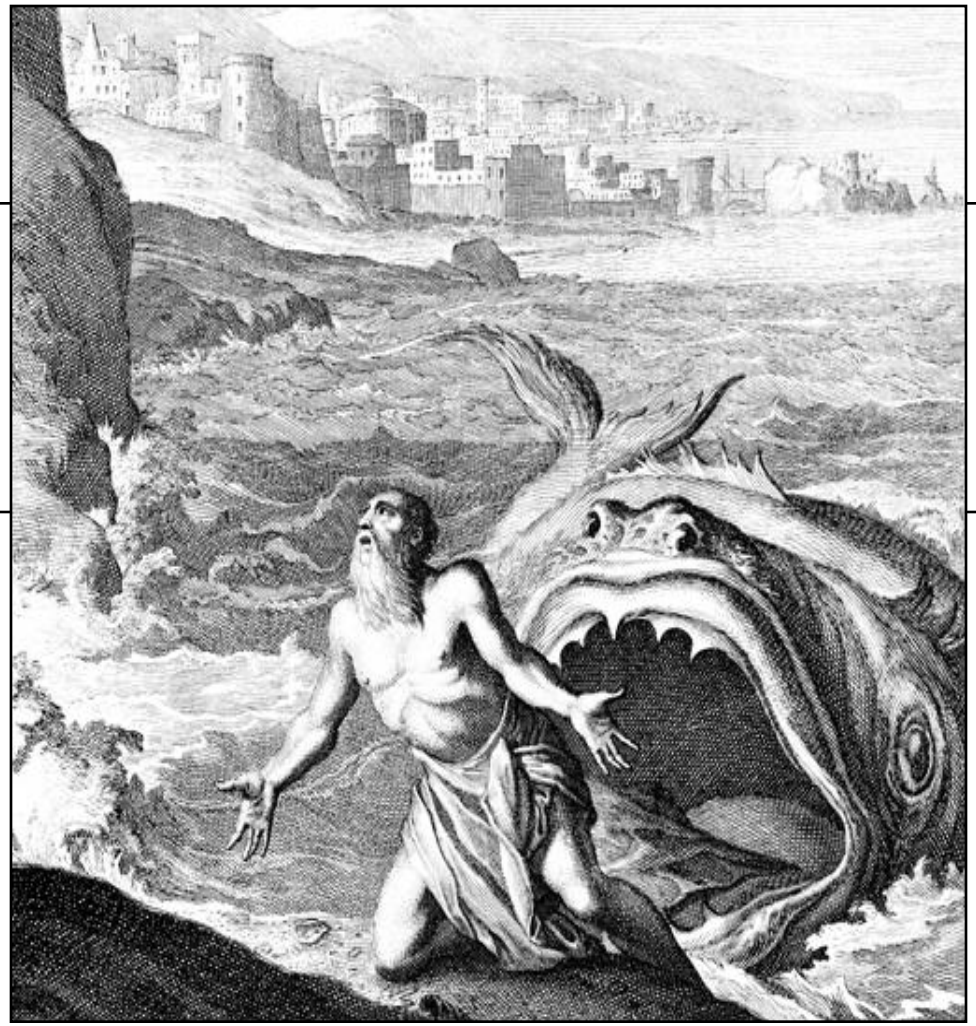
Papillary carcinoma



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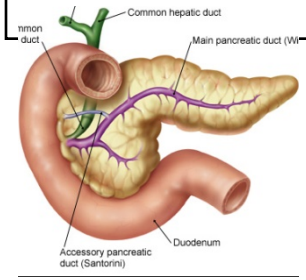
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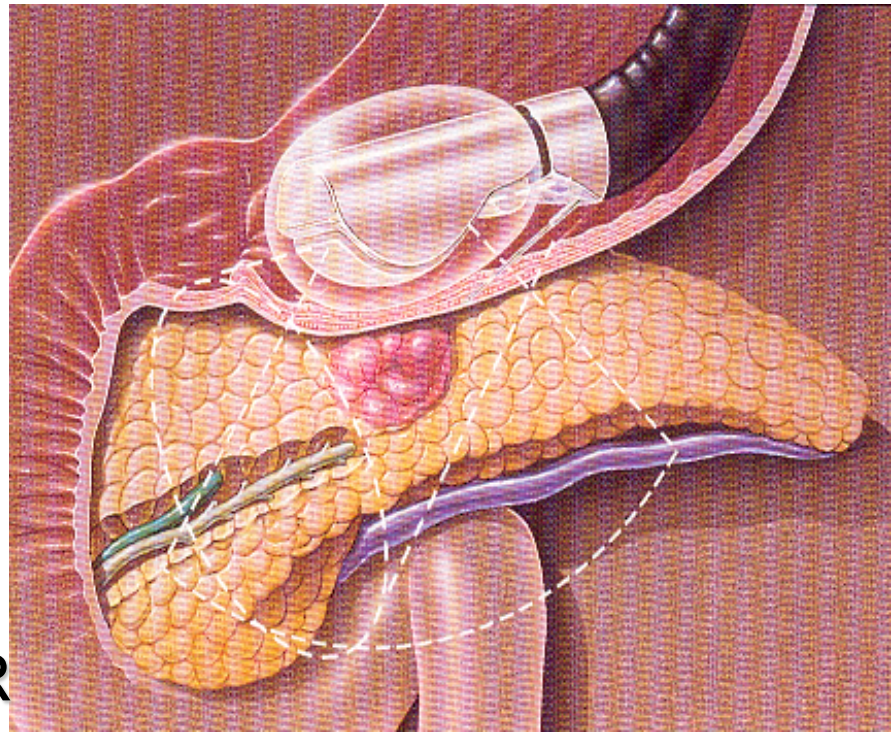
EUS



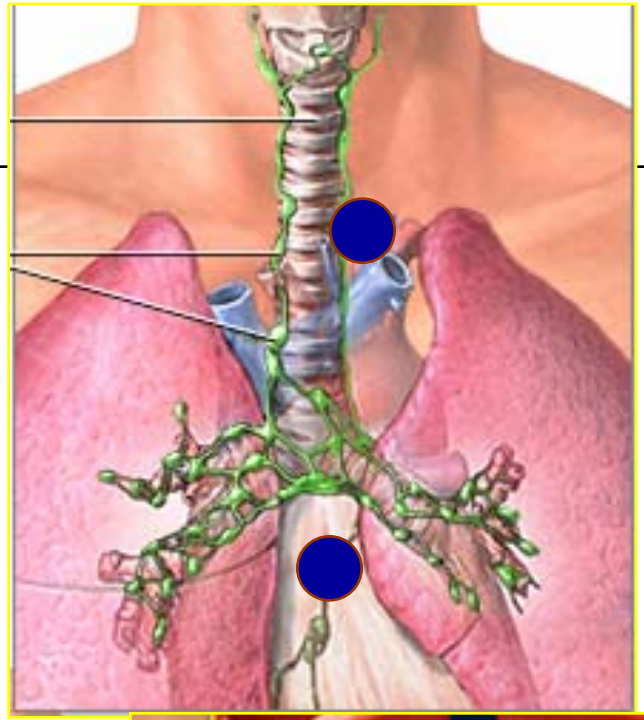
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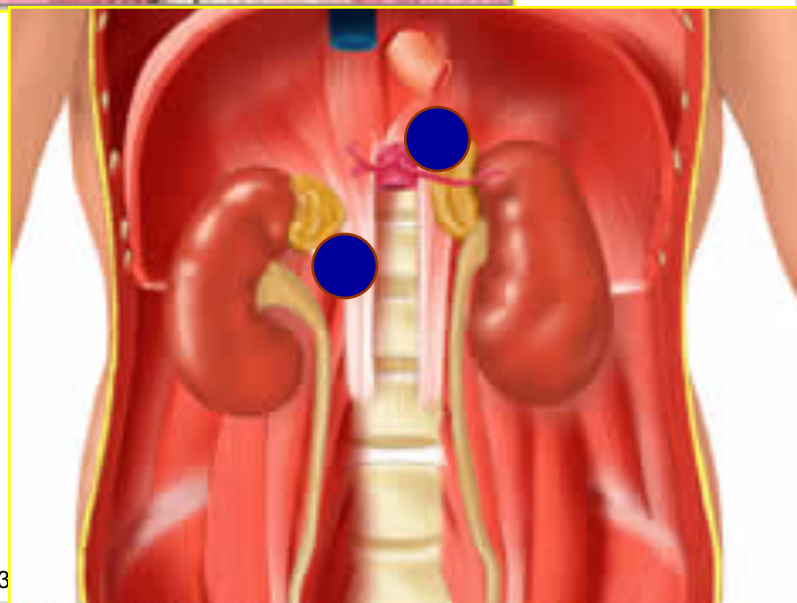
HI-RTE in EUS





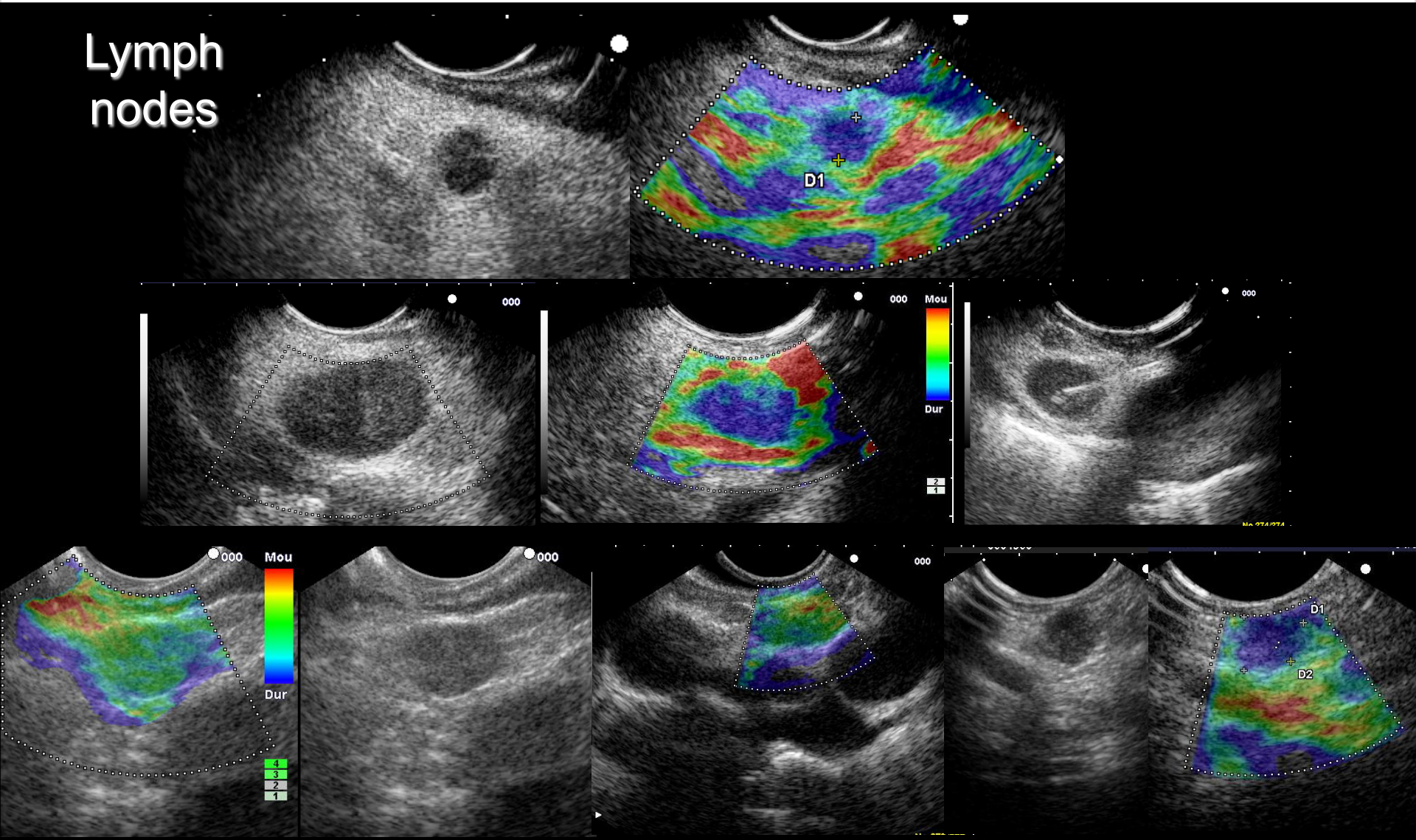
R L





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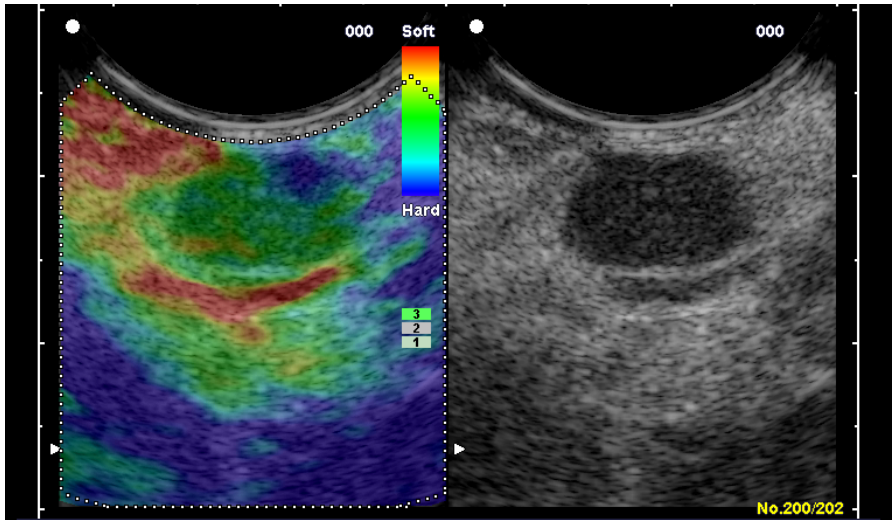
ALOKA illuminate the change
HITACHI Inspire the Next



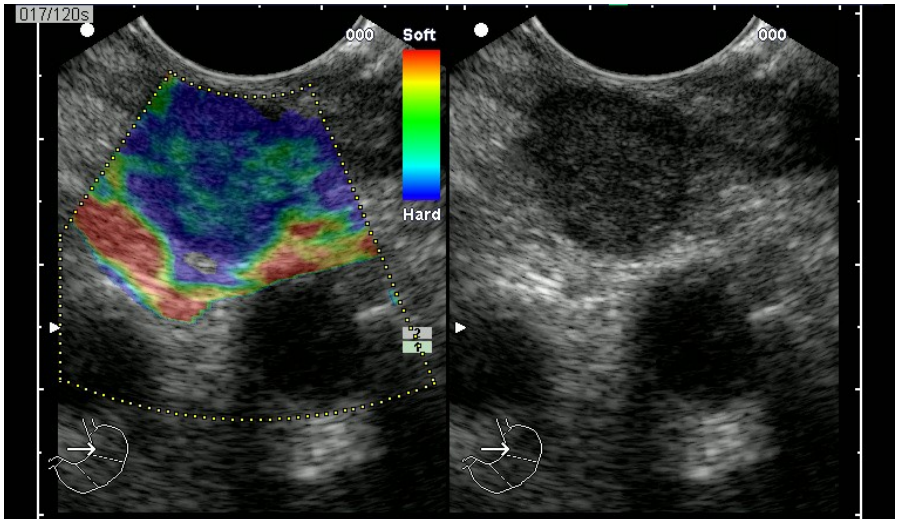
Images courtesy of M.Giovannini, Paoli-Calmettes Institute, Marseille-France

HI-RTE in endoscopic applications

- Endoscopic HI-RTE allows characterisation and differentiation of benign and malignant lymph nodes with a high sensitivity, specificity and accuracy in range 82 – 89%. (Saftoiu A, 2008; Janssen J, 2007)
- Offers complementary imaging to conventional EUS and can be used to target the most suitable node for FNA



Small lymph node with malignant infiltration of hilum



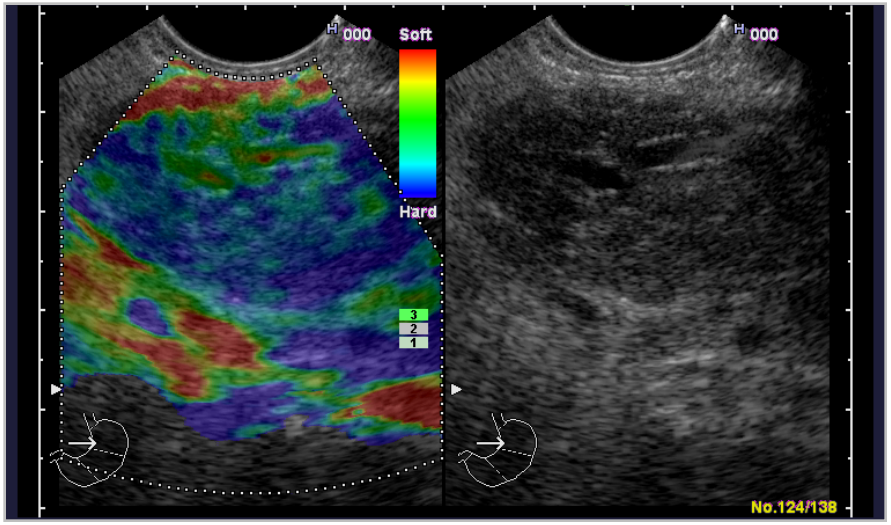
Upper mediastinal malignant lymph node

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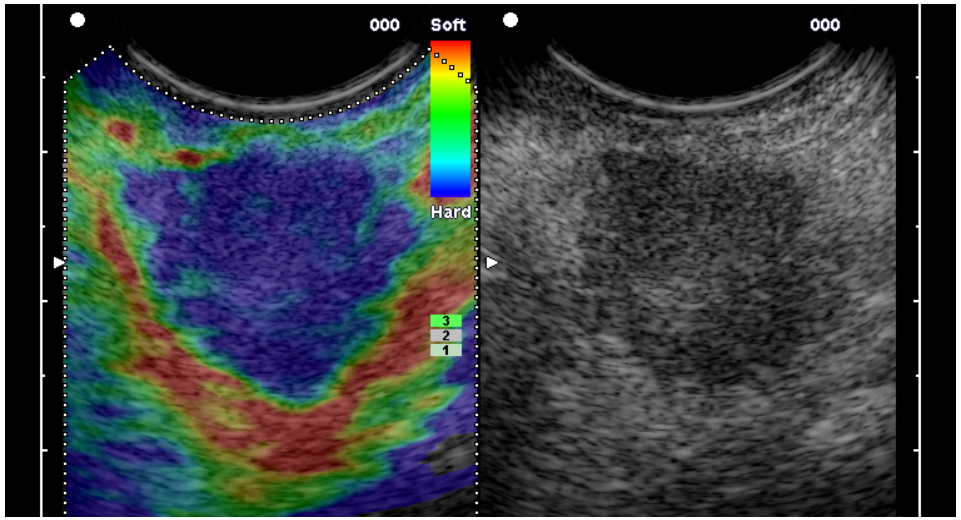
Lymph node


HITACHI
Endoscope 2F
P:100%
MI 0.6
TIS<0.4
0
1
2
FR:21
EG-3870UTK
BG:12 DR:60
dTHI-W-P

- Early studies using qualitative analysis (HircheTO, 2008; Janssen J, 2007; Saftoiu A, 2006) showed poor accuracy for differentiating malignant pancreatic masses from benign inflammatory or fibrotic masses. (sensitvity 40 – 60%, specificity similar or lower)
- Chronic pancreatitis shows degree of tissue stiffness similar to pancreatic carcinoma



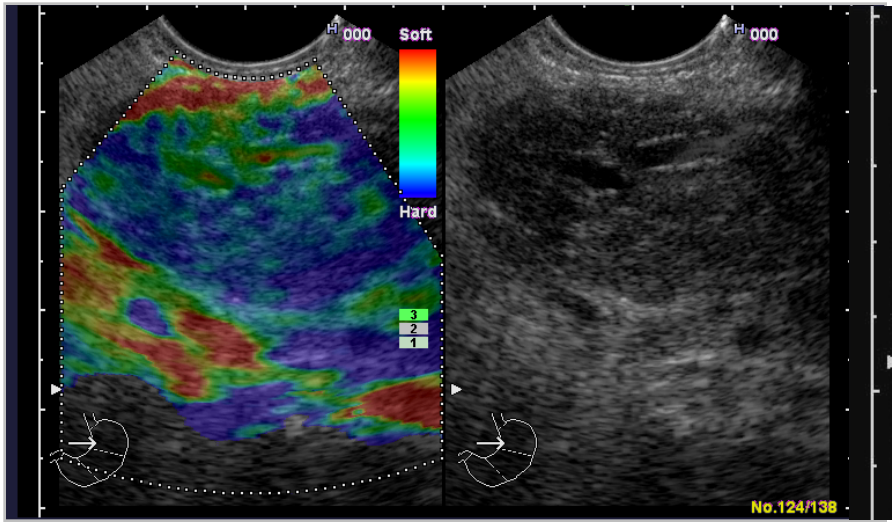
Large pancreatic cancer with some necrotic areas



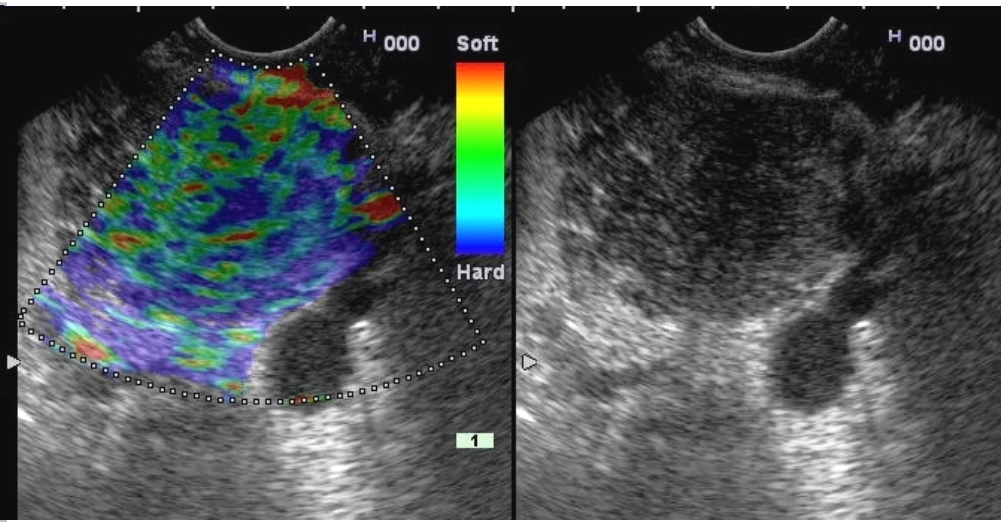
Ductal adenocarcinoma of pancreas

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Large pancreatic cancer with some necrotic areas

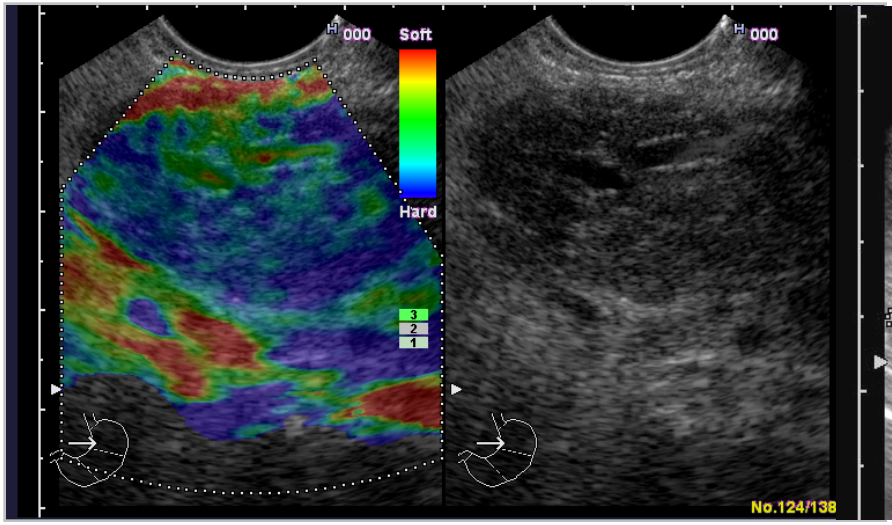


Pseudotumoral pancreatitis

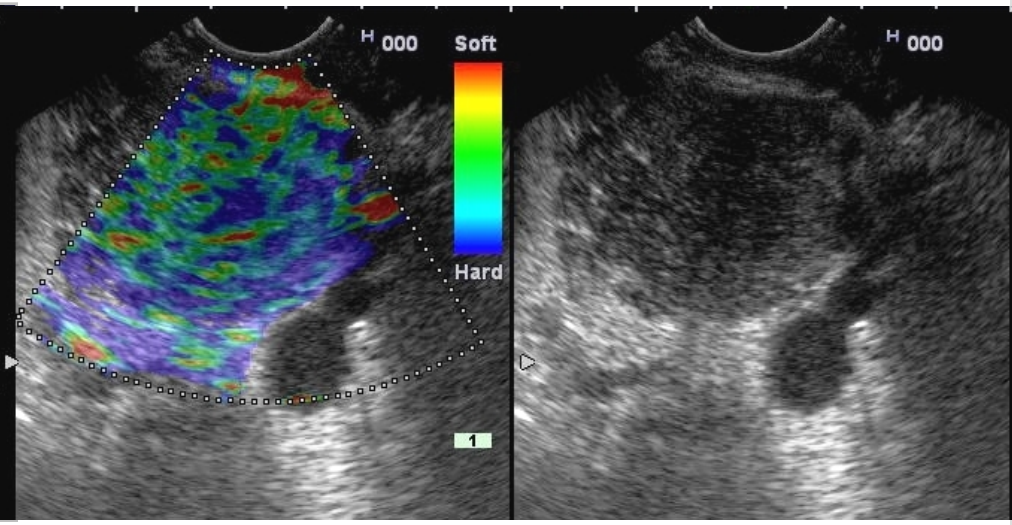
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- Later studies using quantification methods make image interpretation less subjective and increase accuracy:
  - Strain Ratio measurements, Inglesias-Garcia J, 2010:
  - single center 86 pts, sens 100% and spec 92.9%, acc 98-3%
  - Histogram analysis, Saftoiu A, 2008; Saftoiu A, 2011:
  - 68 pts single centre, 91.4% sens, 87.9% spec and 89.7% acc
  - 258 pts multicentre study, sens 93.4%, spec 66% acc 85.4 %



Large pancreatic cancer with some necrotic areas



Pseudotumoral pancreatitis

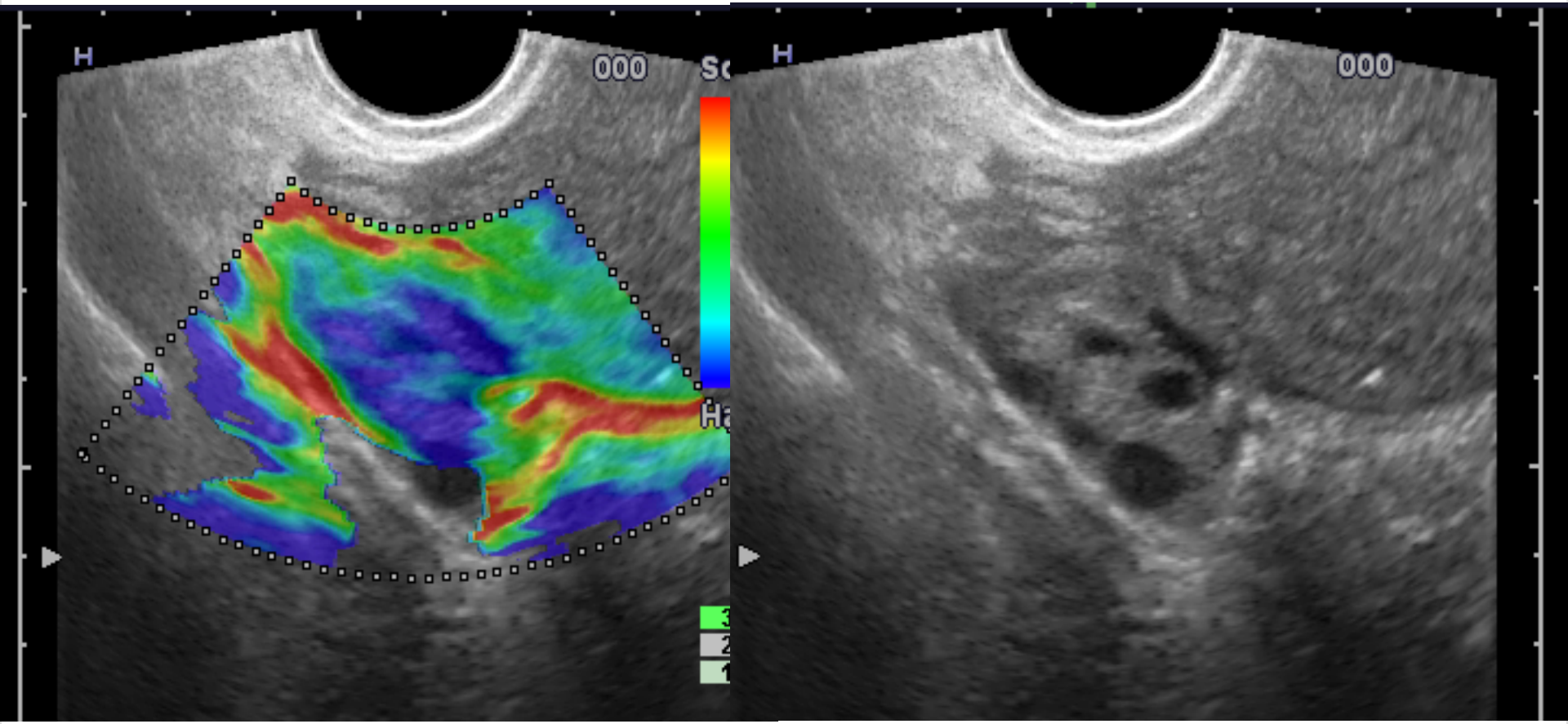
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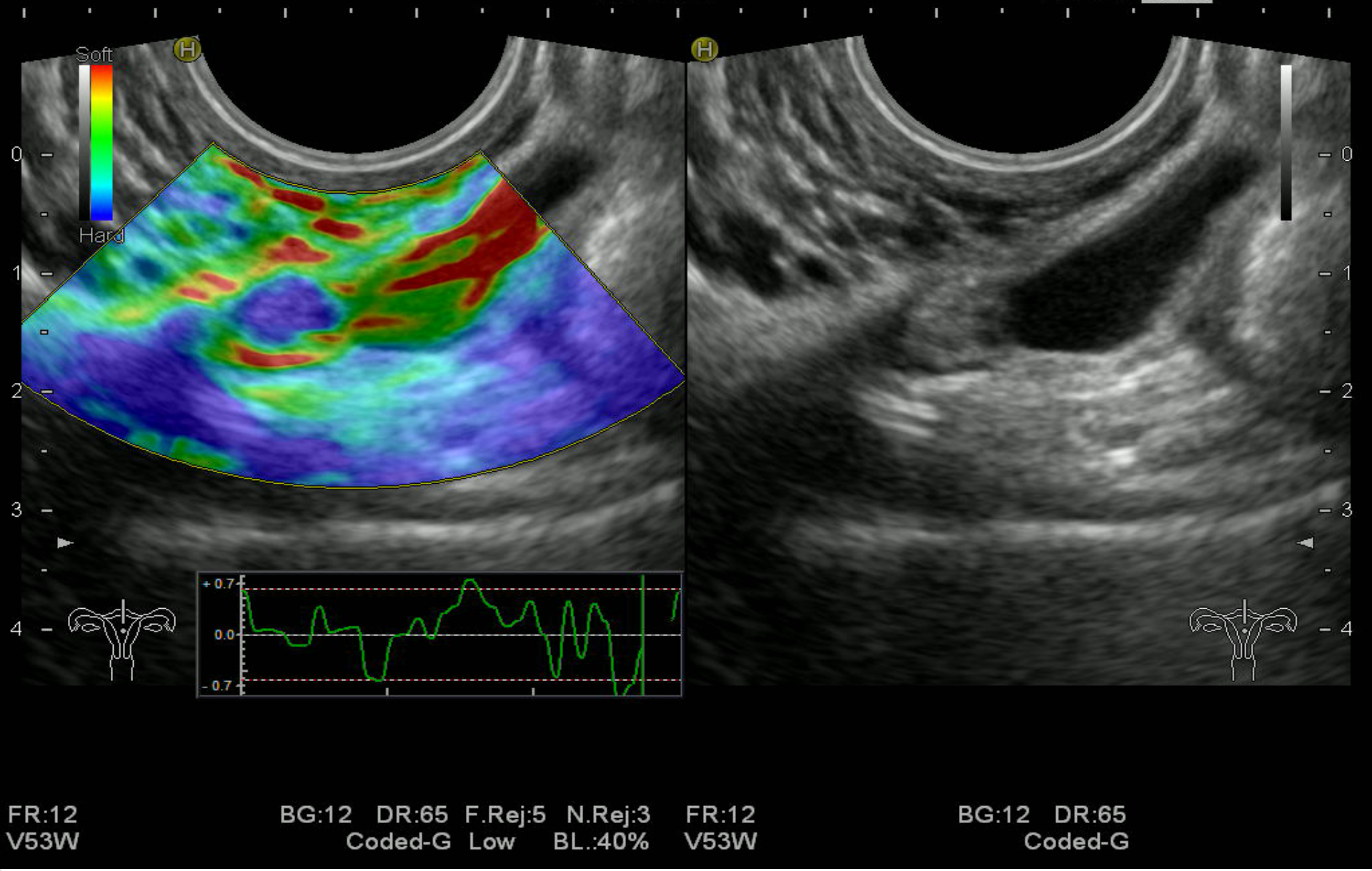
Other applications

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Ovarian Ca



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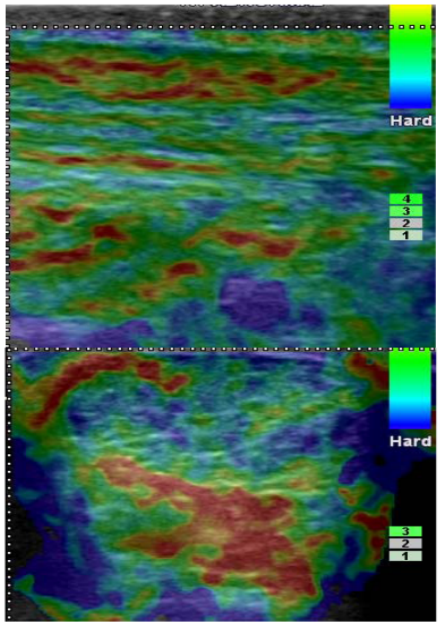
Musculosceletal

HI-RTE – other clinical applications

Musculoskeletal applications:

- Valuable as first diagnosis and follow-up during recovery (not possible with MRI or other imaging modalities).
- Possibility to determine the timing for the athlete to restart activity and training (today rely on doctor's clinical experience).
- Preliminary studies have reported good correlation with elastography in injury to Achilles tendon.



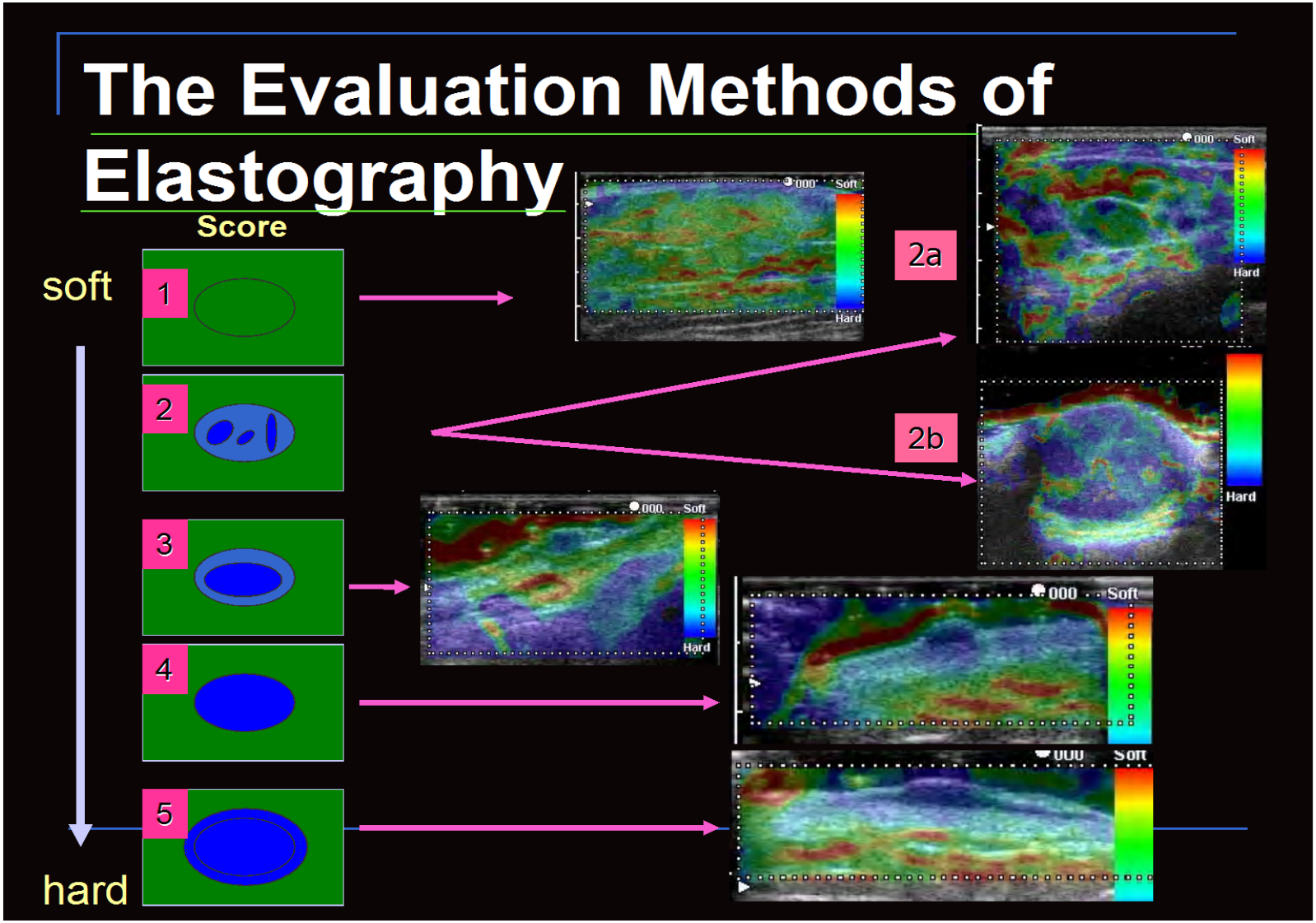


Achilles tendinopathy - Sagittal and transverse

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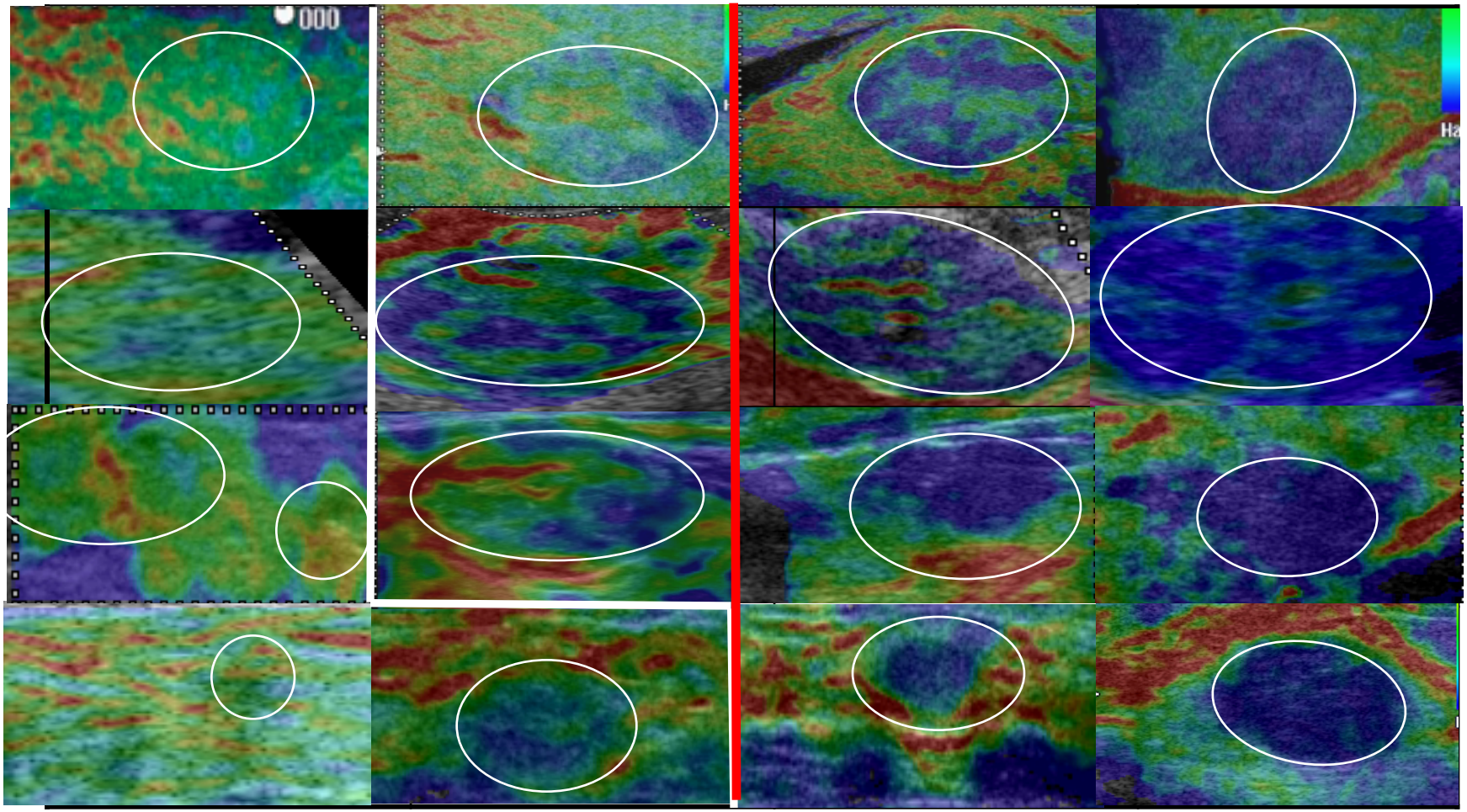
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Skin tumours



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Thank You