Cases from my workstation with focus on MRI

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Disclosures

- Institutional consultation fees: Bayer, Ascelia Pharma, Guerbet

Question 1

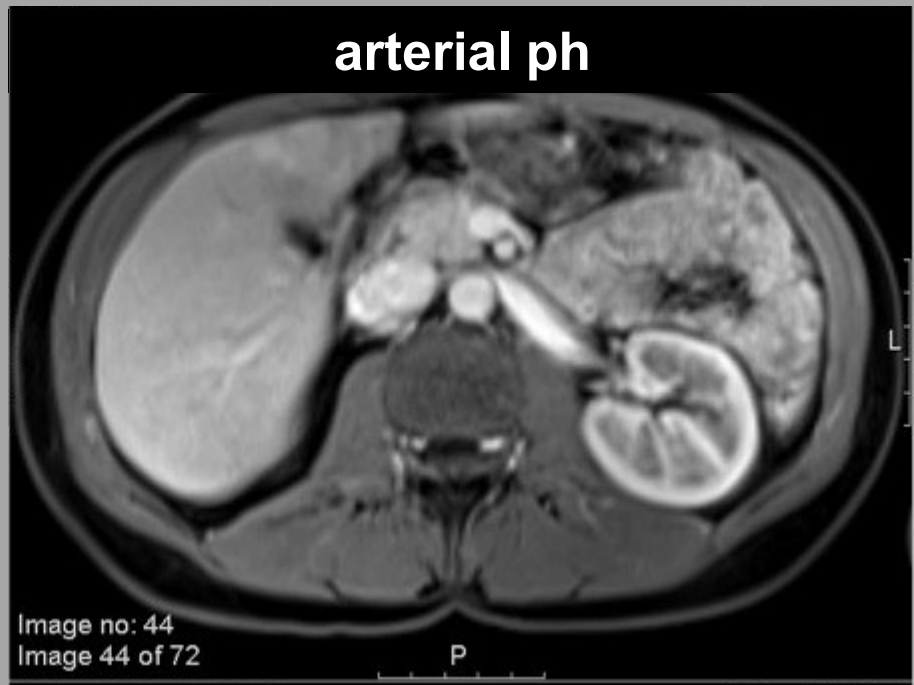
- Are there any lesions?

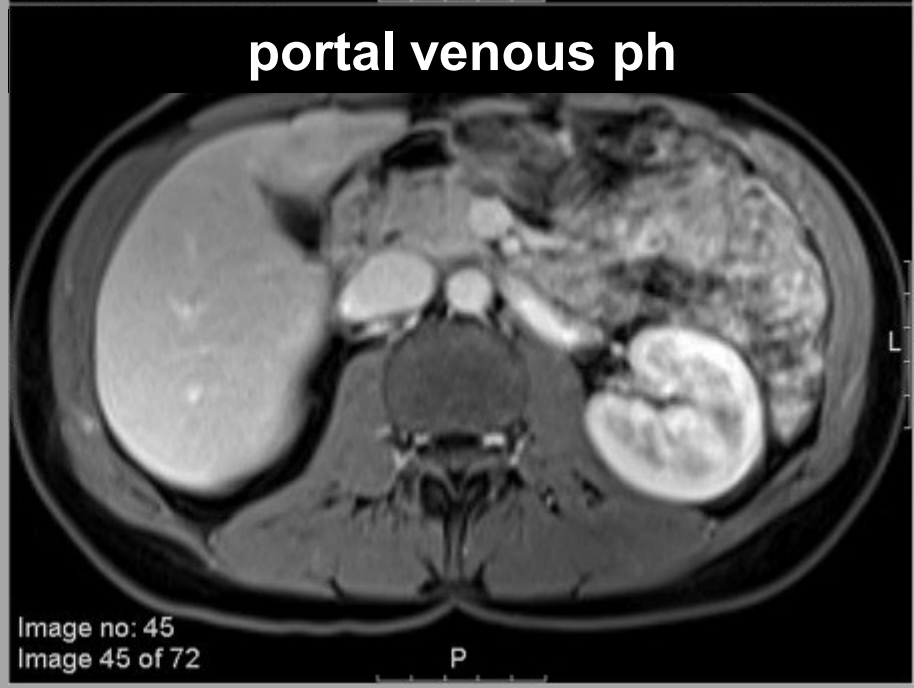
A. No lesions

B. One hypervascular

C. One hypovascular

D. No idea…





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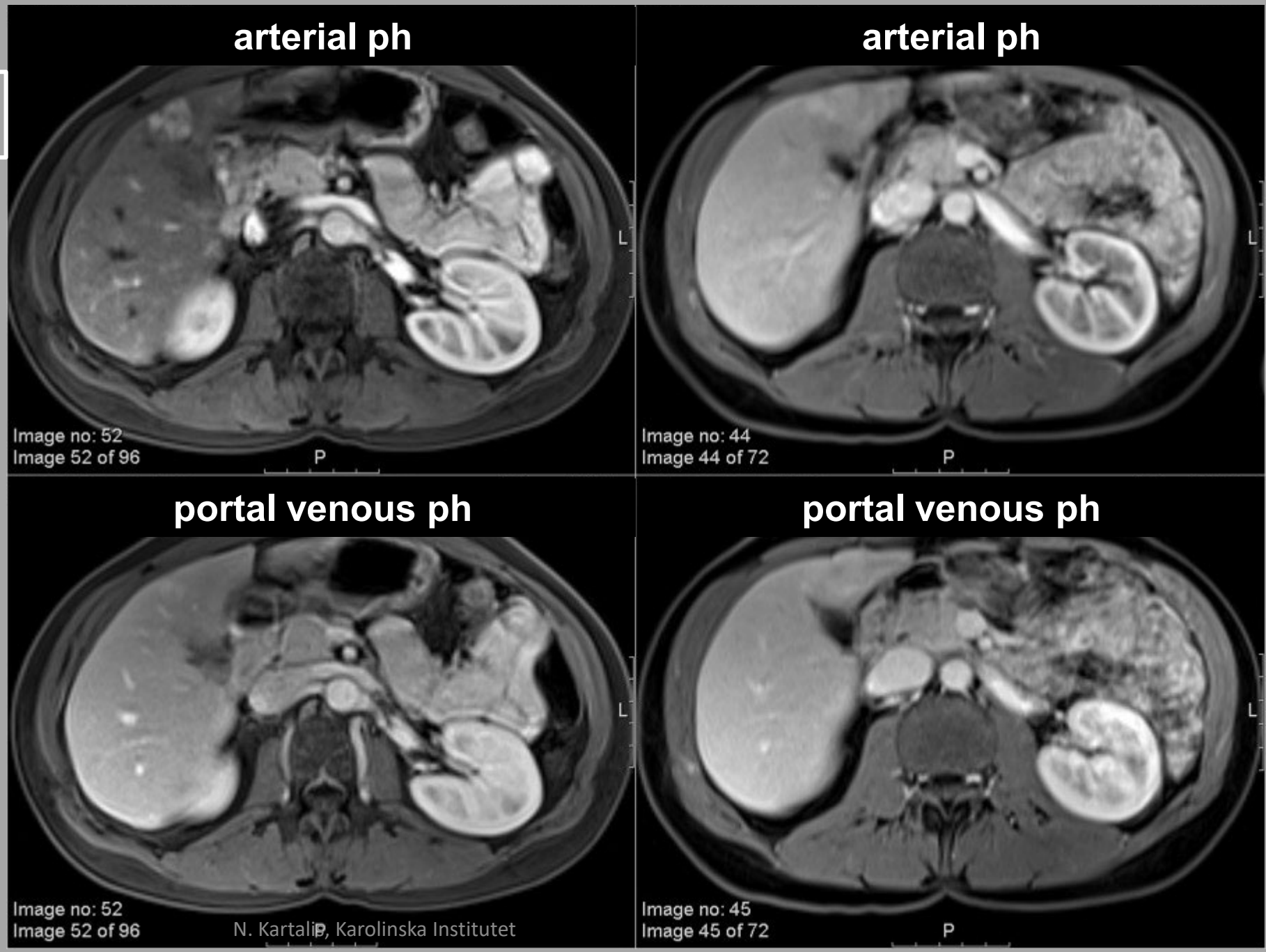

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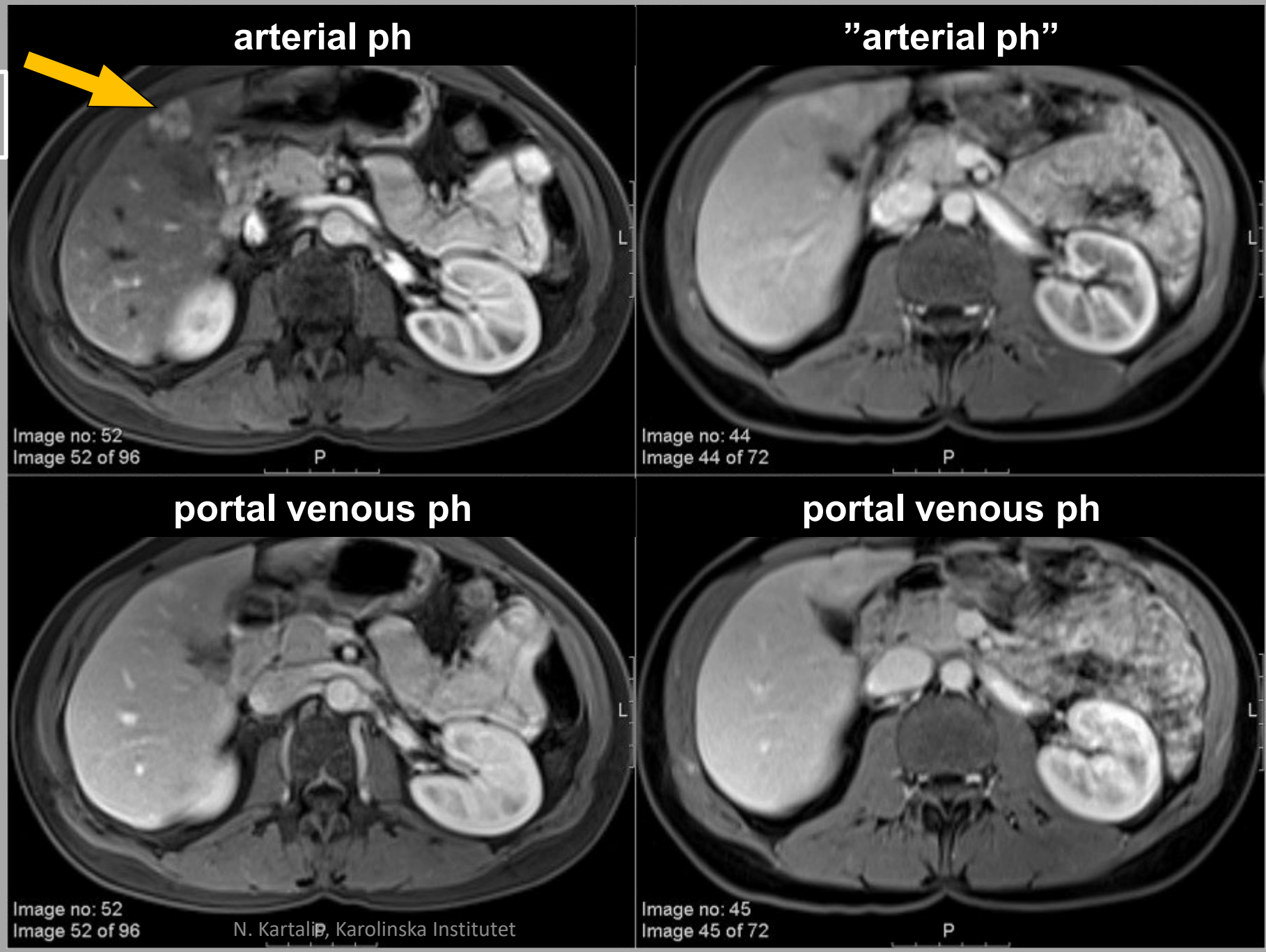
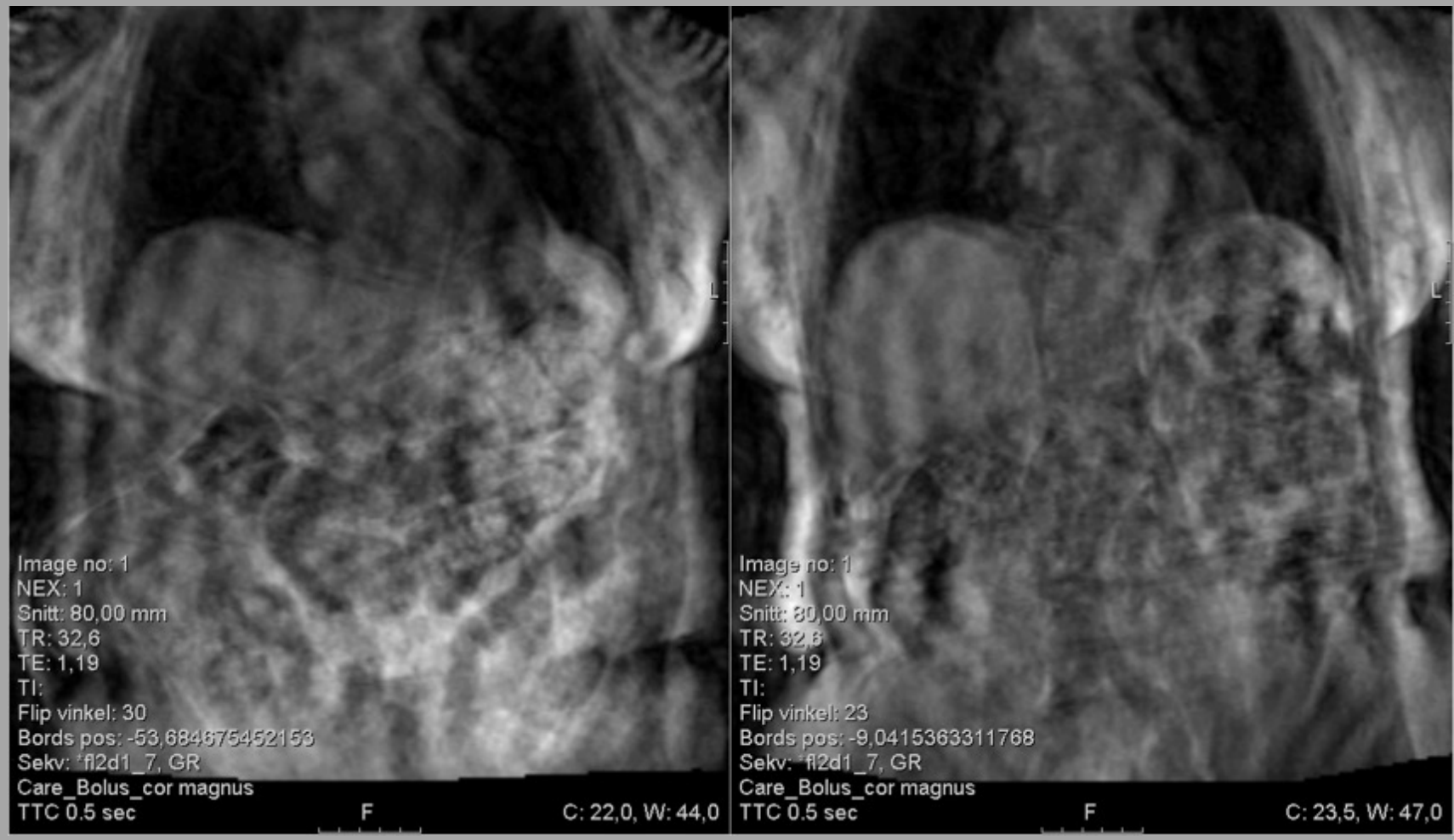


- Timing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Sekv: *fl2d1_7, GR
Care_Bolus_cor magnus
TTC 0.5 sec
F
C: 22,0, W: 44,0
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C: 23,5, W: 47,0

- Timing


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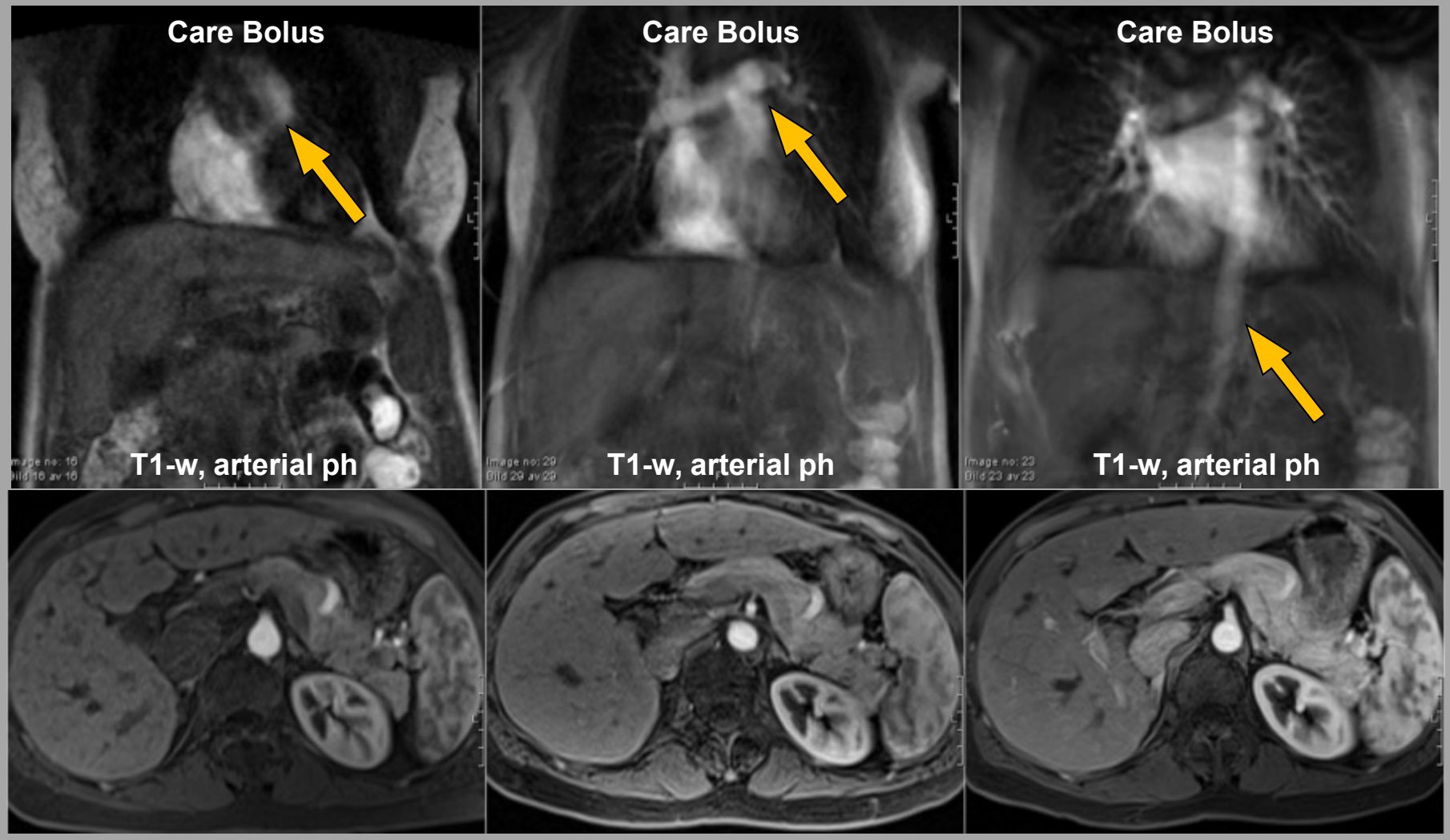
- Timing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T1-w, arterial ph
T1-w, arterial ph
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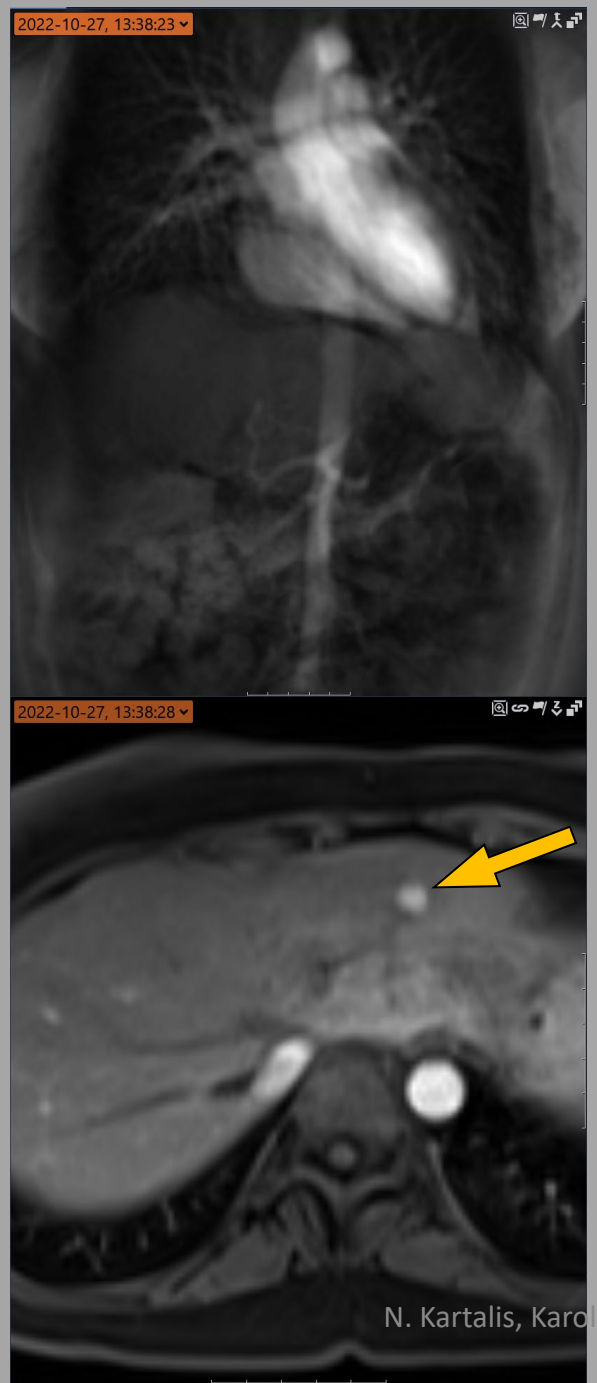
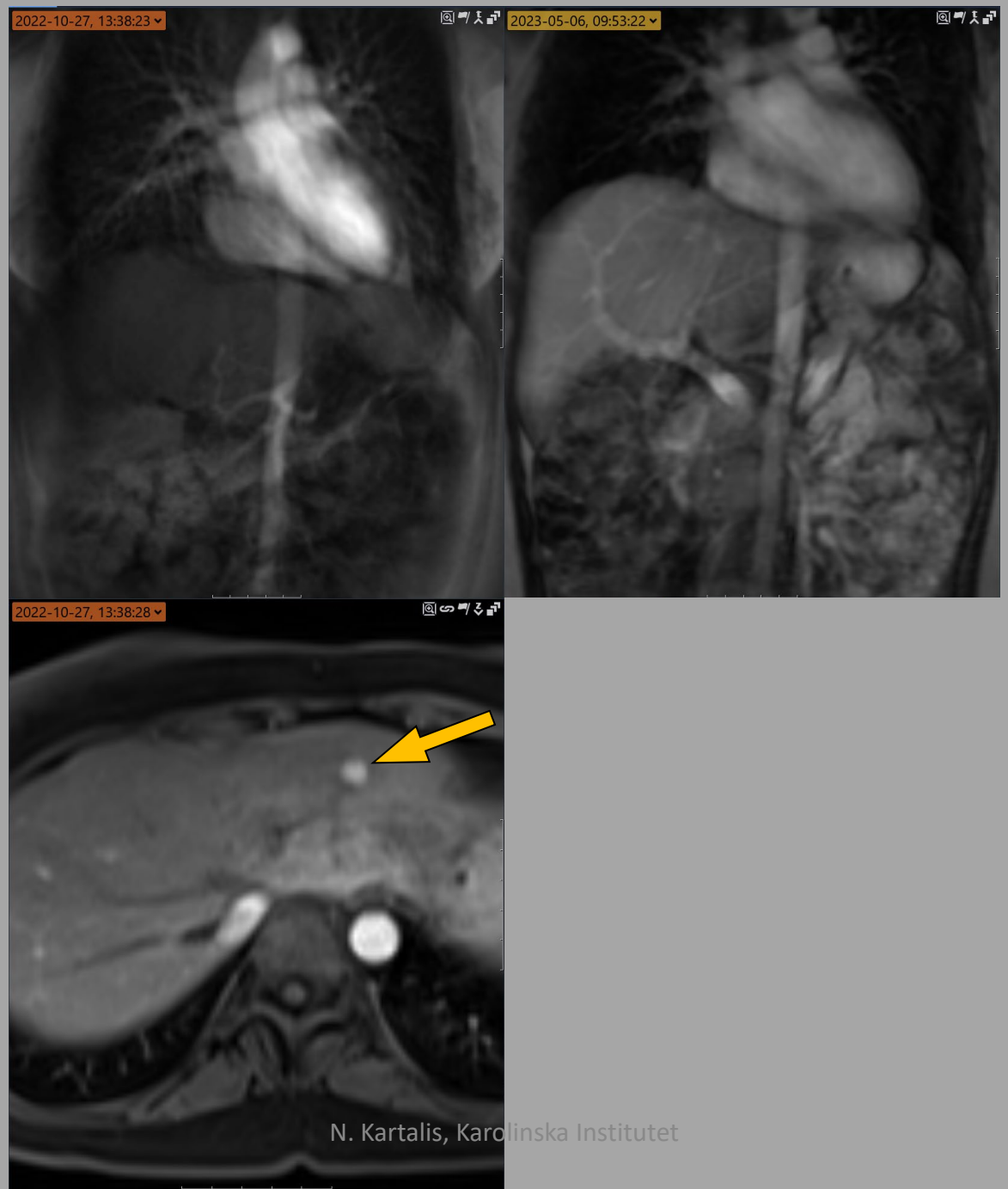
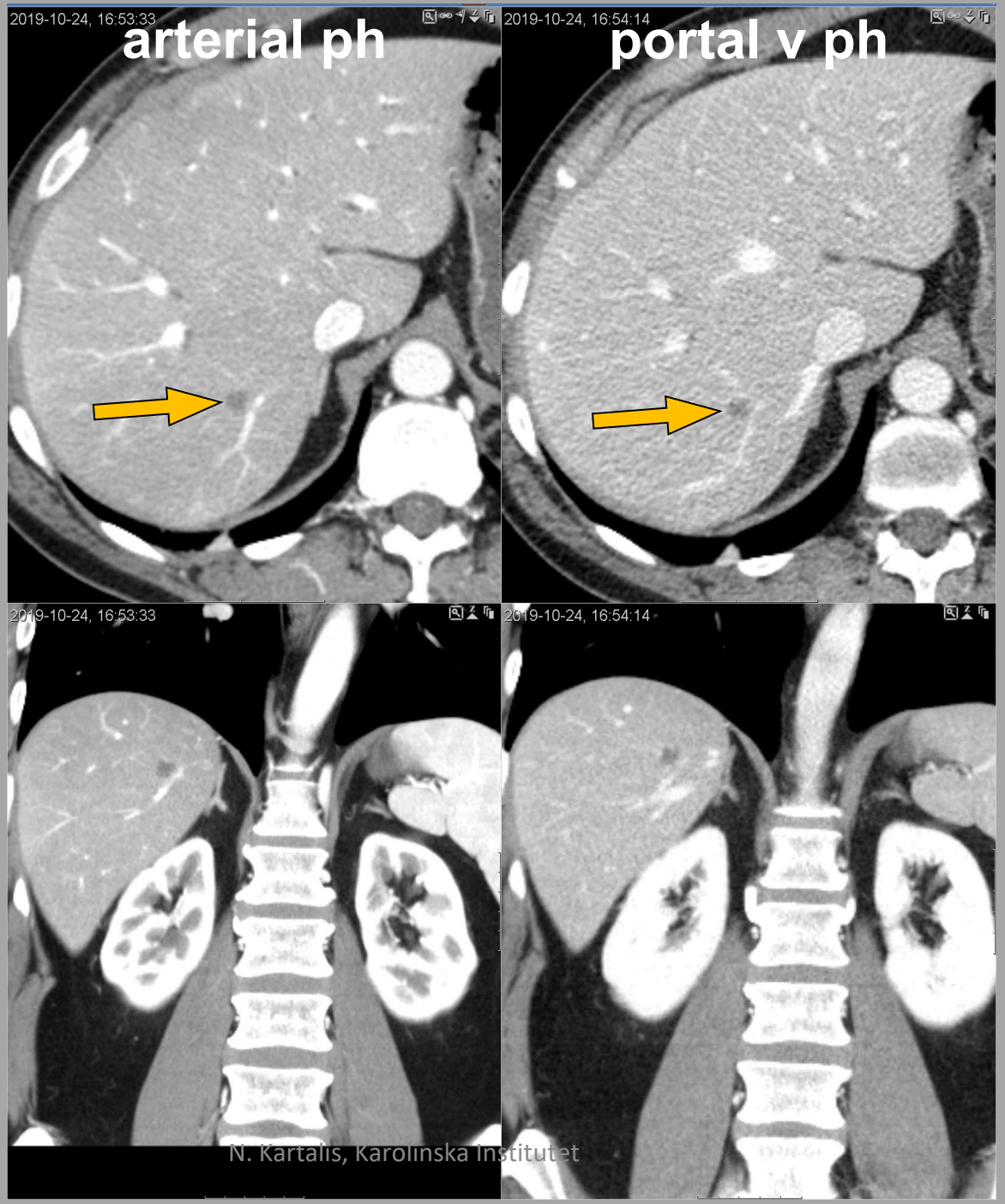




- 60 yo ♂, pancreatic Ca

Focal liver lesions @ CT



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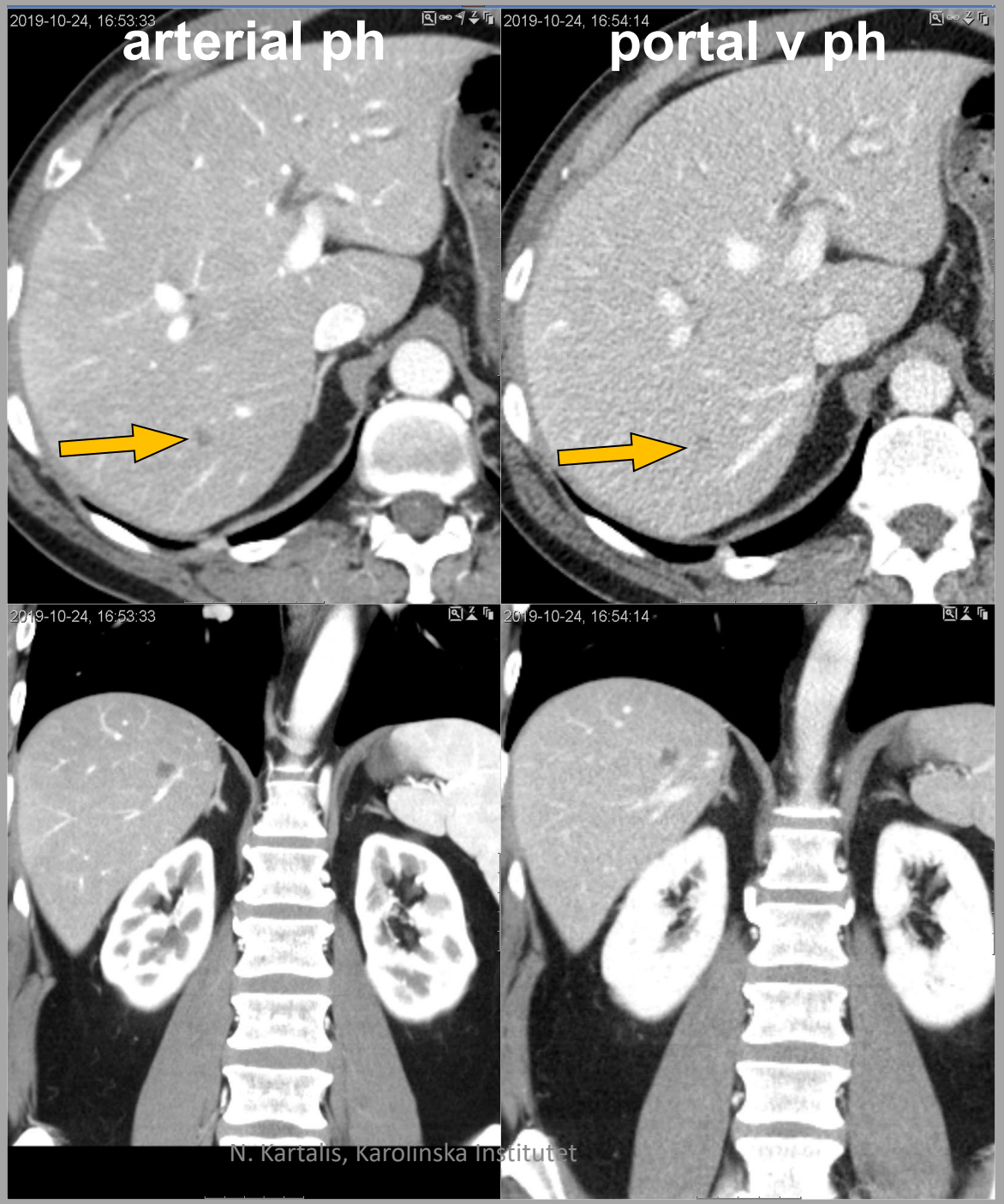


Question 2

- 60 yo ♂, pancreatic Ca

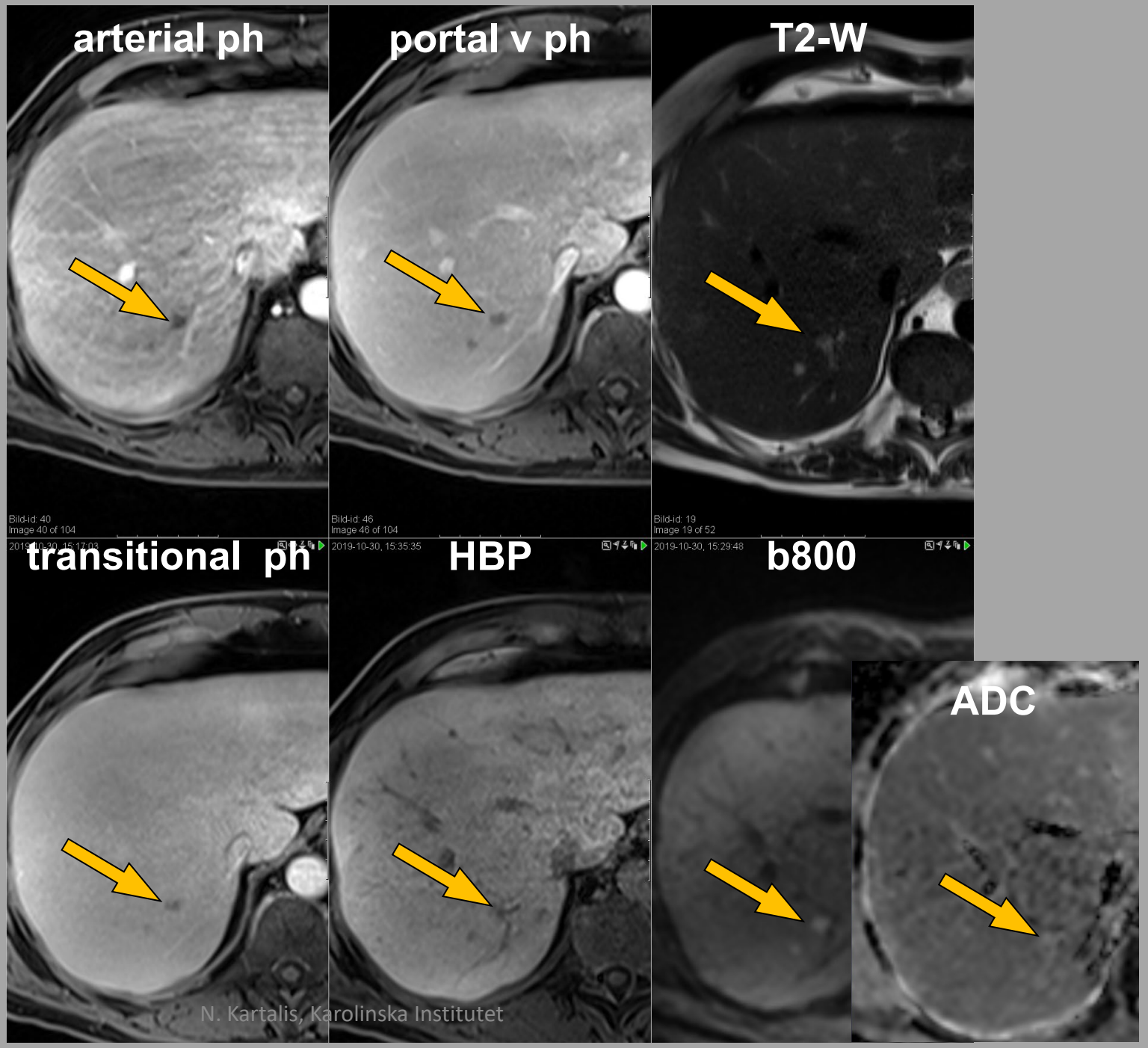
Focal liver lesions @ CT

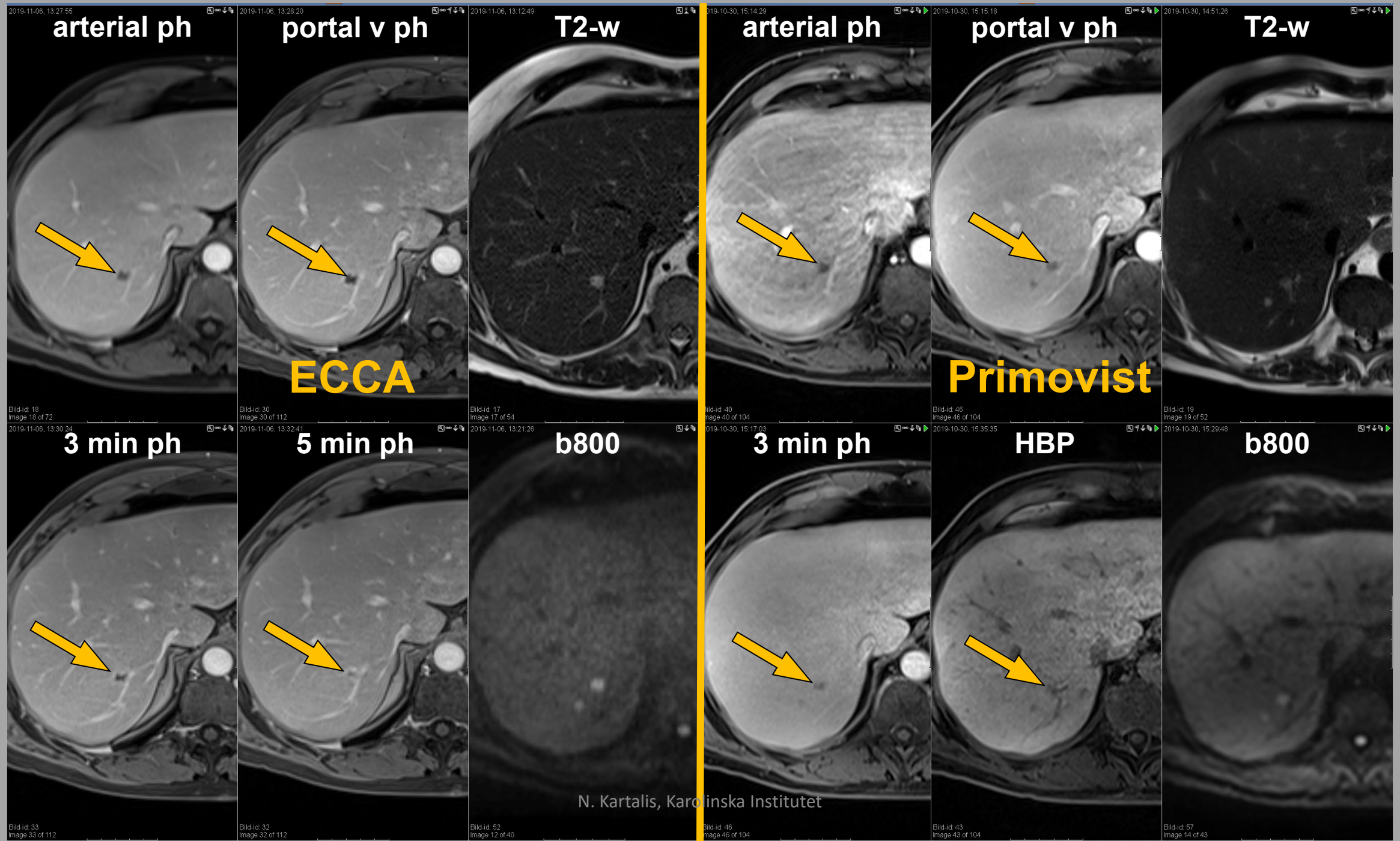
- The lesions are:

A. Cysts

B. Hemangiomas

C. Liver mets




arterial ph
portal v ph
T2-w
ECCA
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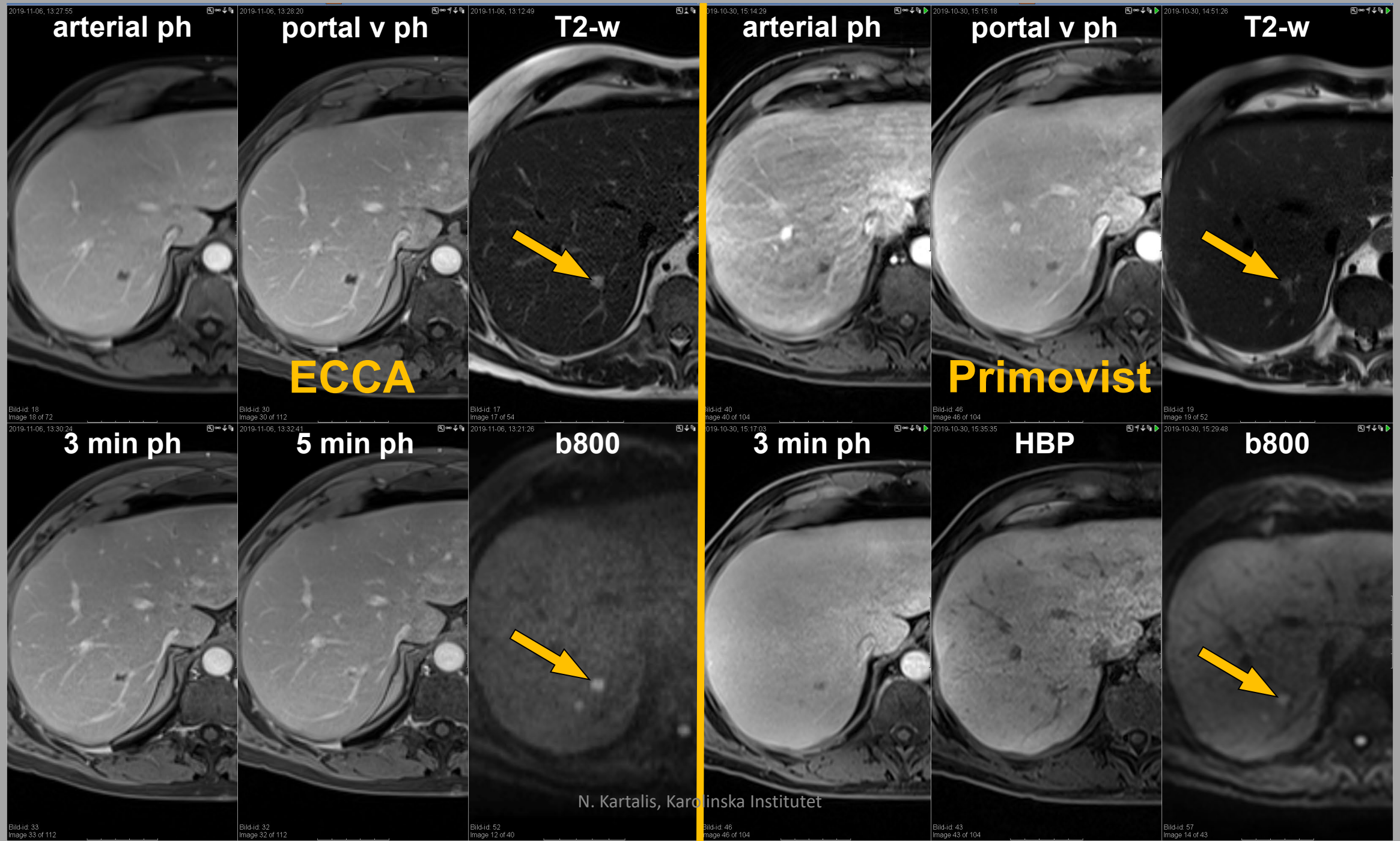
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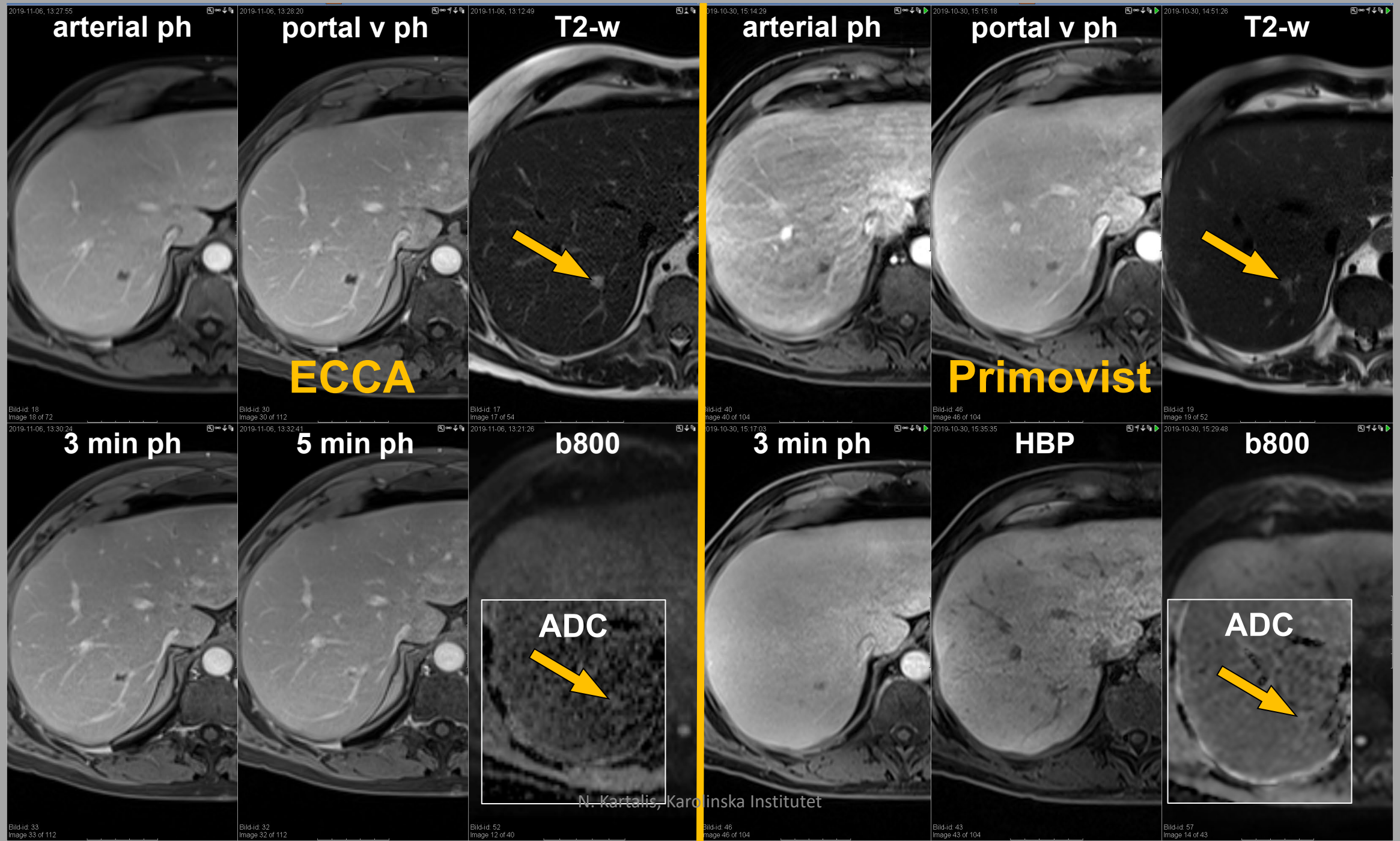
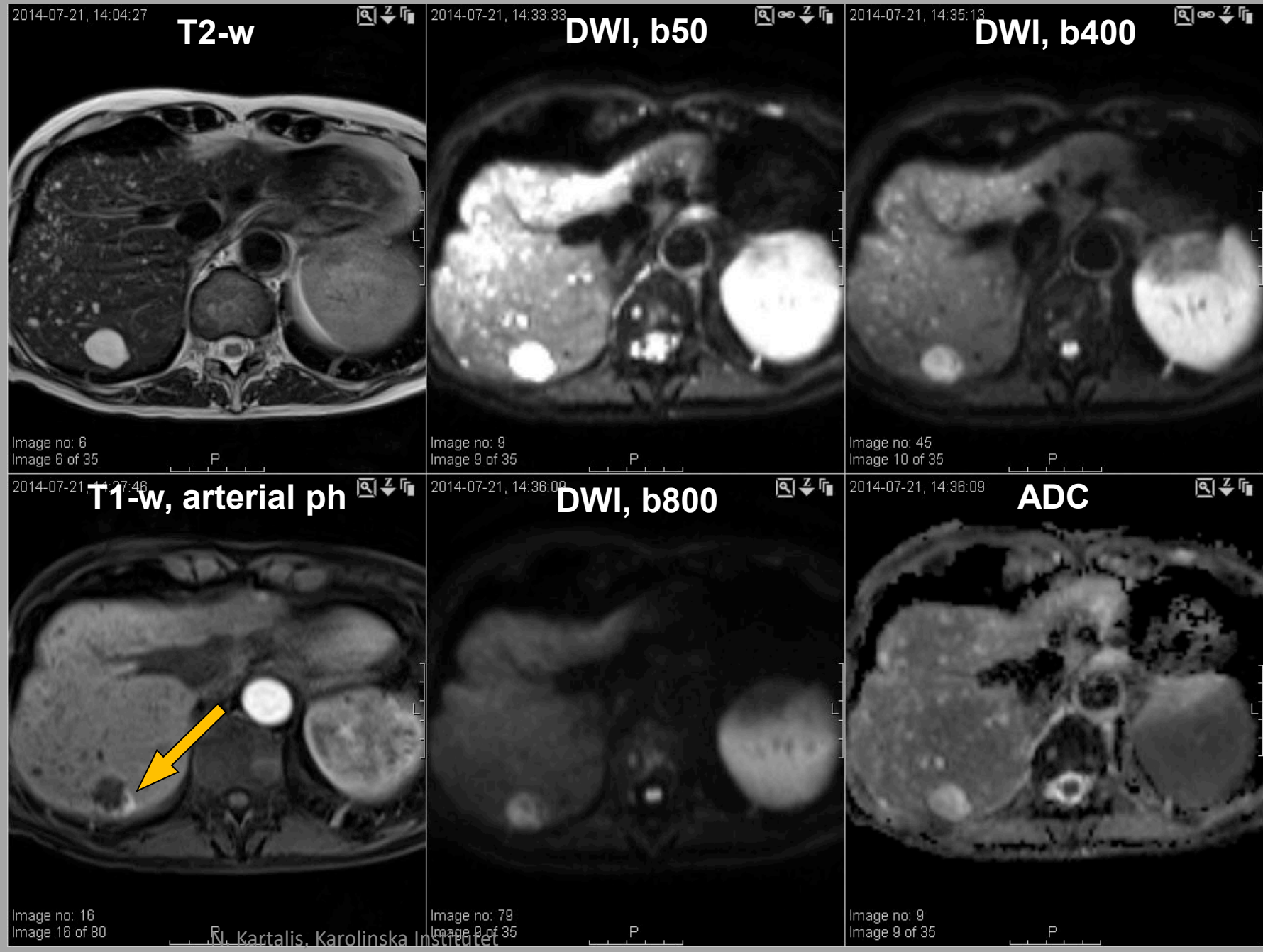


- Hemangioma
  - ➢ Typical CE-pattern ✅



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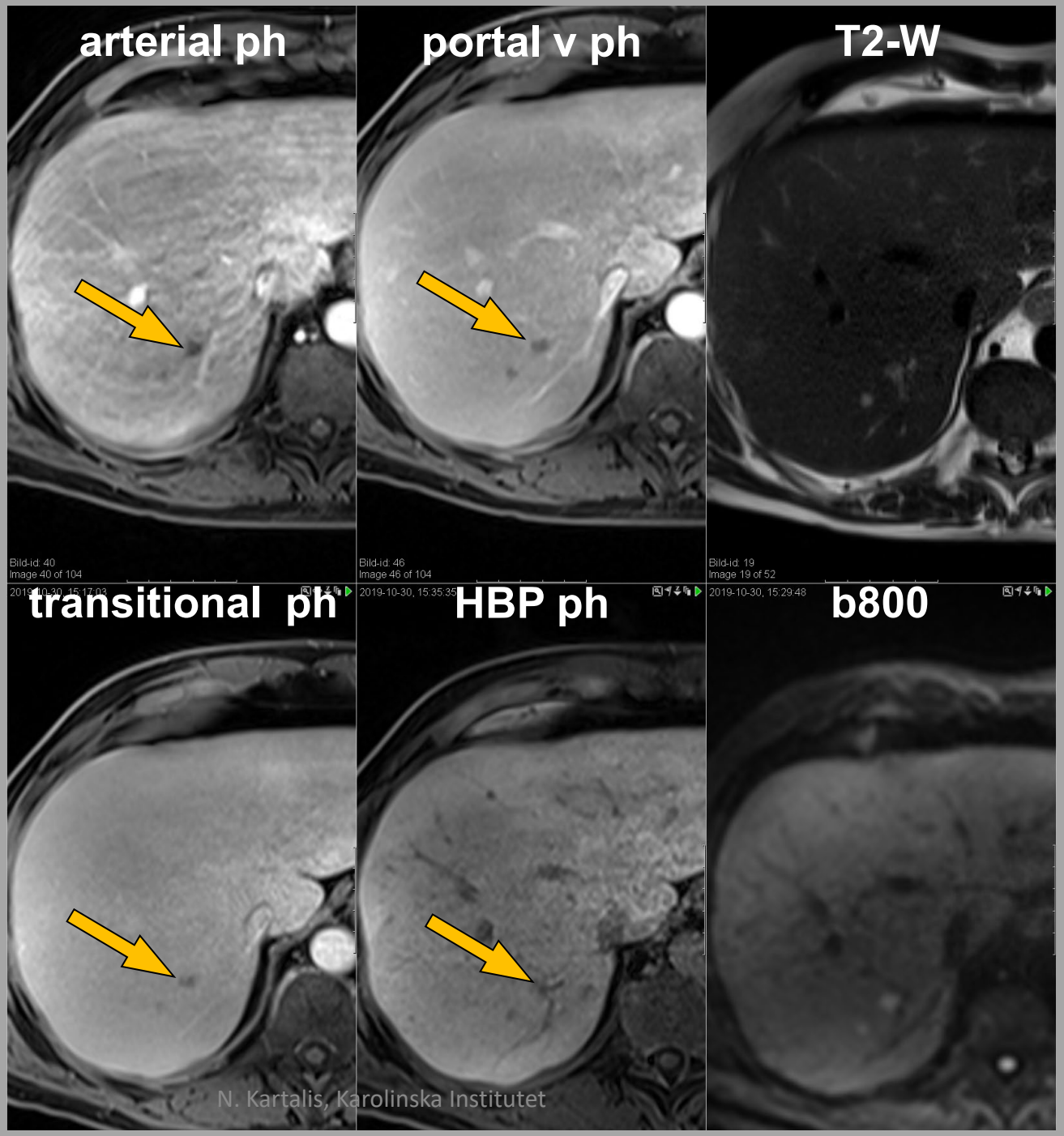

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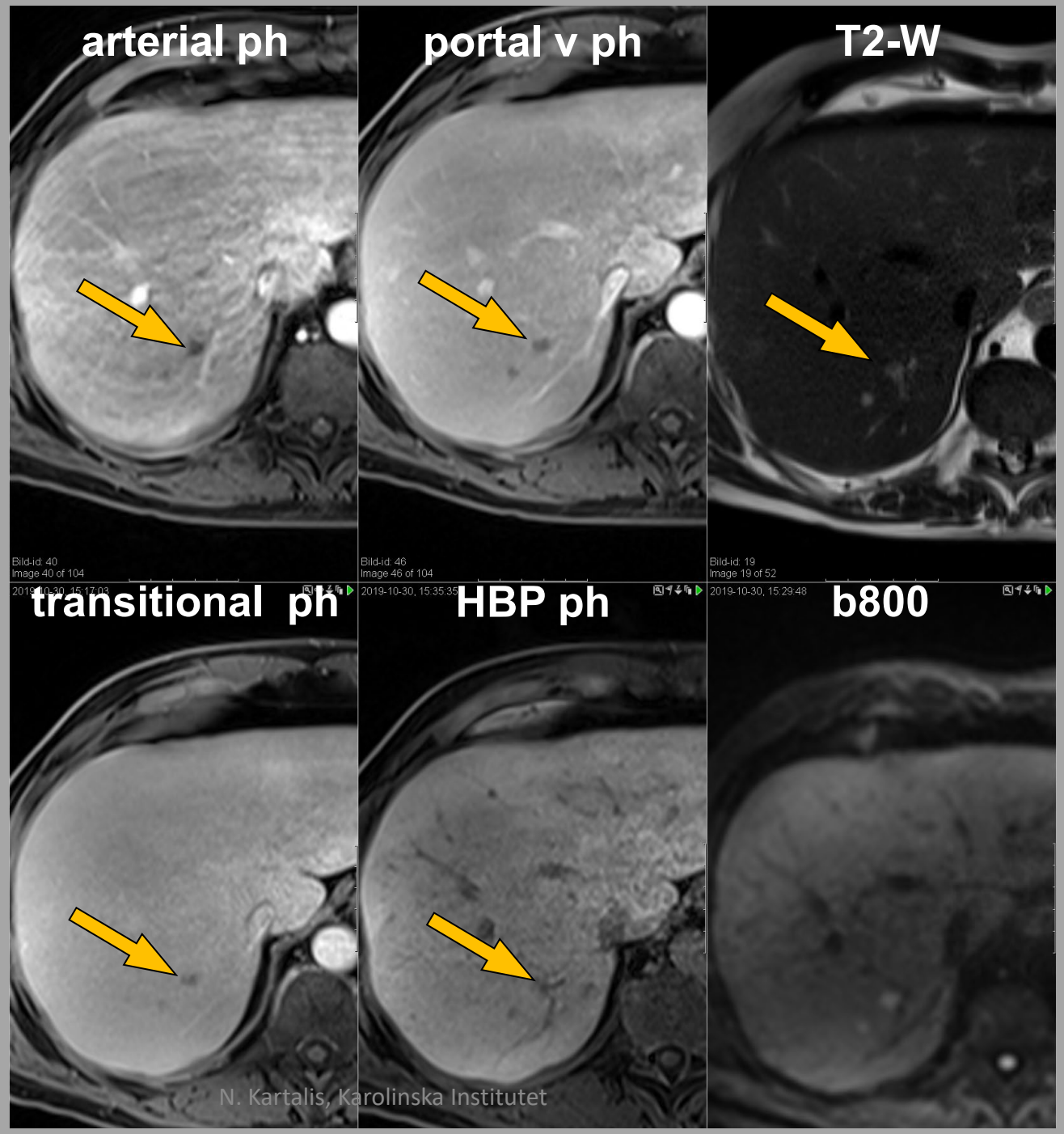
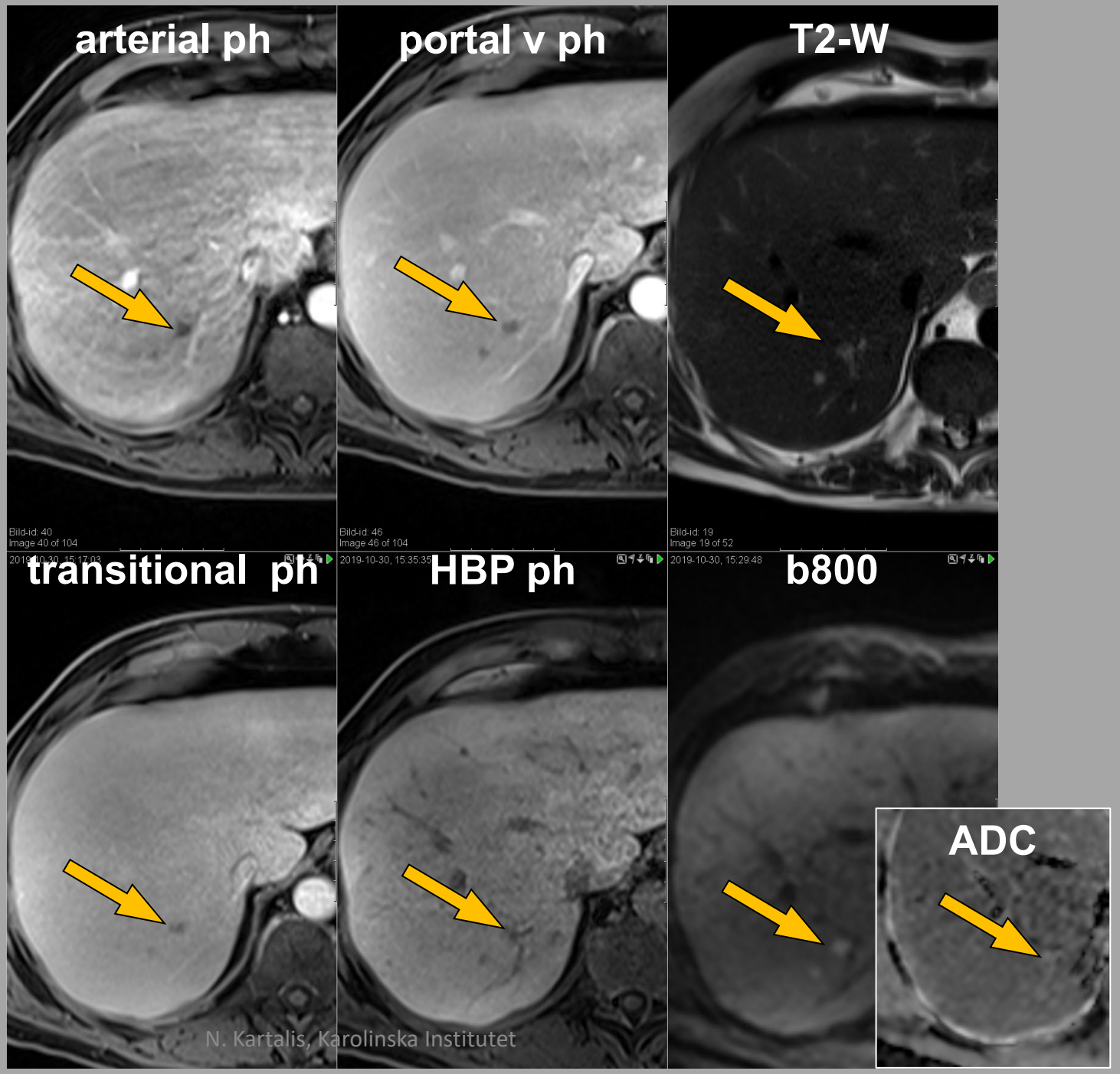
  - ➢ High SI T2-w



- Hemangioma
  - ➢ Typical CE-pattern ✅
  - ➢ High SI T2-w
  - ➢ No impeded diffusion



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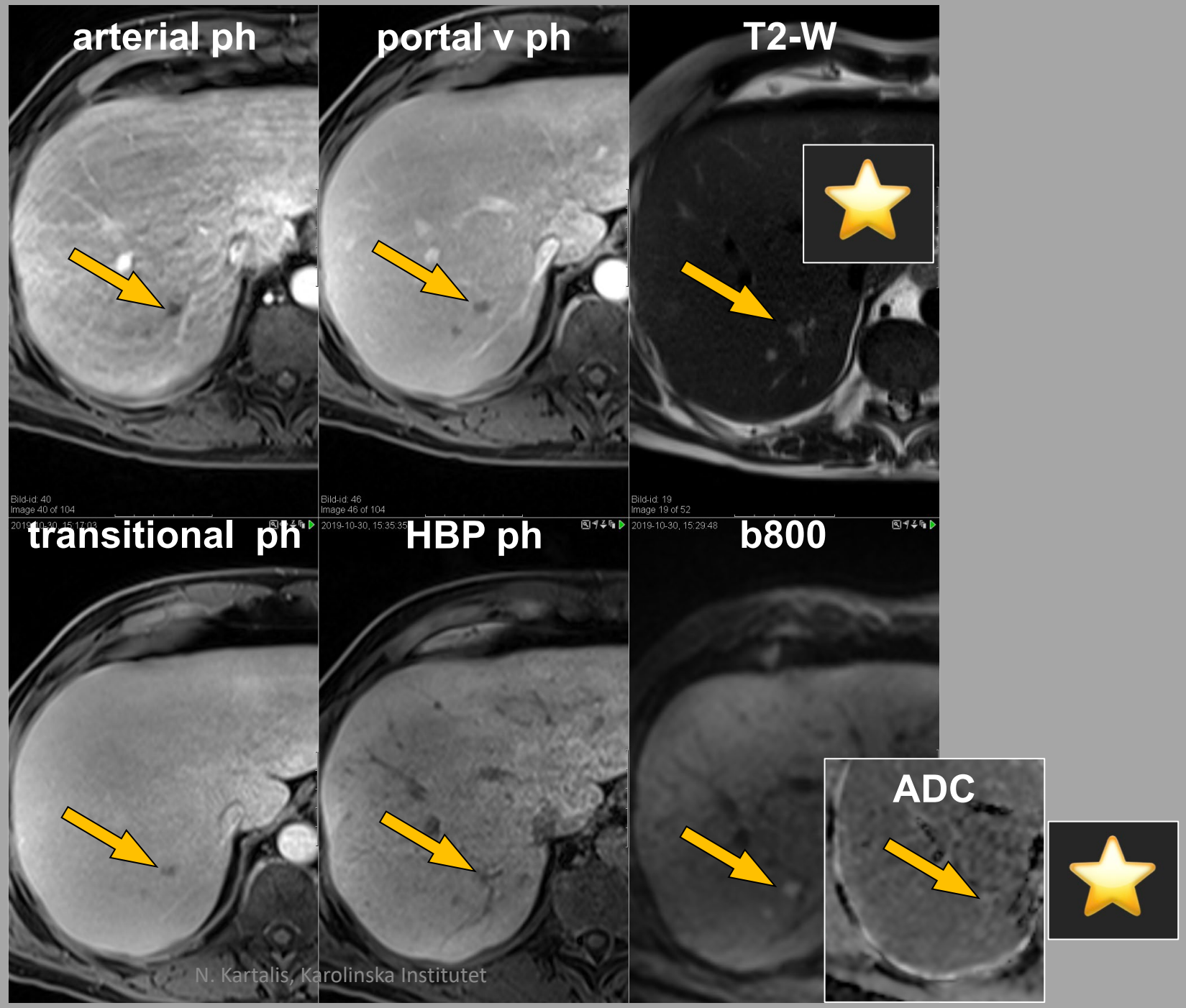
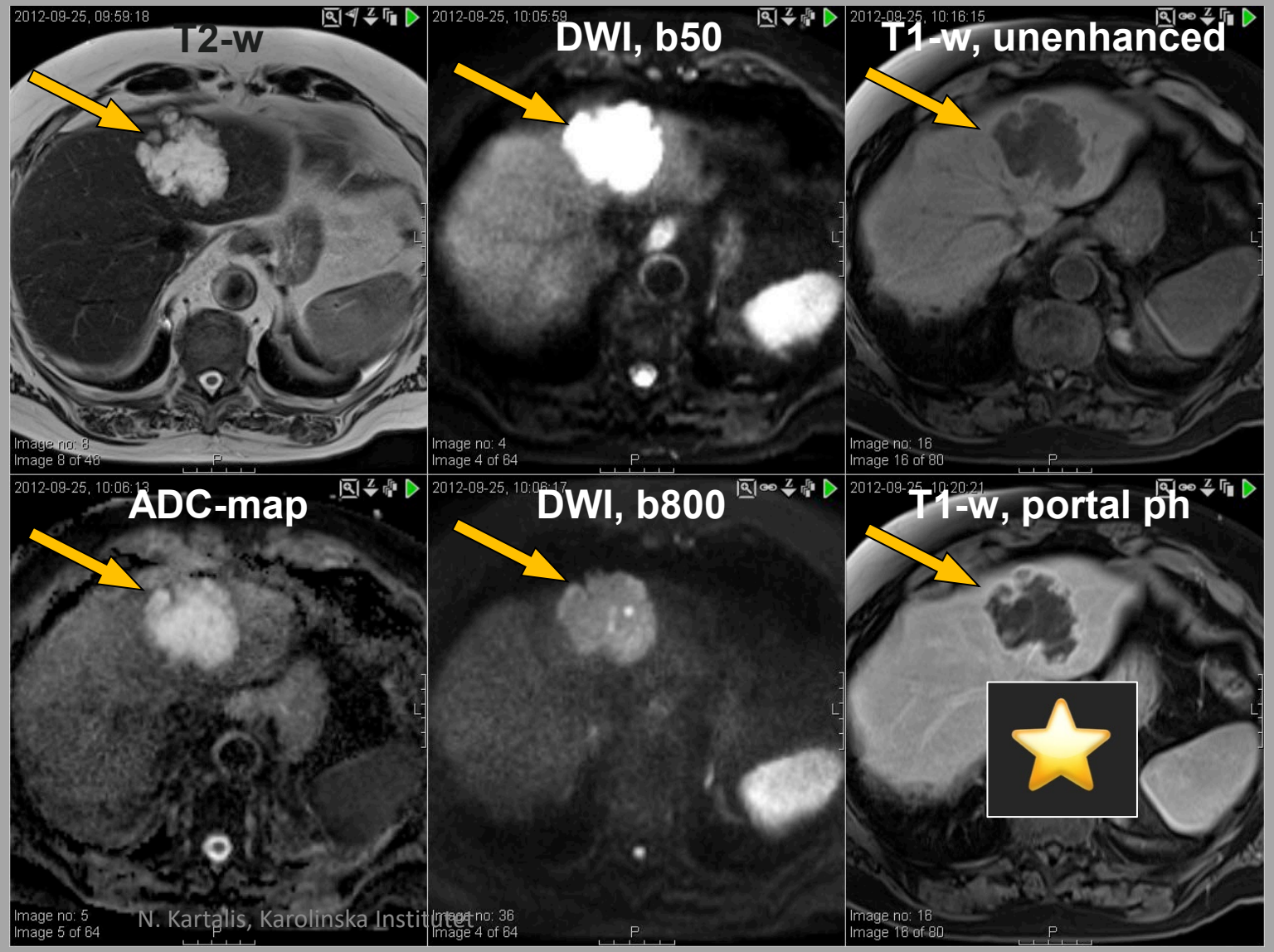


Caveat

- Mucinous/necrotic/ cystic mets

➢ Benign-mimicker



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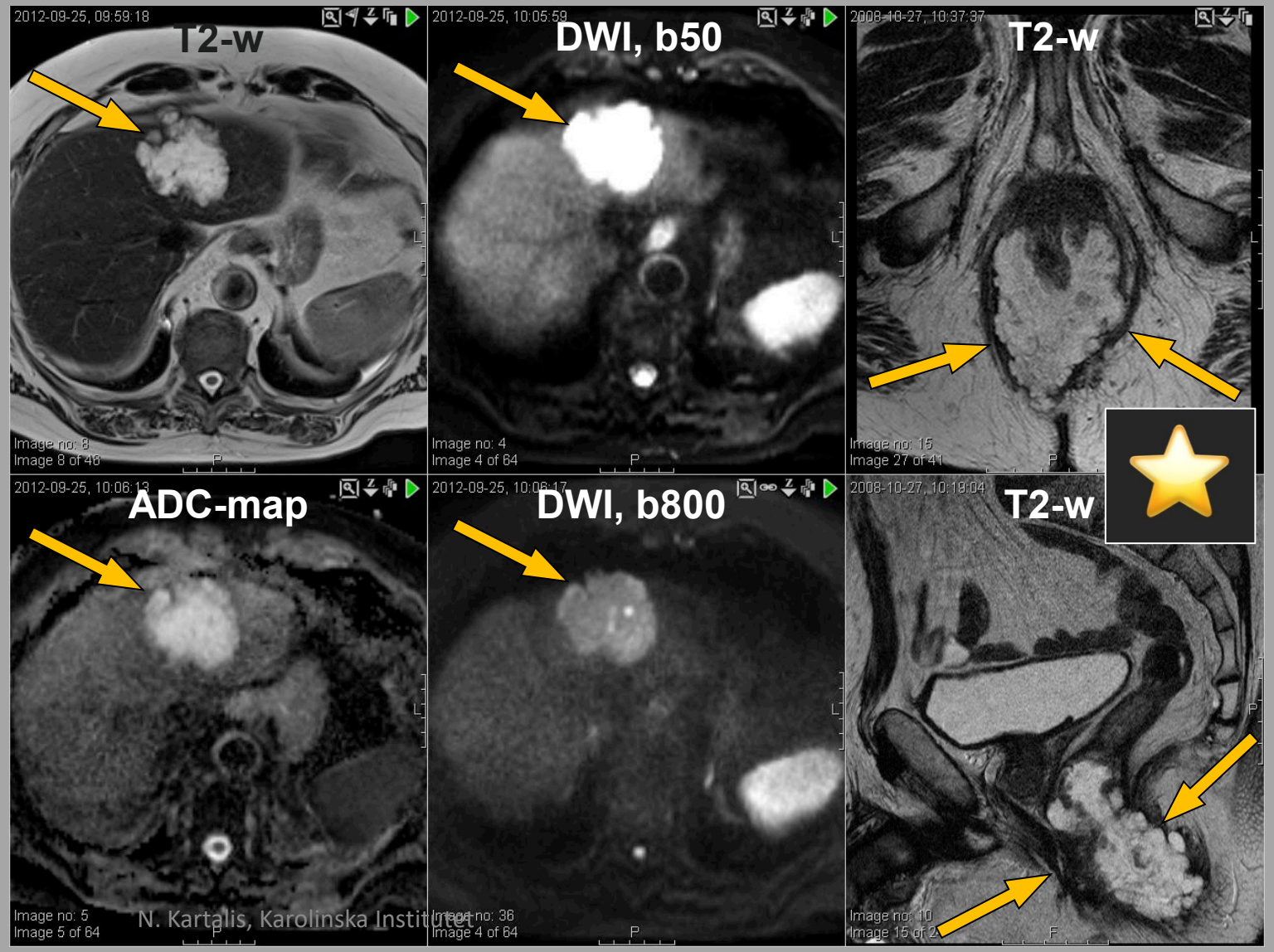
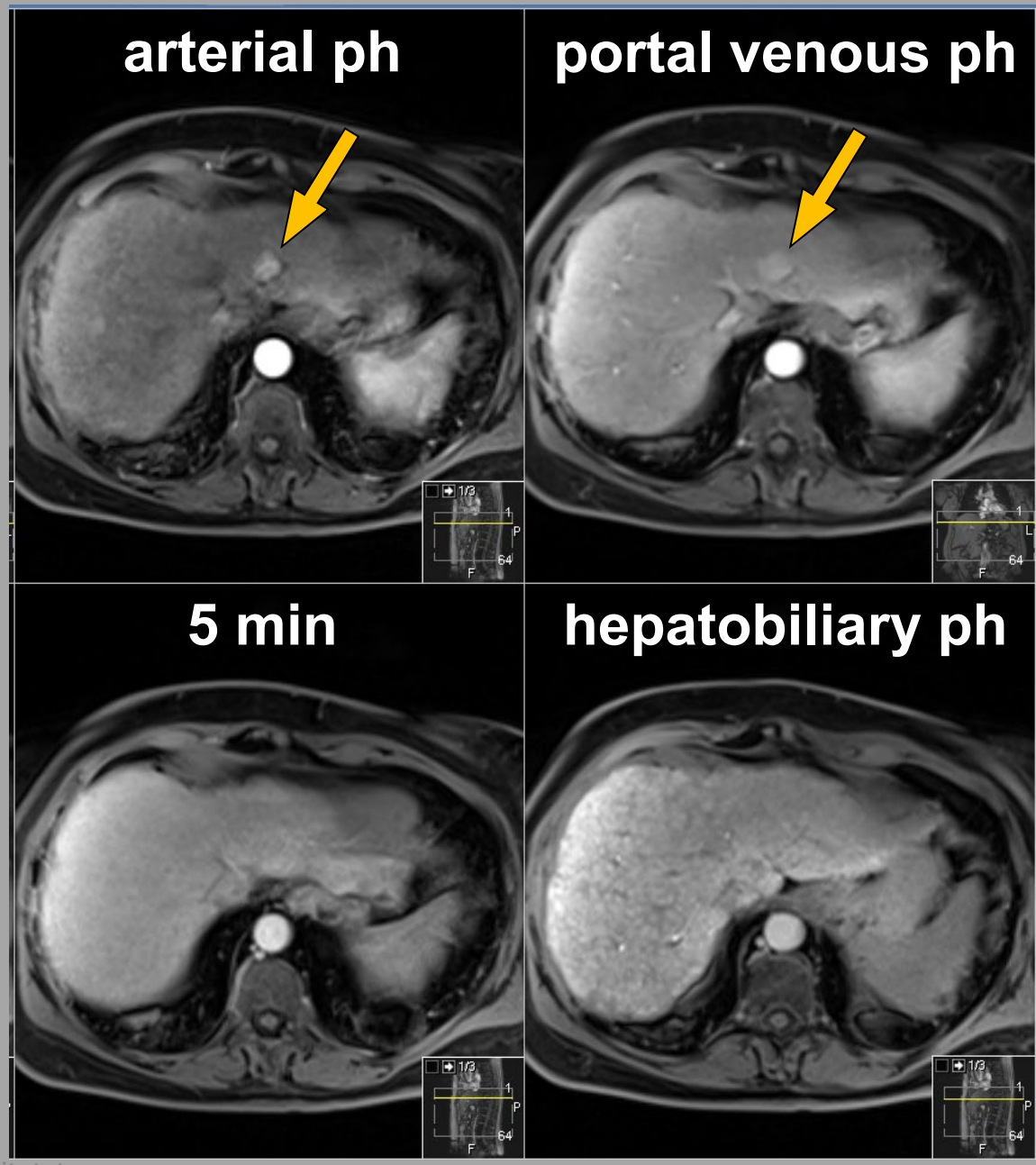


- 66 yo ♂, cirrhosis. Focal liver lesion @ surveillance US



Question 3

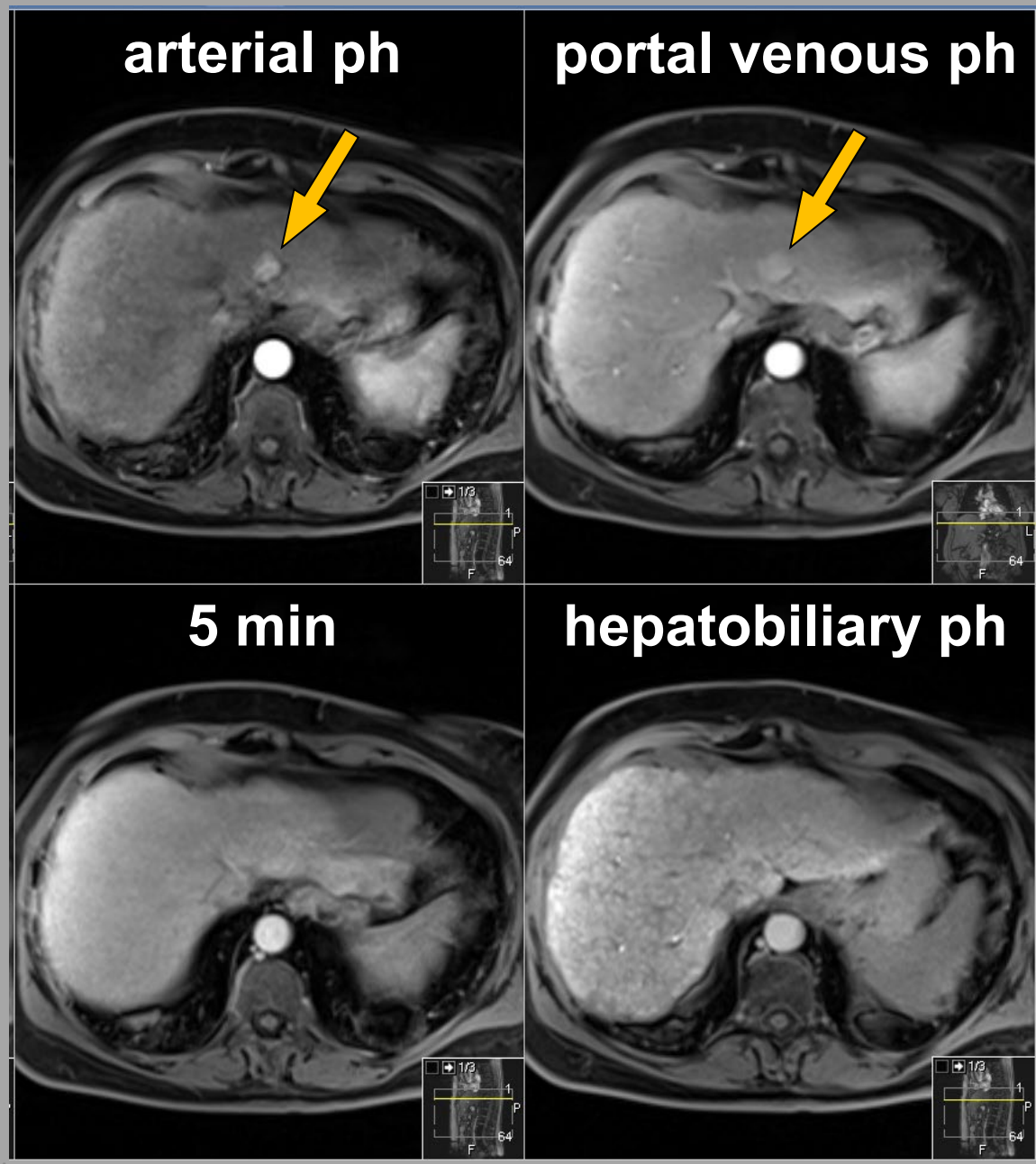
- 66 yo ♂, cirrhosis. Focal liver lesion @ surveillance US
- The lesion is/shows:

A. Homogenous APHE

B. No vascular washout

C. HBP-isointense

D. …unclear. I need more images to decide!



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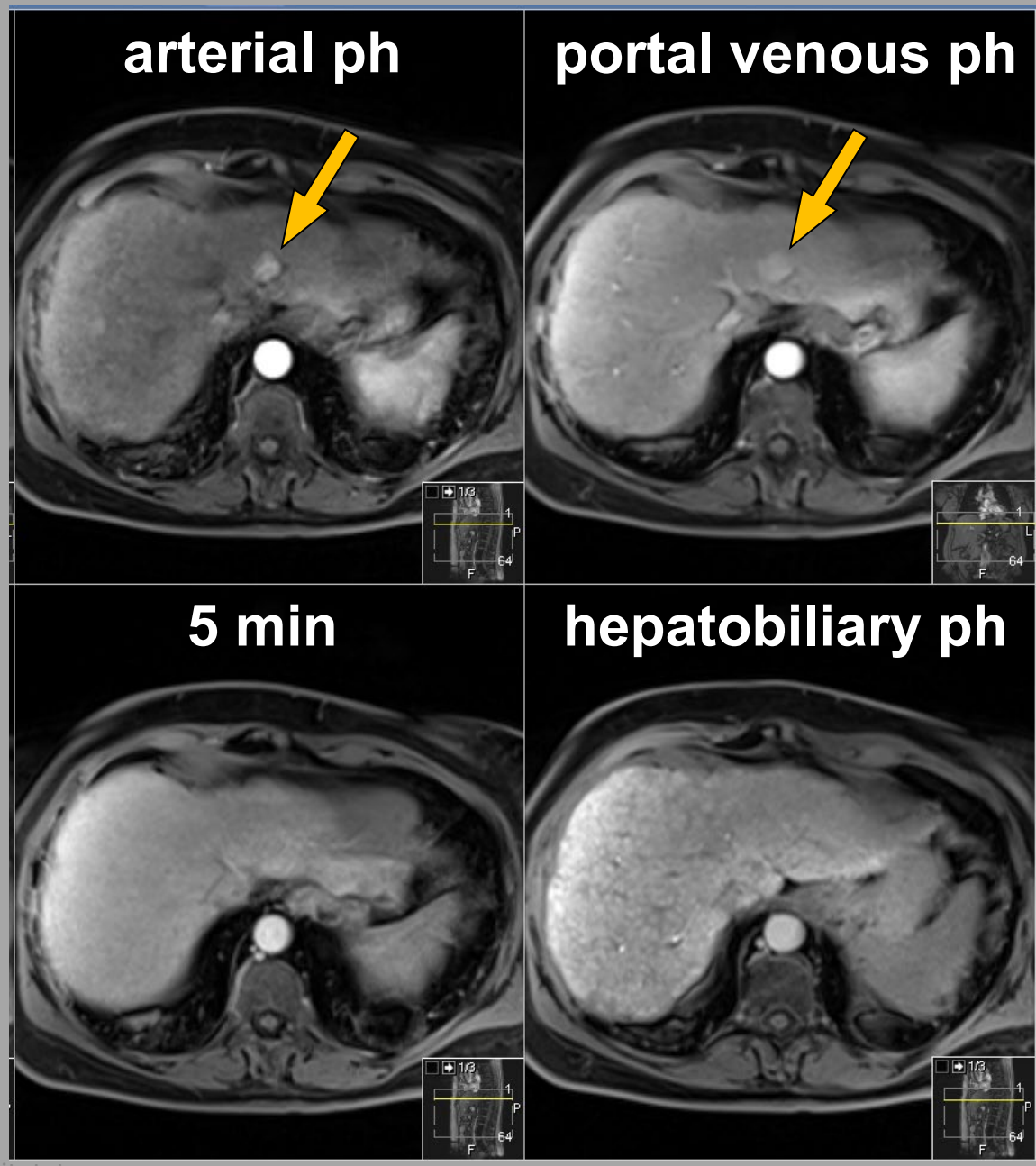

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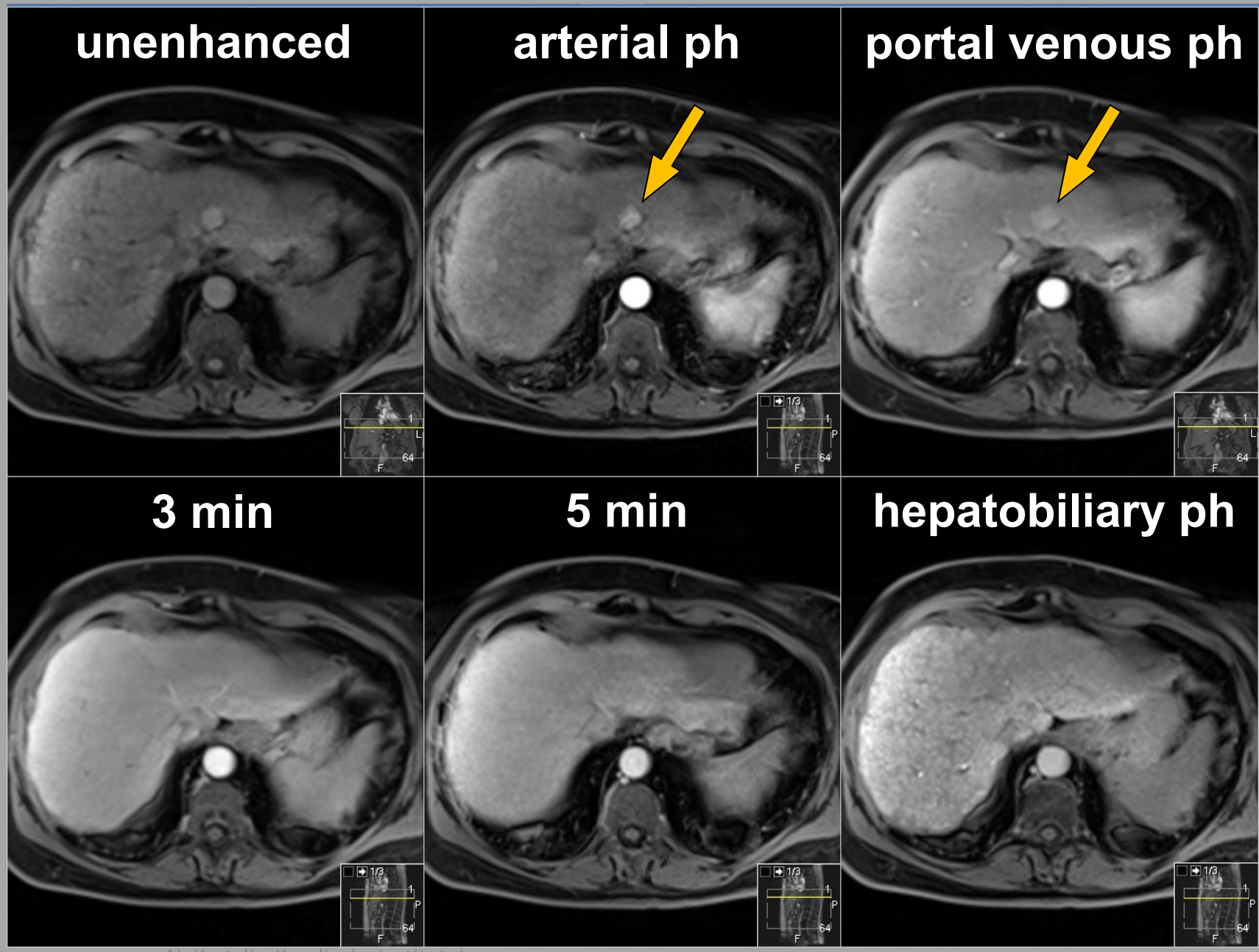

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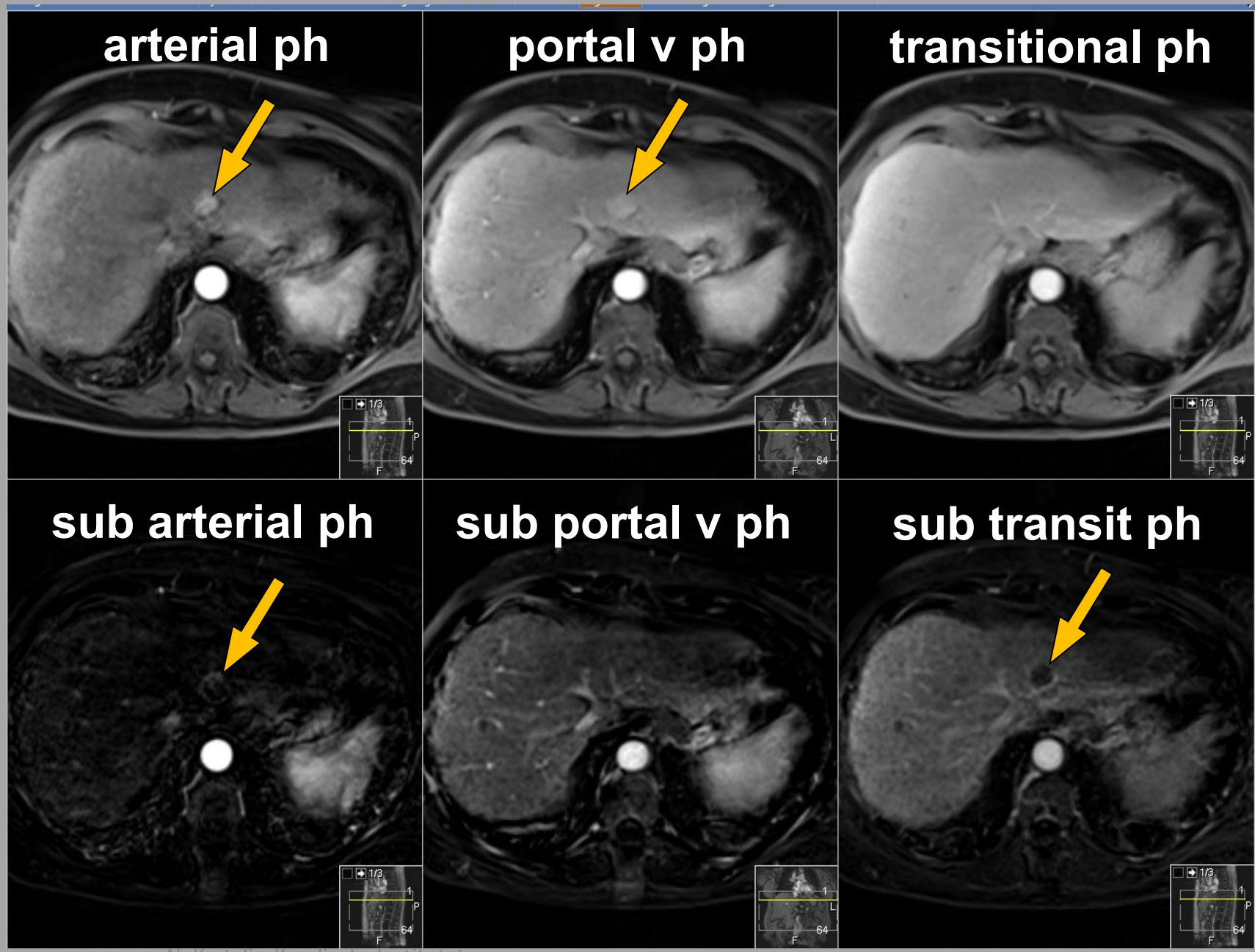

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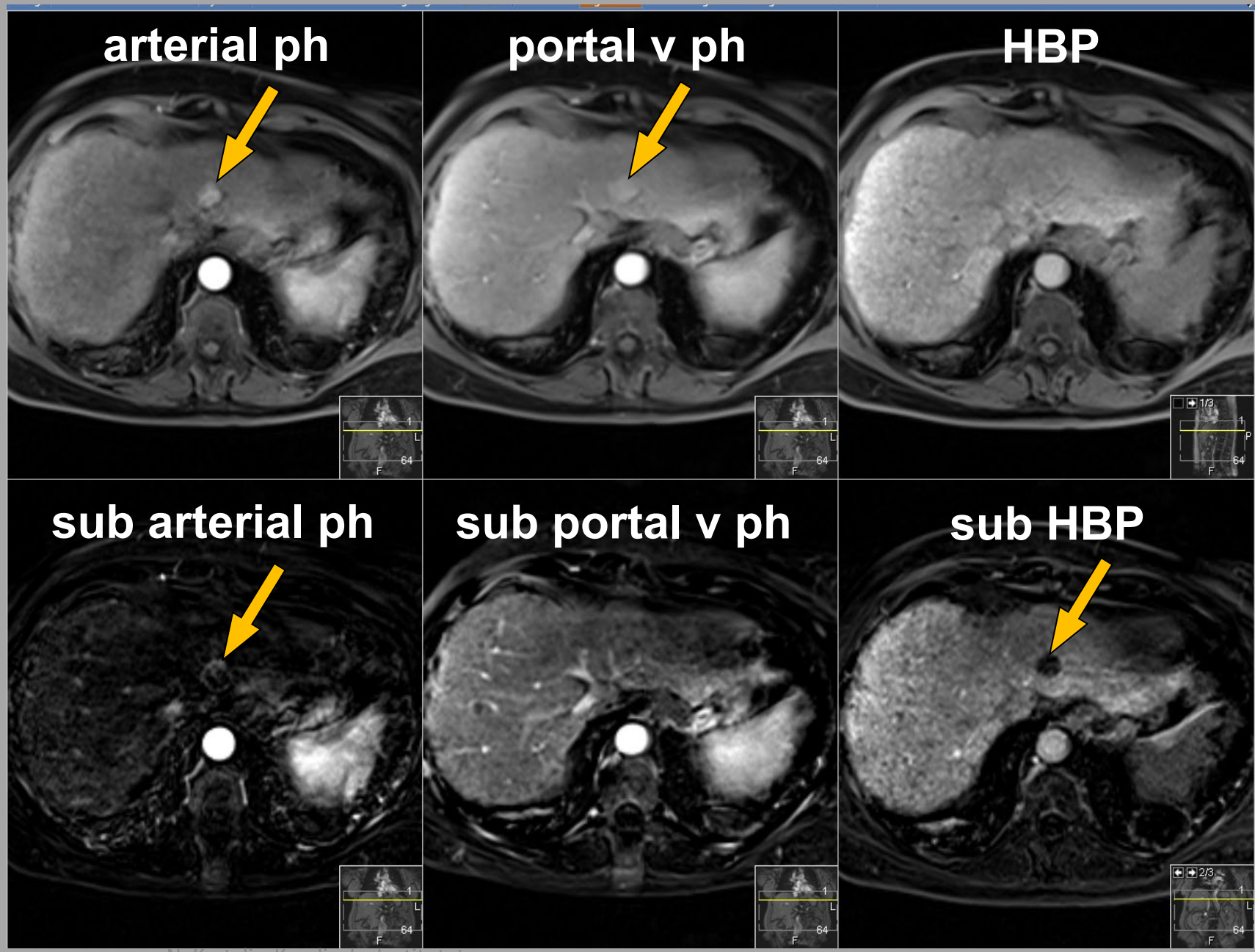

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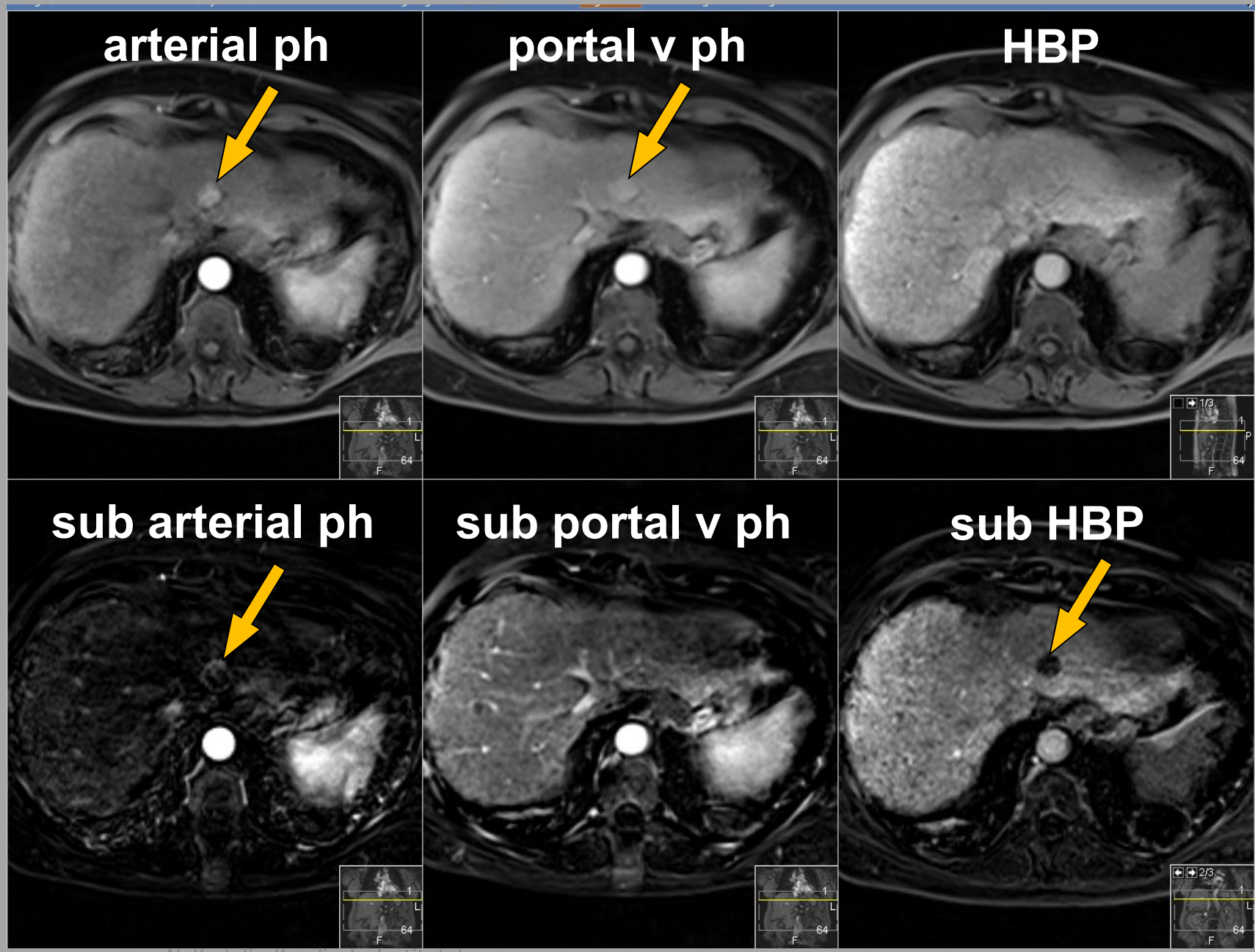

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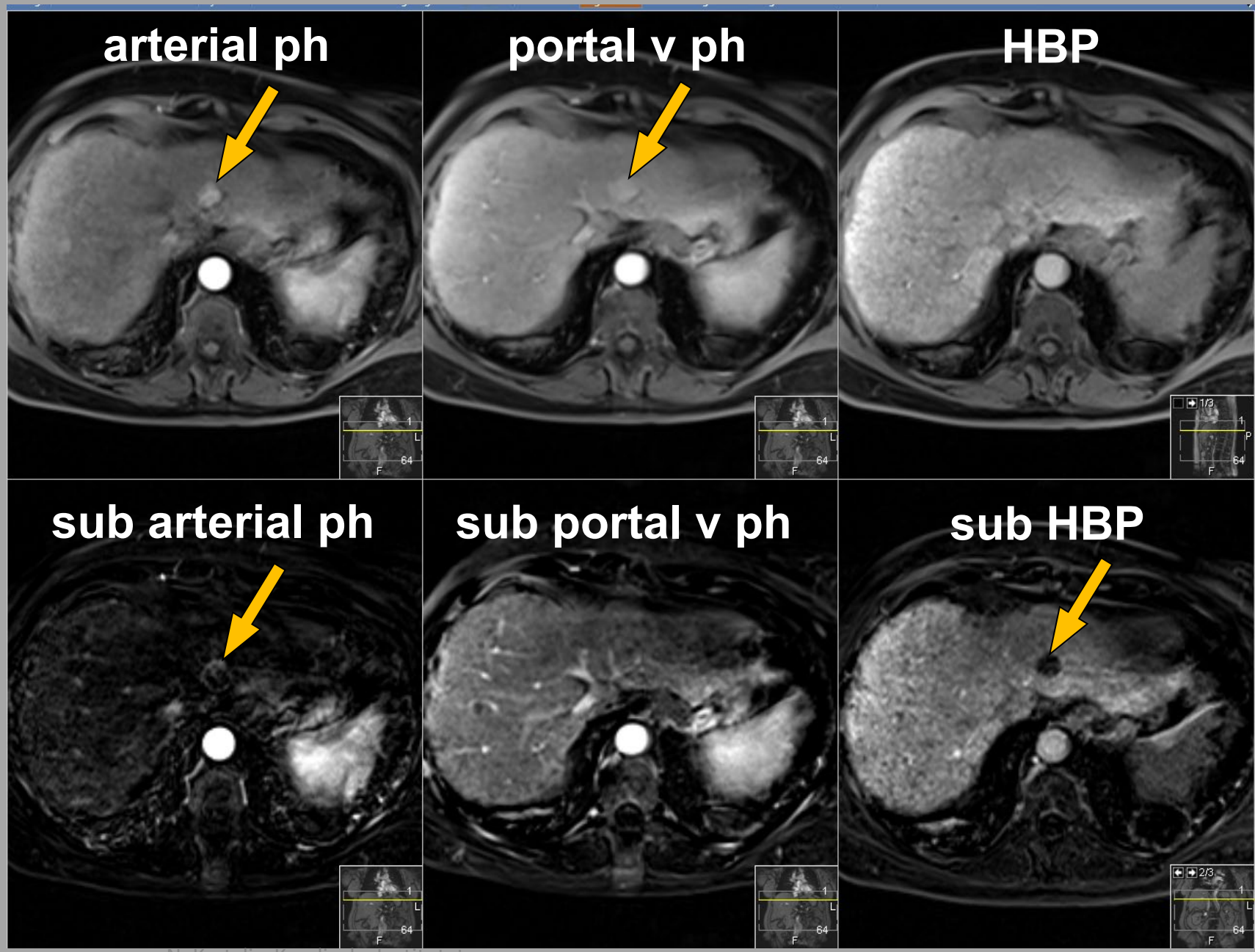

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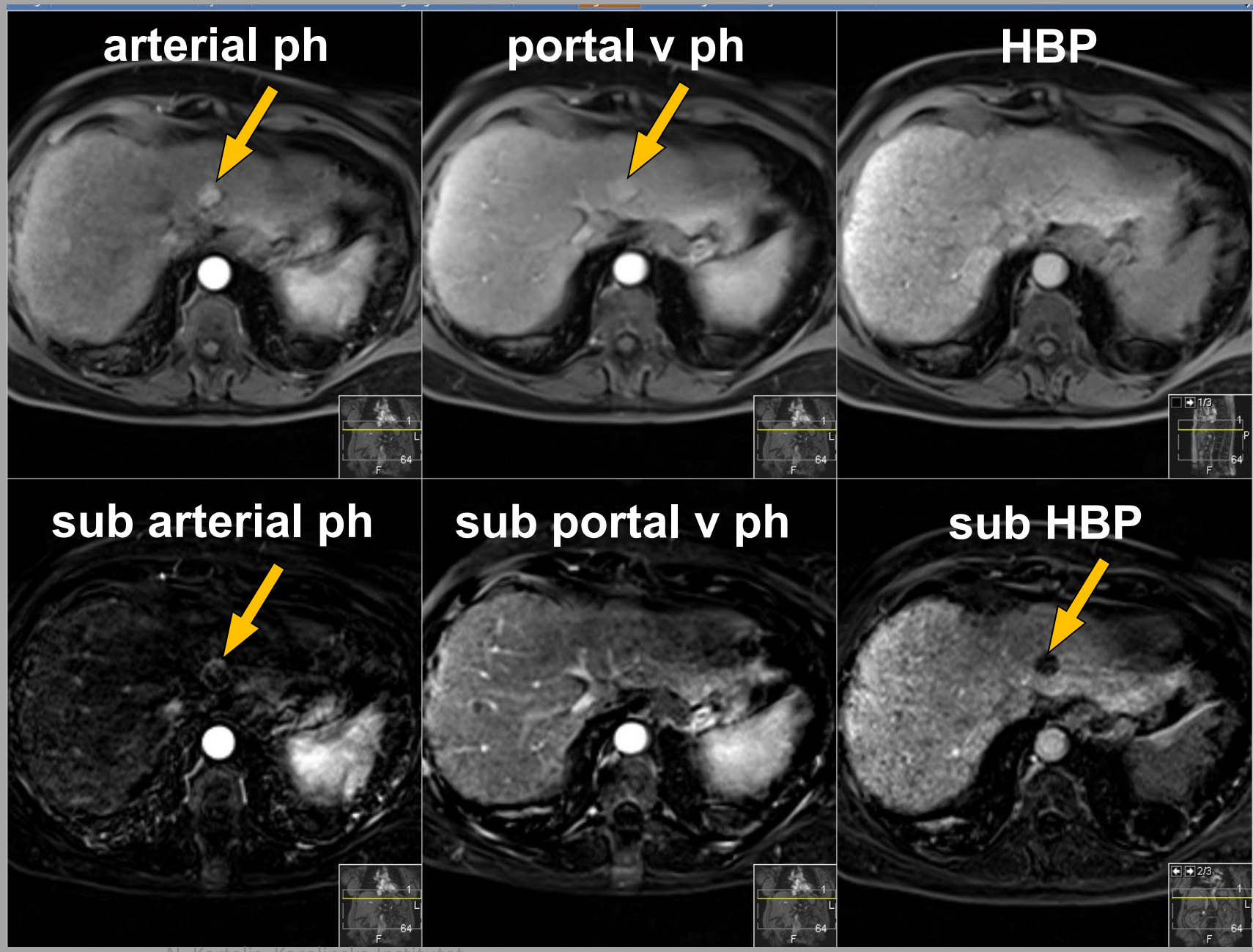
- 66 yo ♂, cirrhosis. Focal liver lesion @ surveillance US
- The lesion is most likely:

A. Malignant (=HGDN-HCC)

B. Benign (=RN-LGDN)



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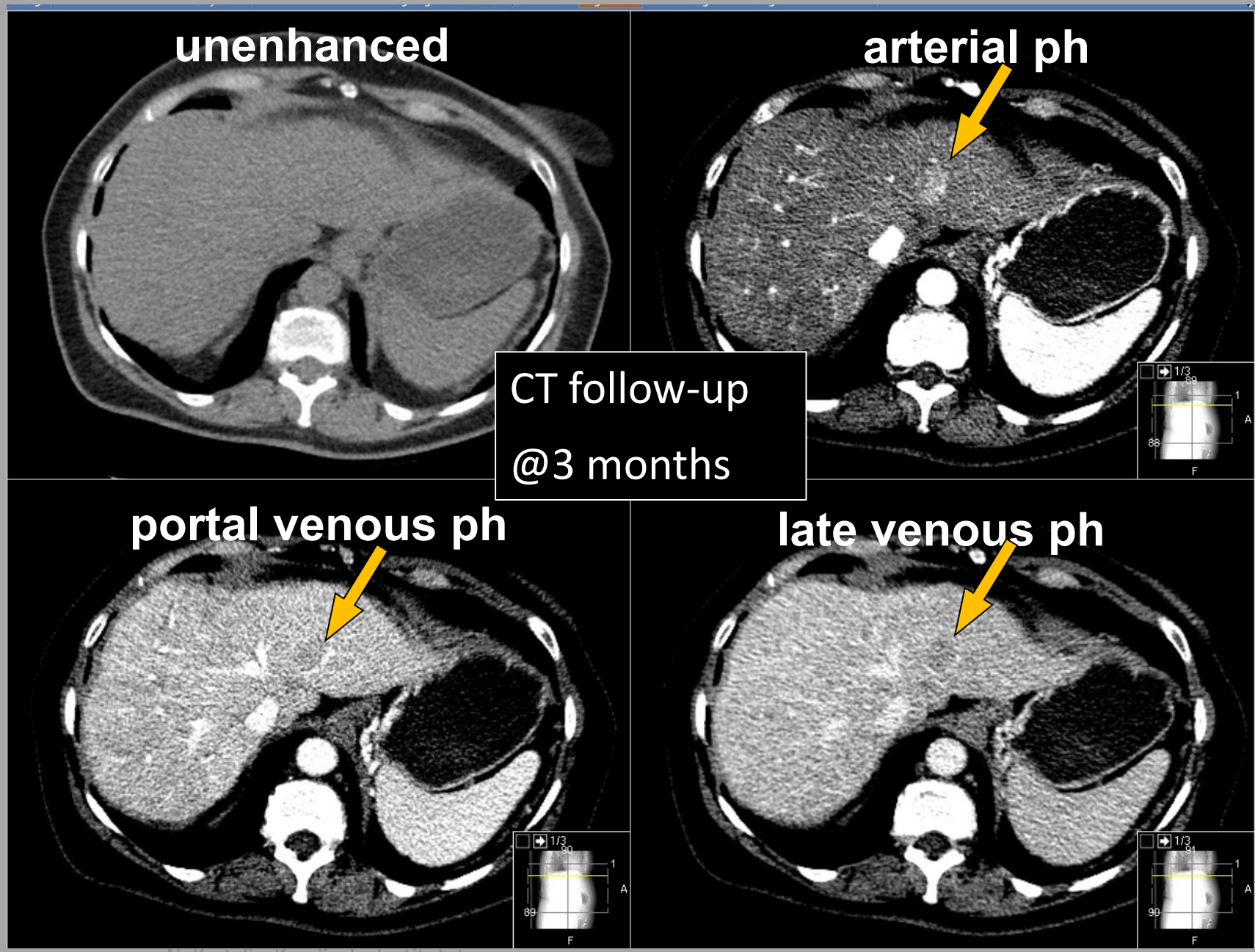

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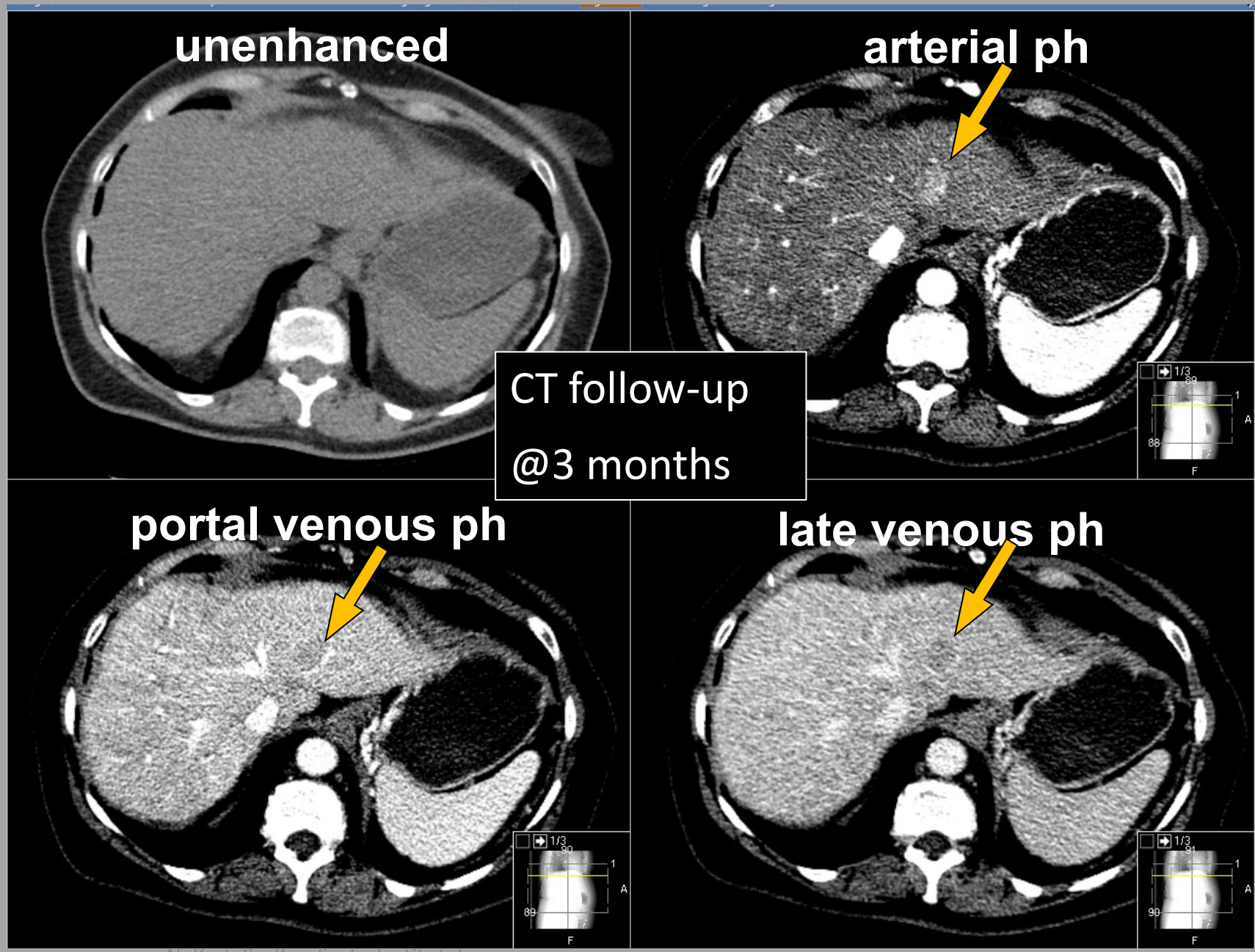

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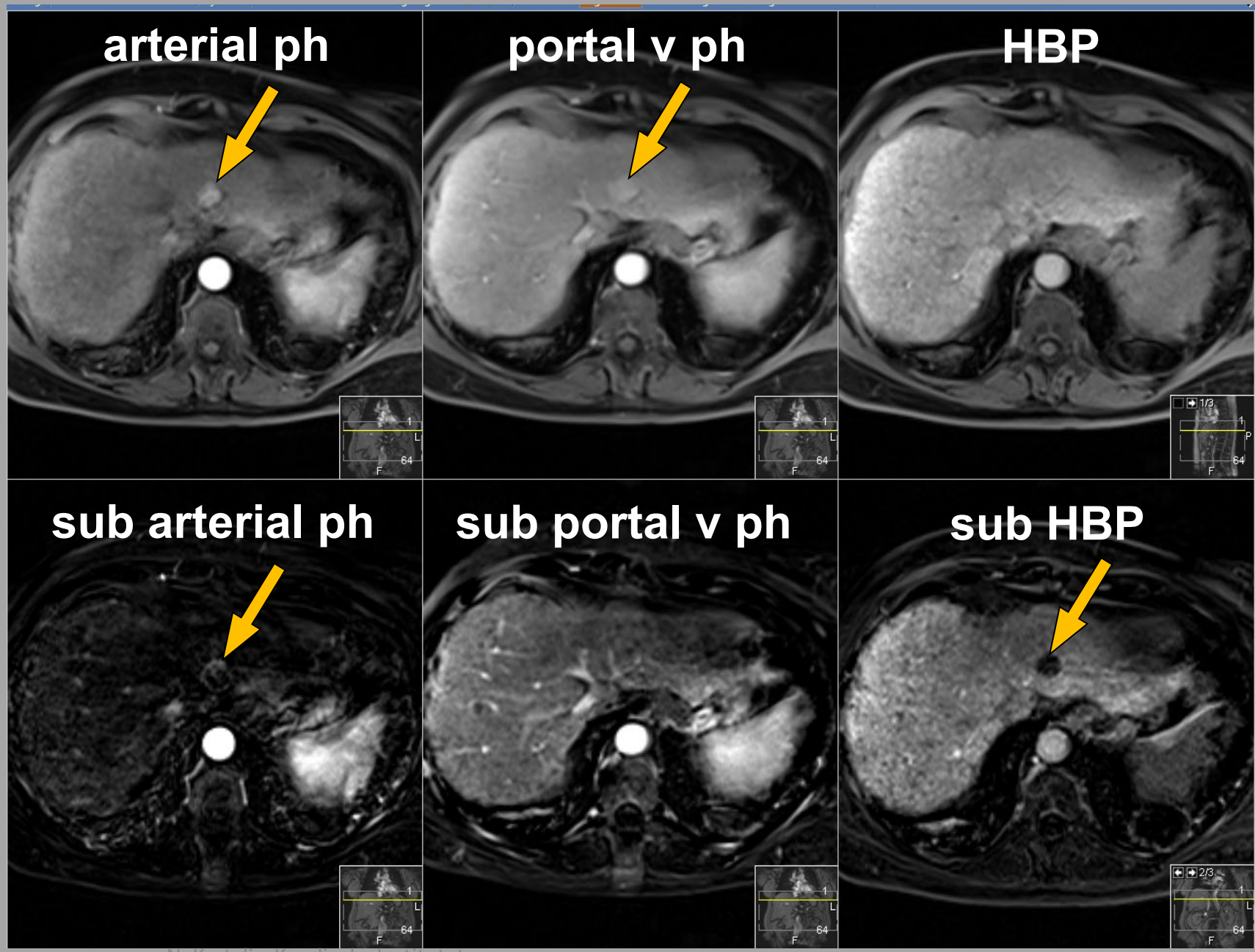

Qu

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liver les
surveill
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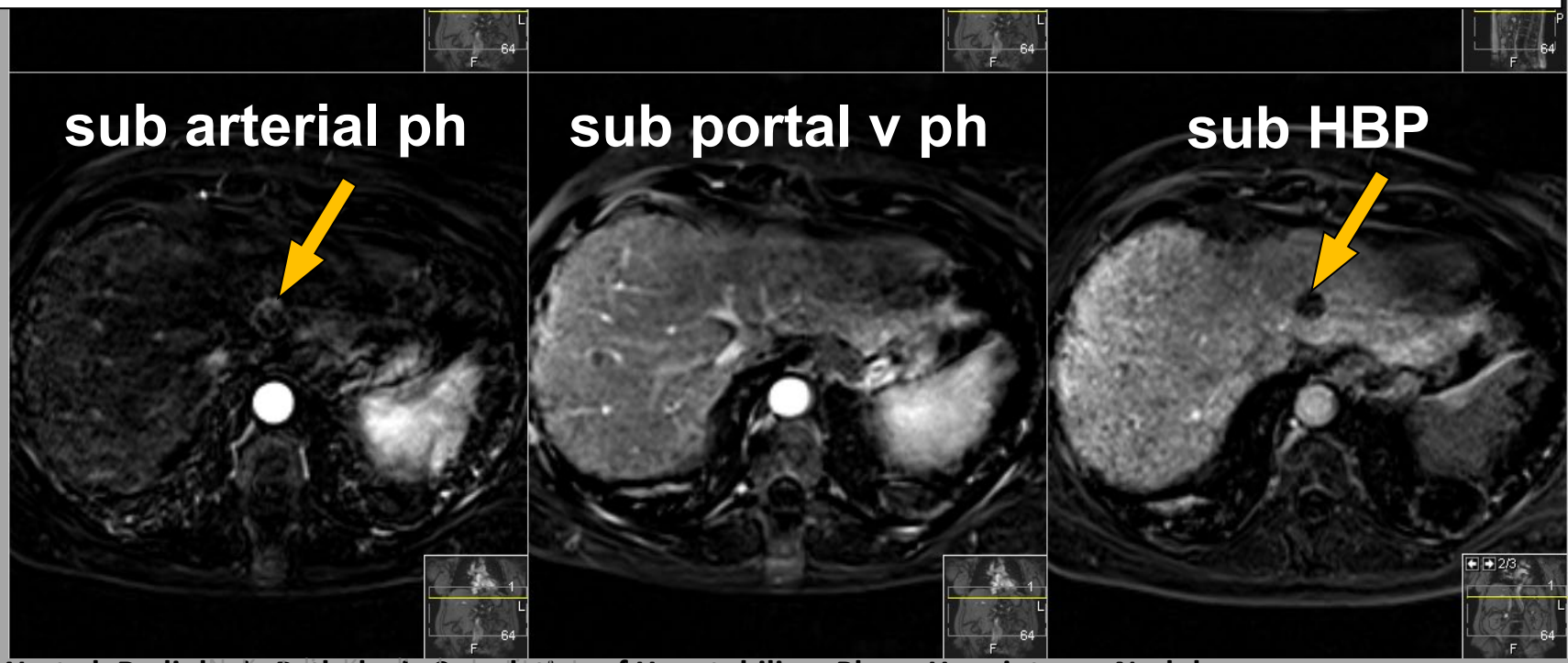
Radiology

ORIGINAL RESEARCH • GASTROINTESTINAL IMAGING

Radiologic-Pathologic Correlation of Hepatobiliary Phase Hypointense Nodules without Arterial Phase Hyperenhancement at Gadoxetic Acid–enhanced MRI: A Multicenter Study

≈65% HCC

≈27% HG-DN



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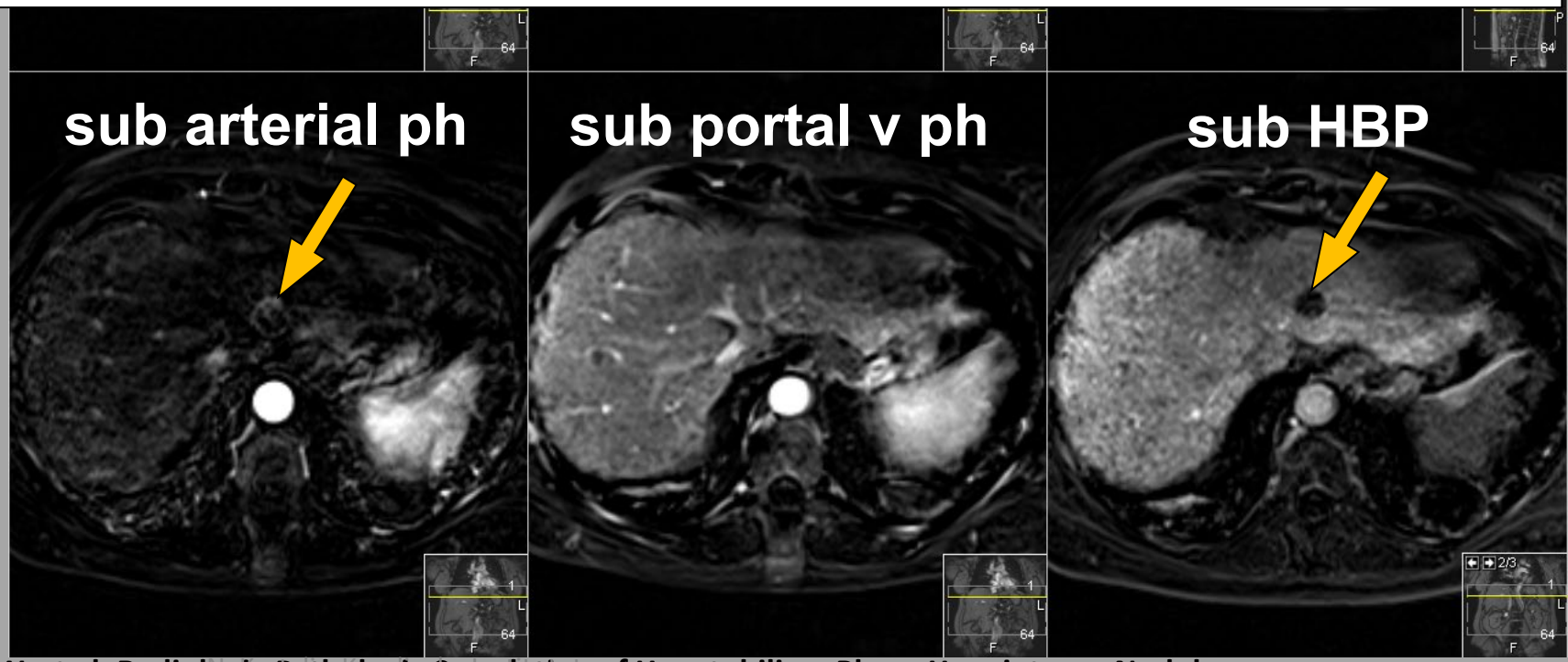
≈65% HCC

≈27% HG-DN

≈8% LG-DN



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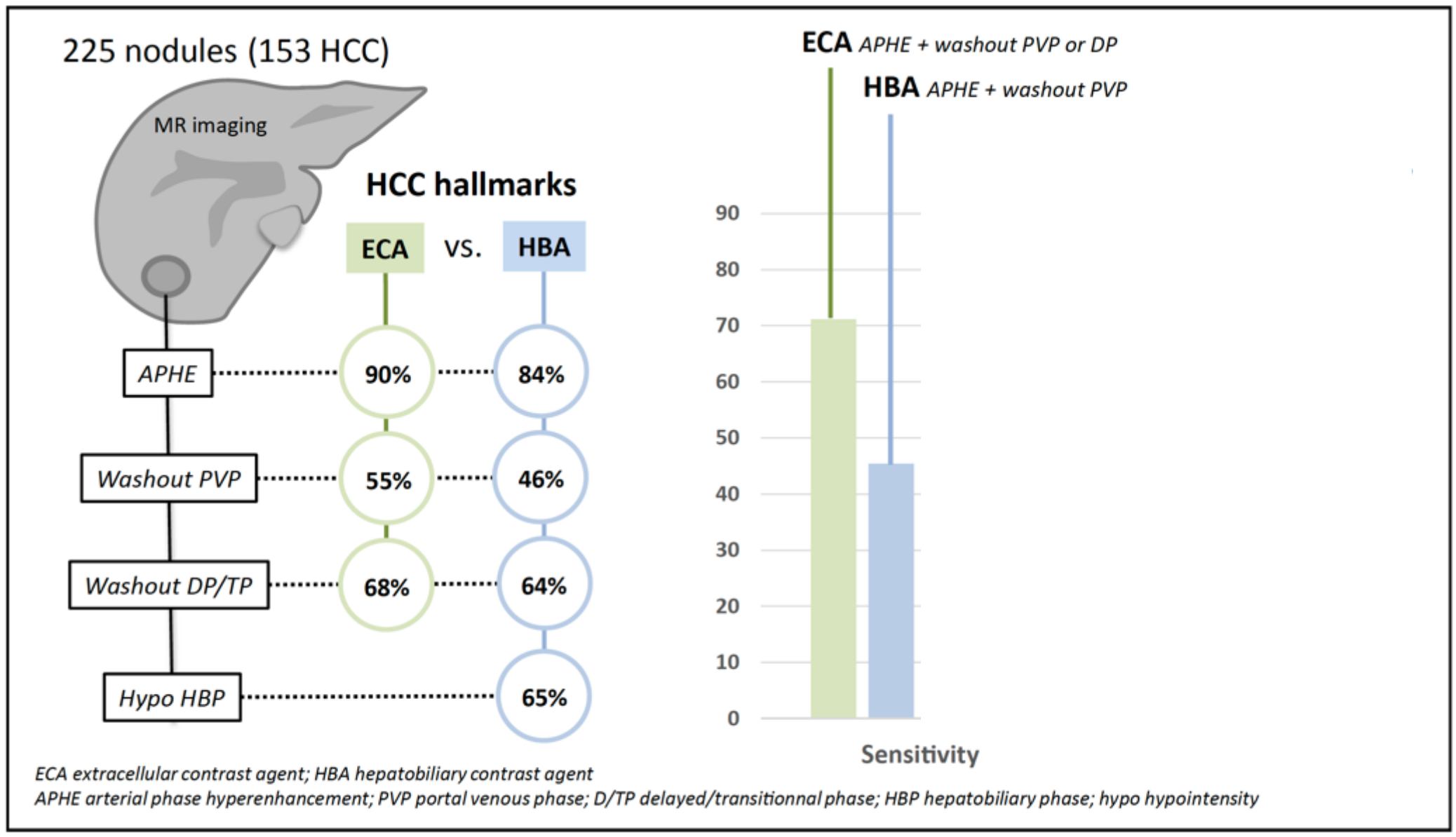
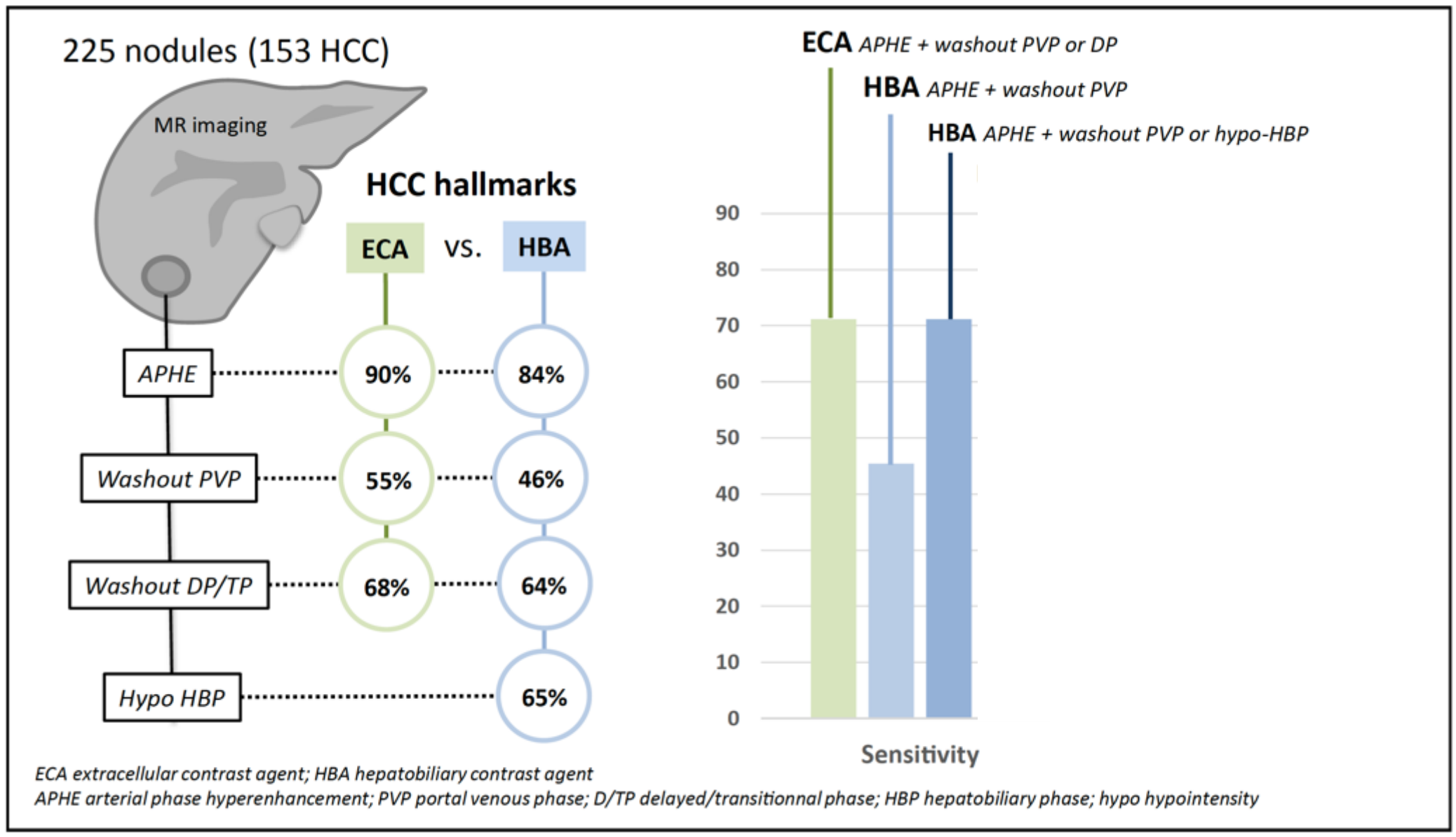


[1]**Paisant A, et al.** Comparison of extracellular and hepatobiliary MR contrast agents for the diagnosis of small HCCs. **J Hepatol. 2020**



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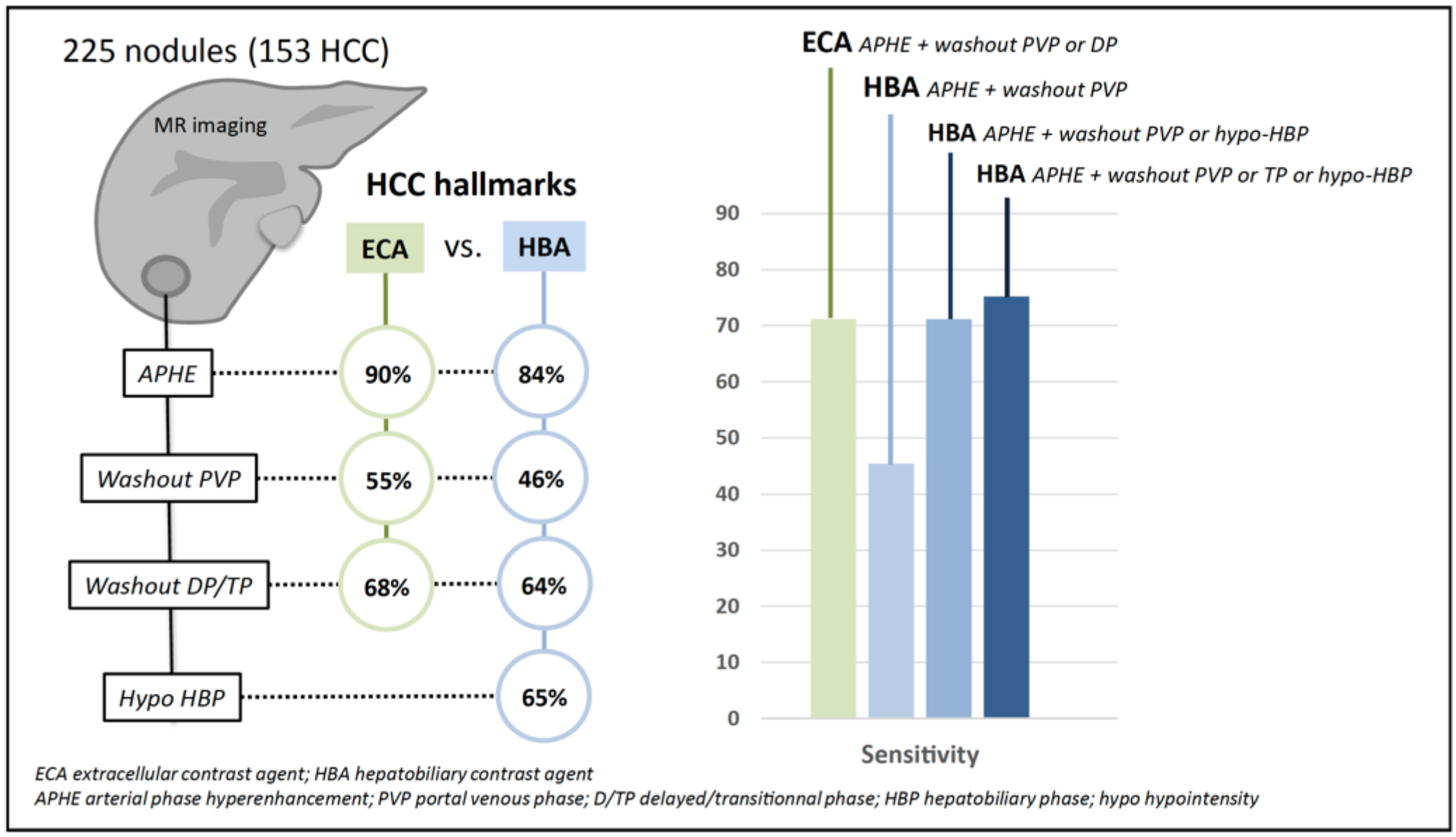

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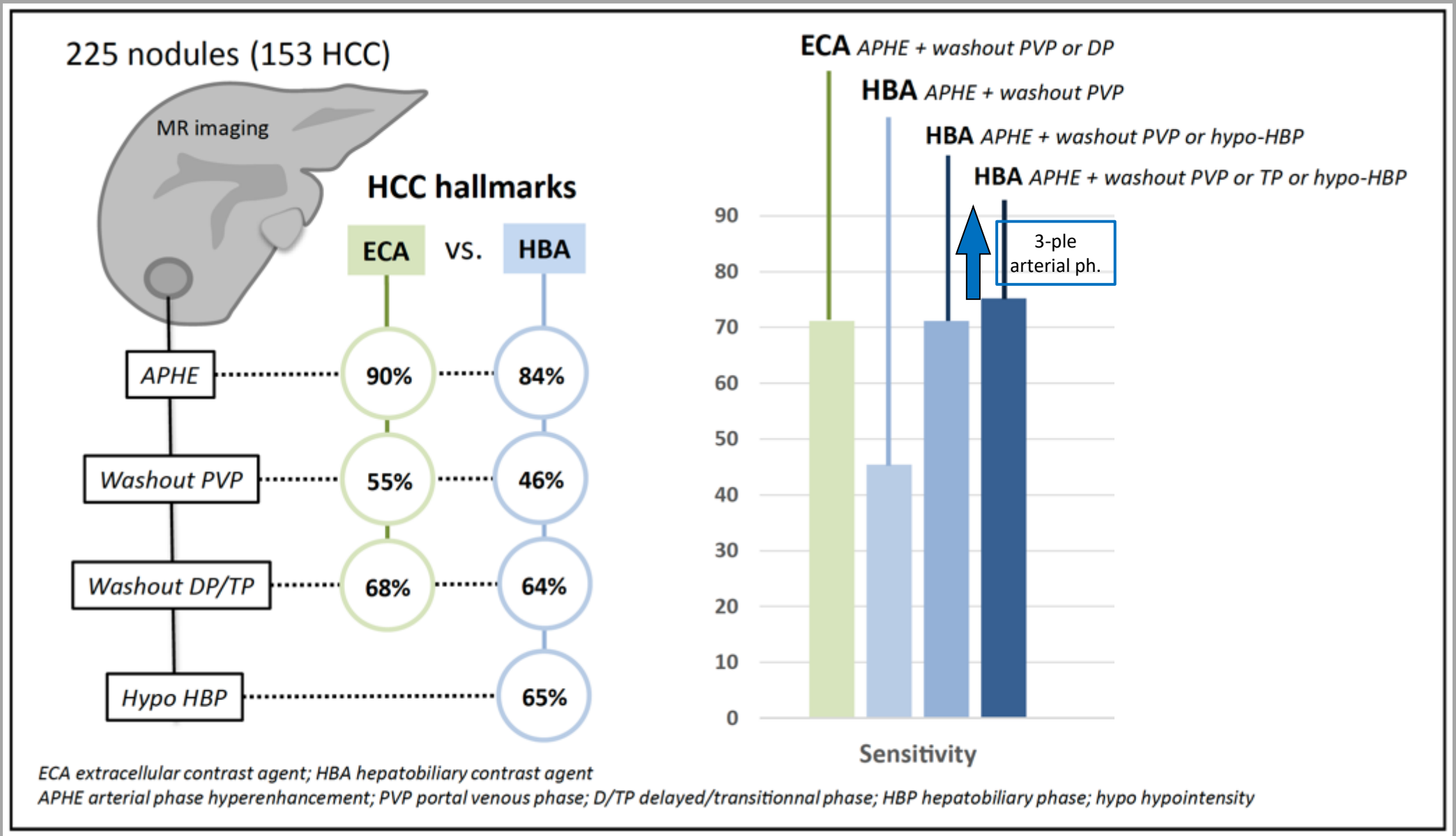

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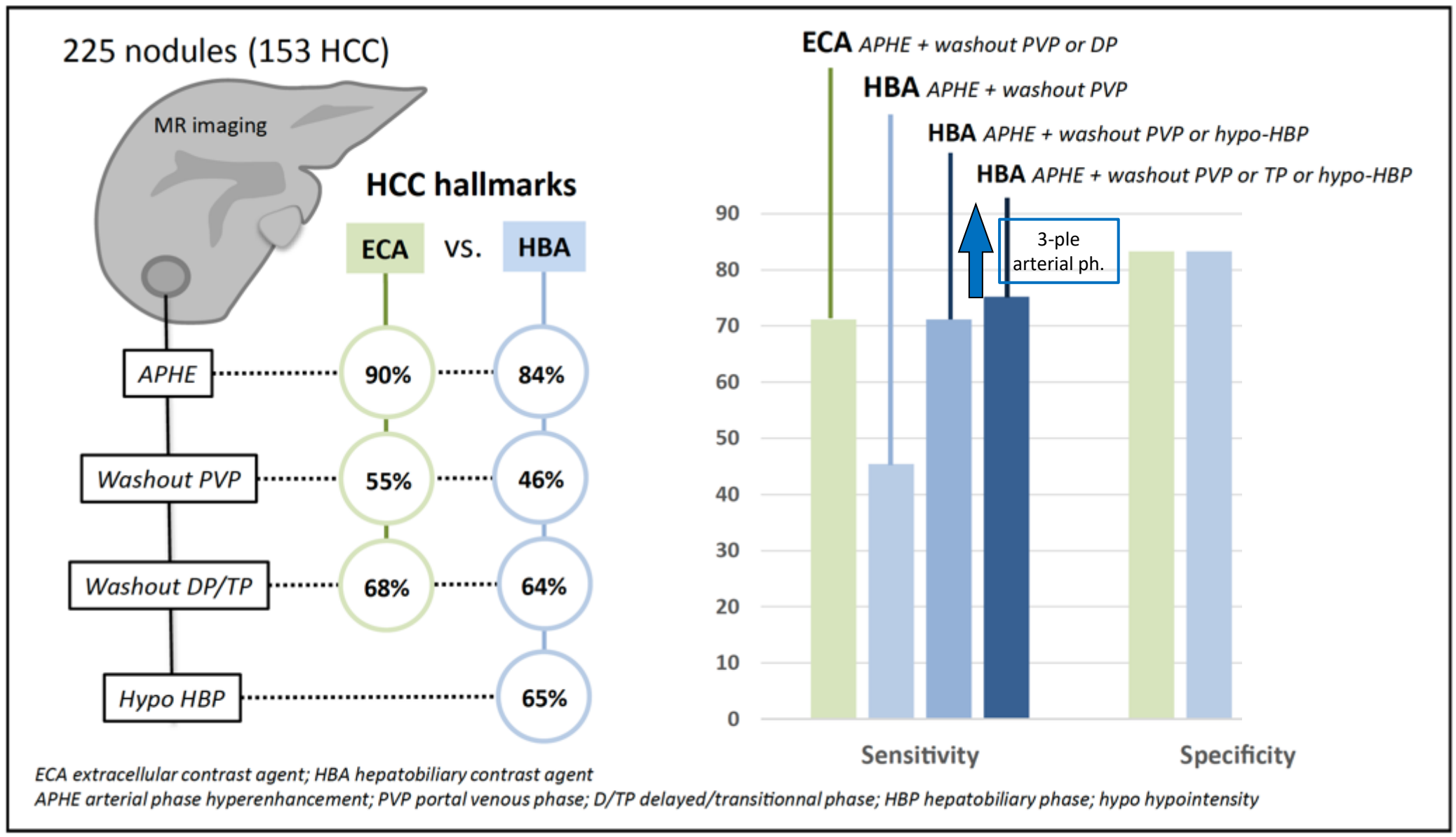

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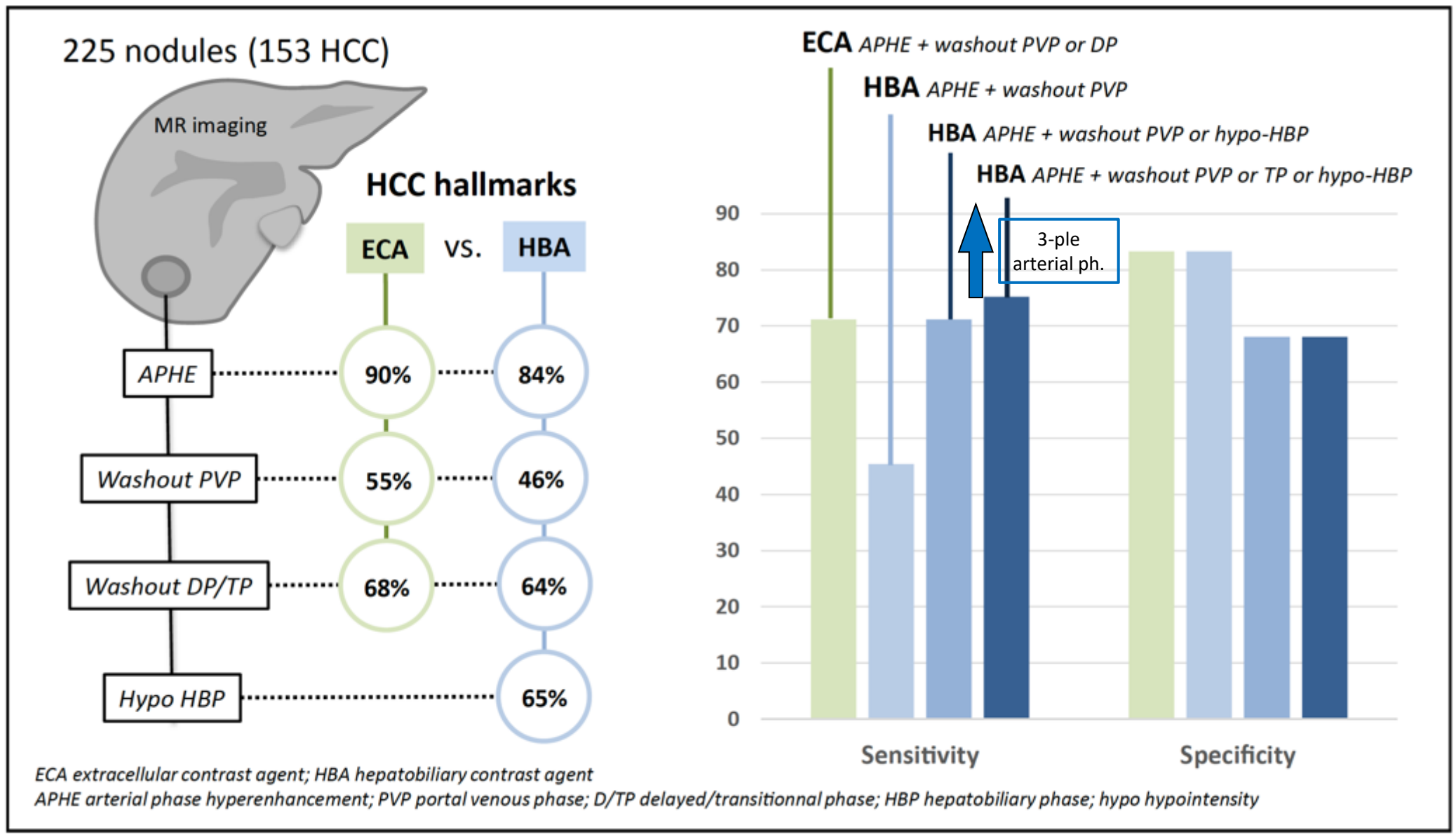

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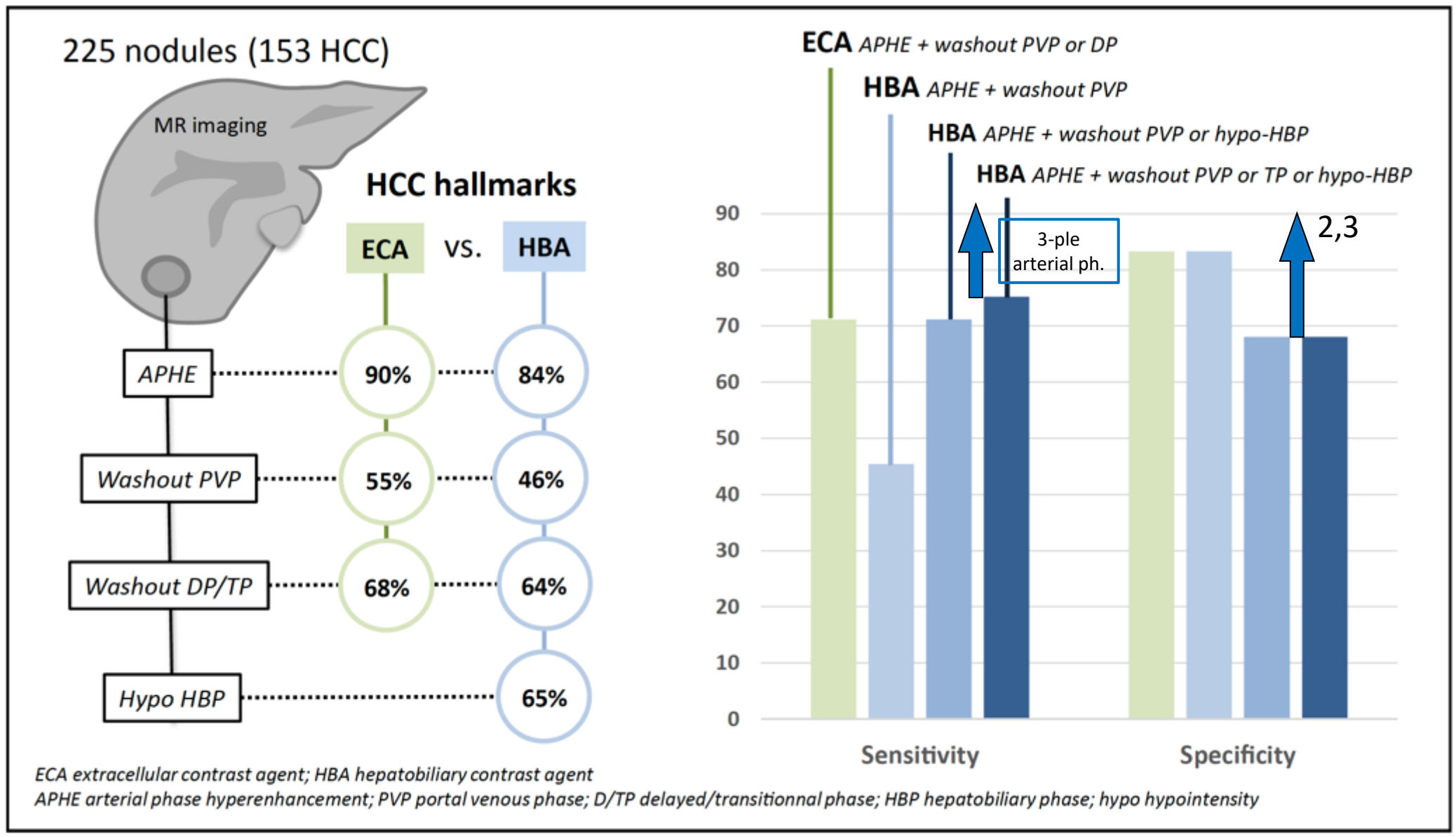

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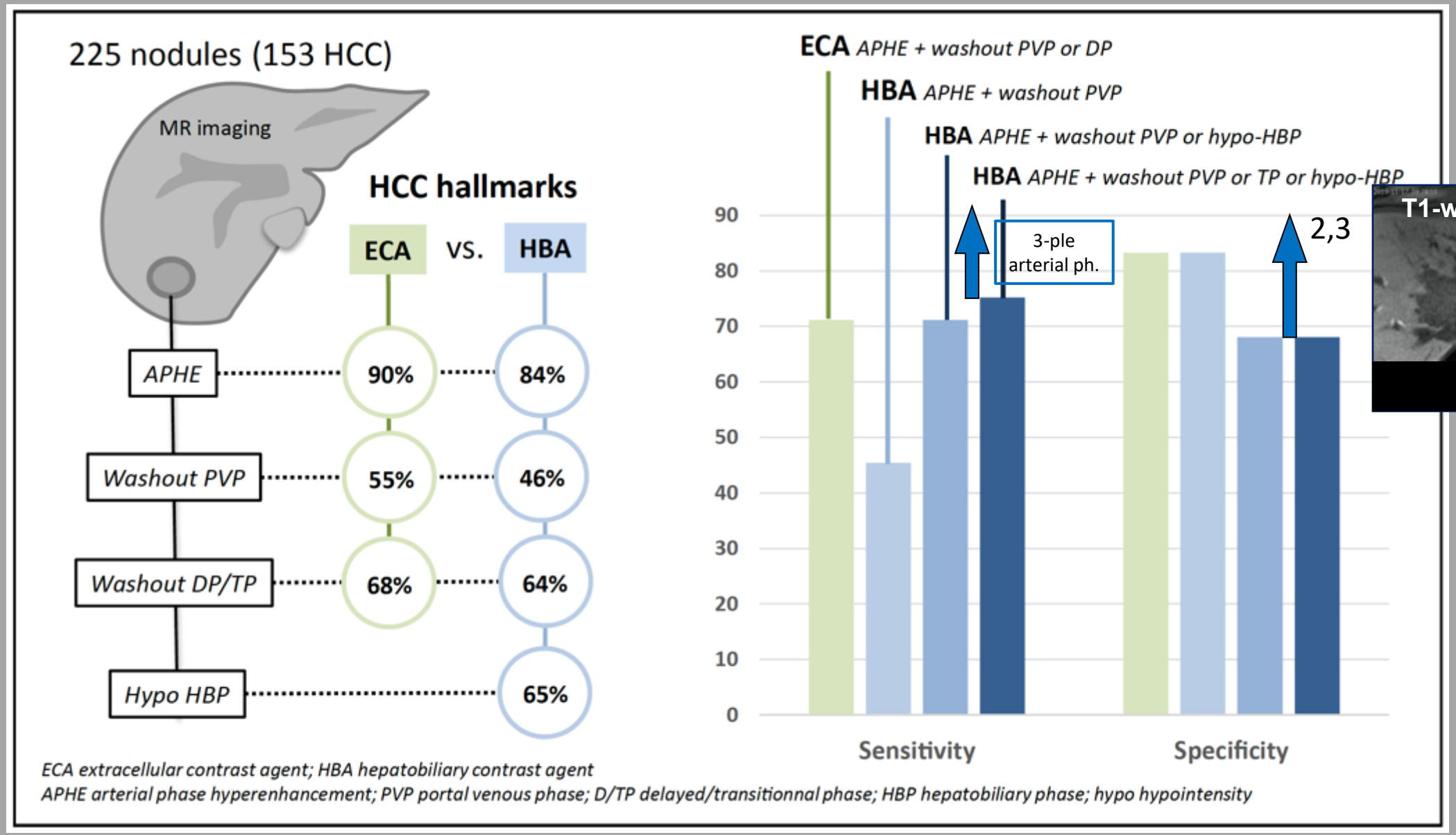
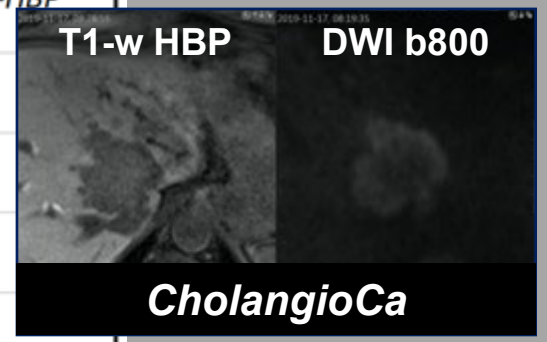
[3]**Kim DH, et al.** Gadoxetic Acid enhanced MRI of Hepatocellular Carcinoma: Value of Washout in Transitional and Hepatobiliary Phases. **Radiology. 2019**





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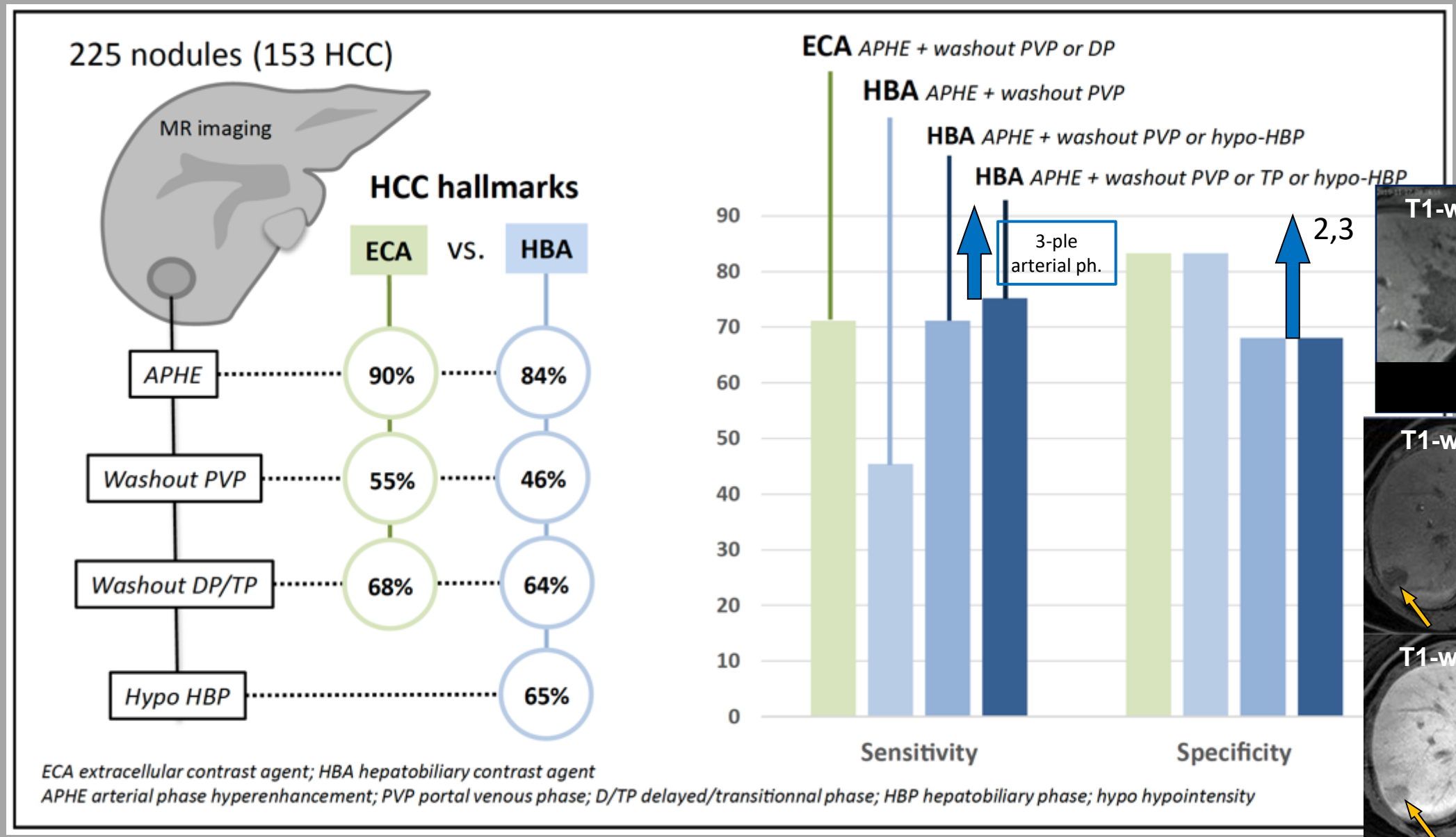

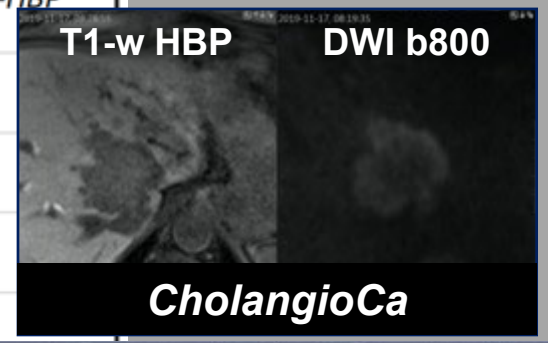

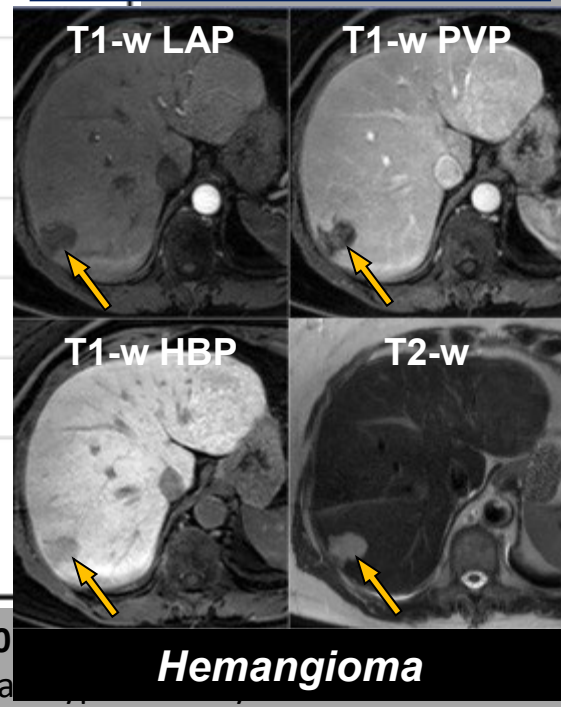

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- Focal liver lesions @ surveillance US

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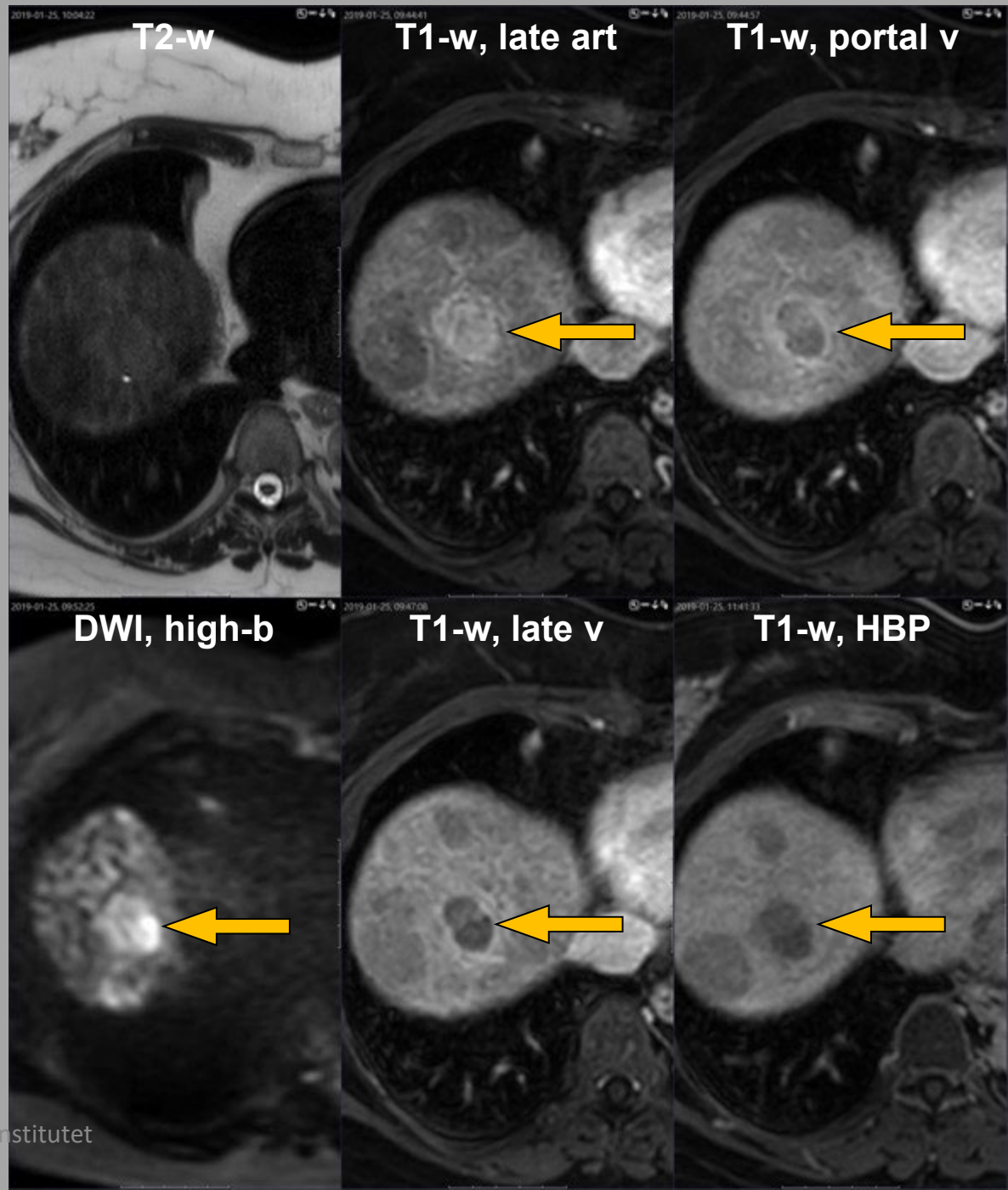

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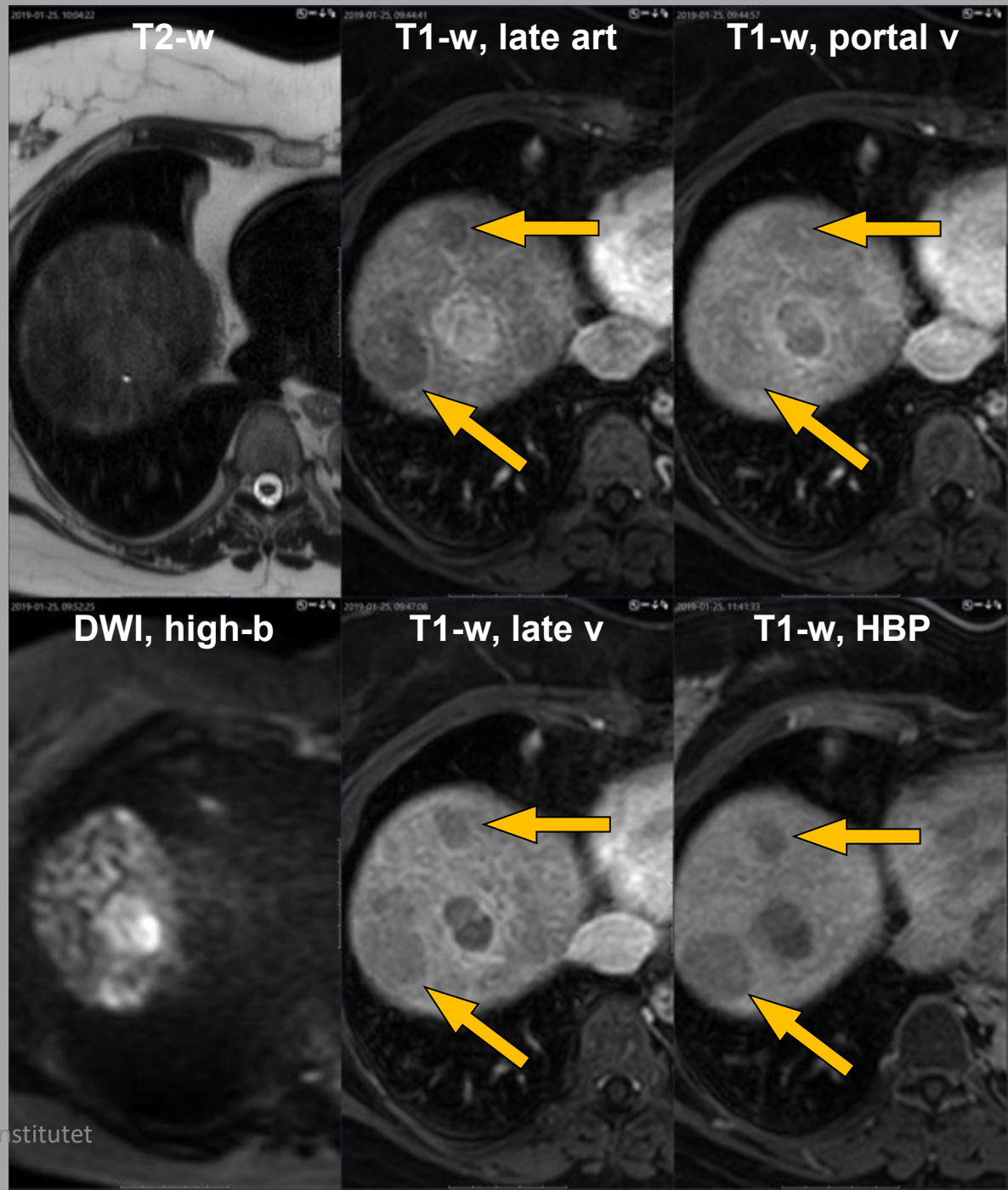
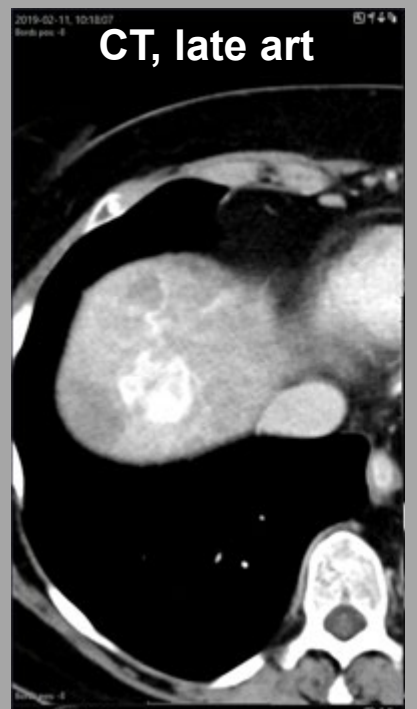
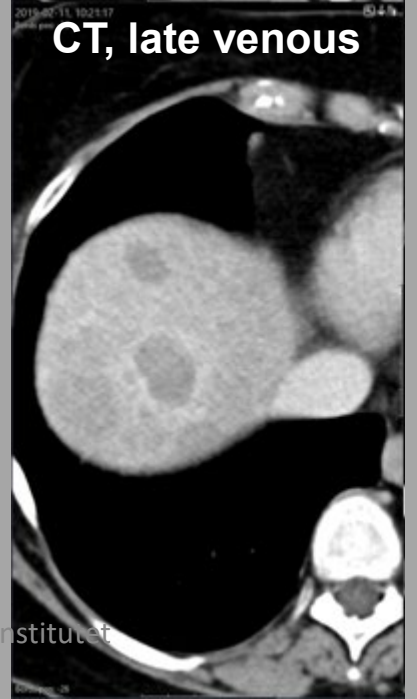
- Focal liver lesions @ surveillance US
- The lesions are most likely:

1. Malignant (=HGDN-HCC)
2. Benign (=RN-LGDN)



- 66 y.o.♀, HBV-cirrhosis
- TACE for HCC in dx liver lobe





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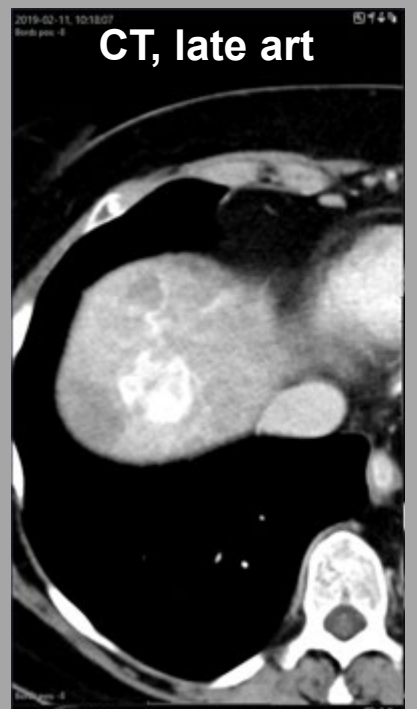

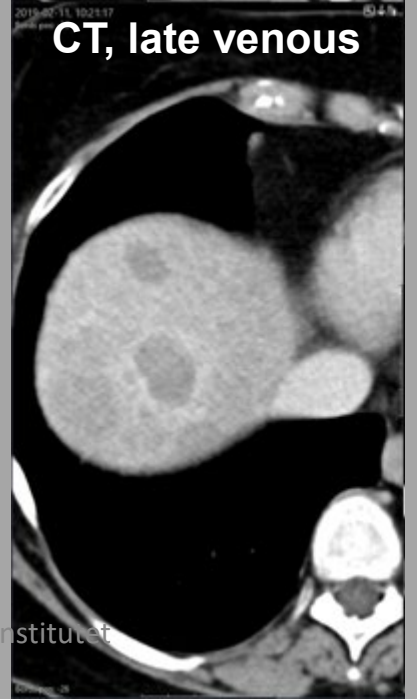

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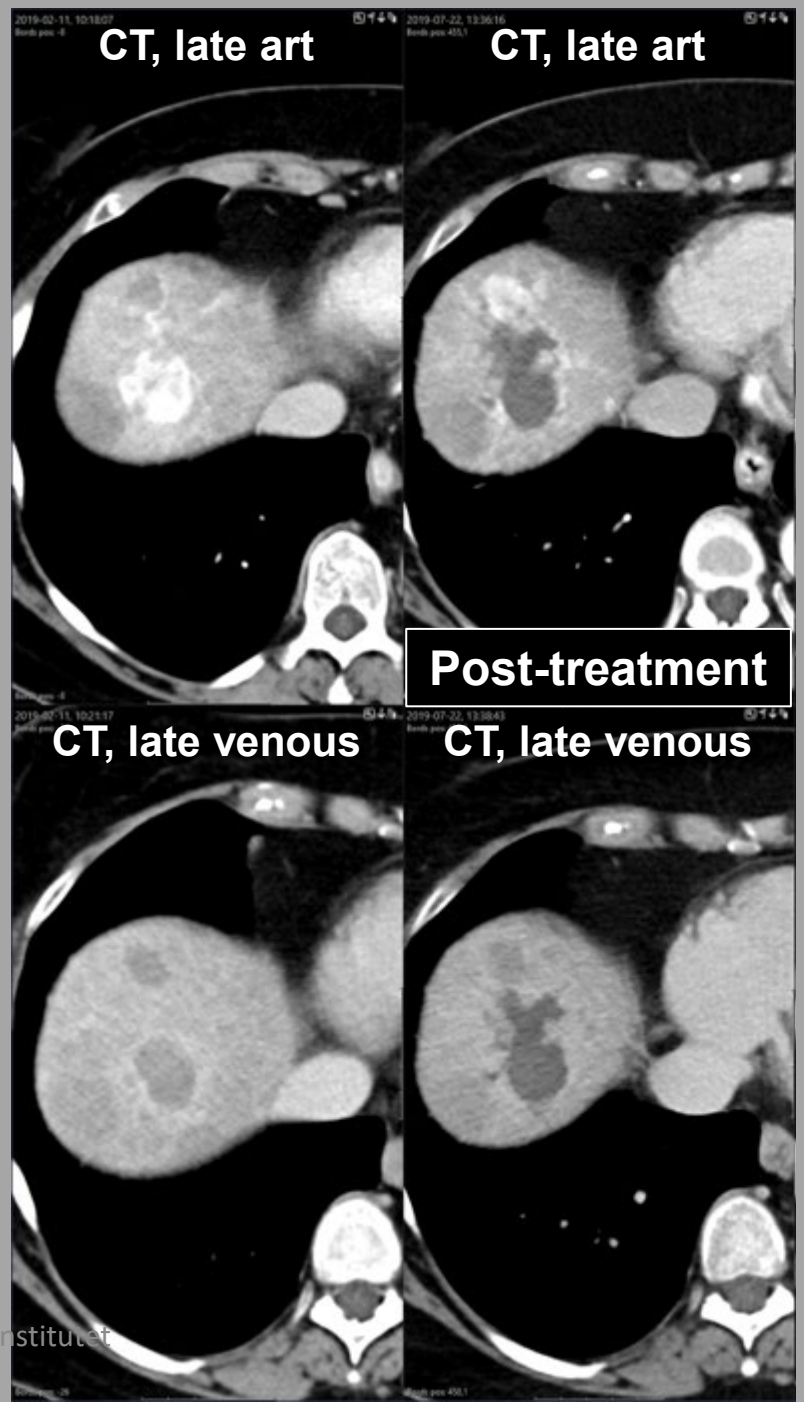

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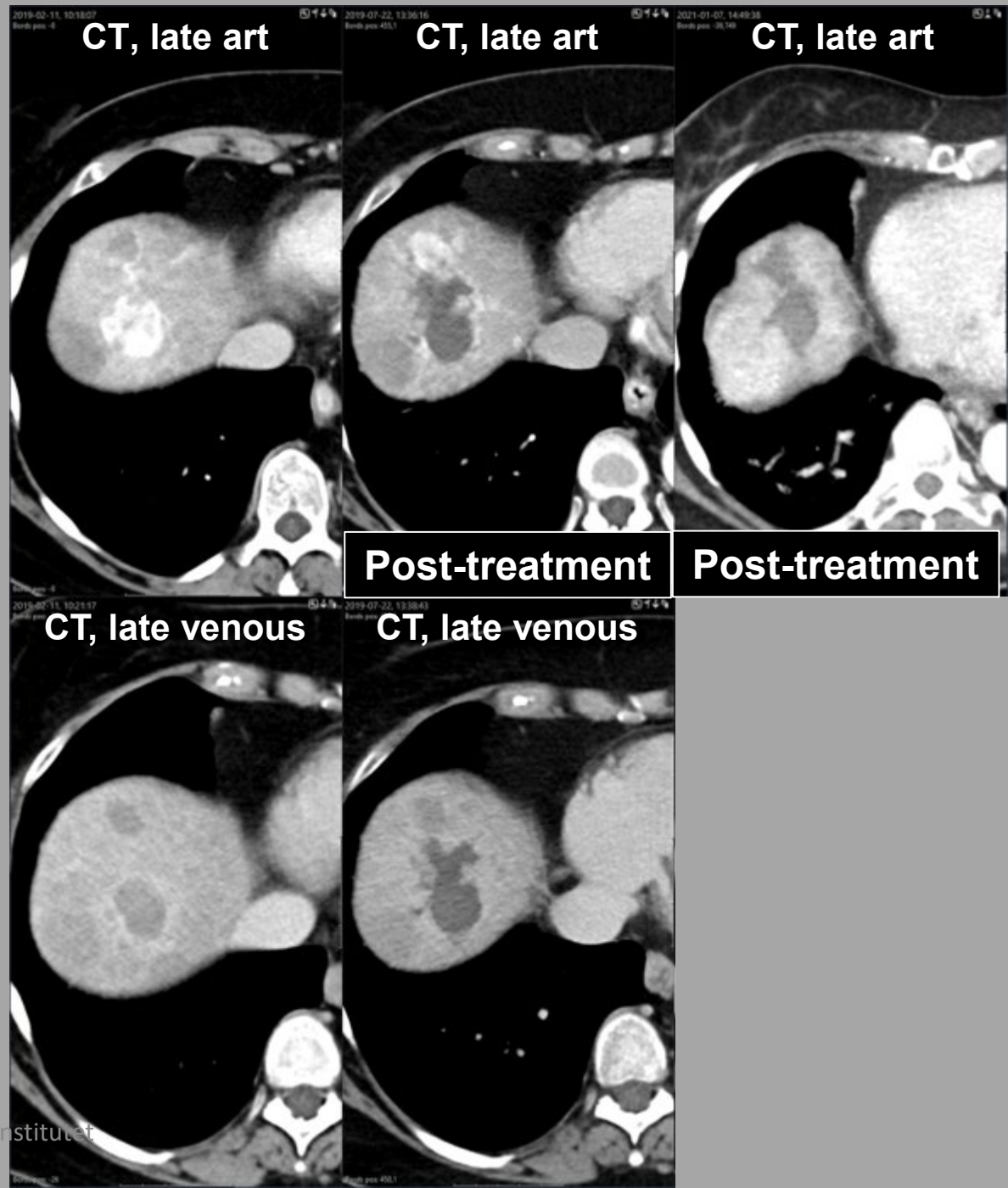

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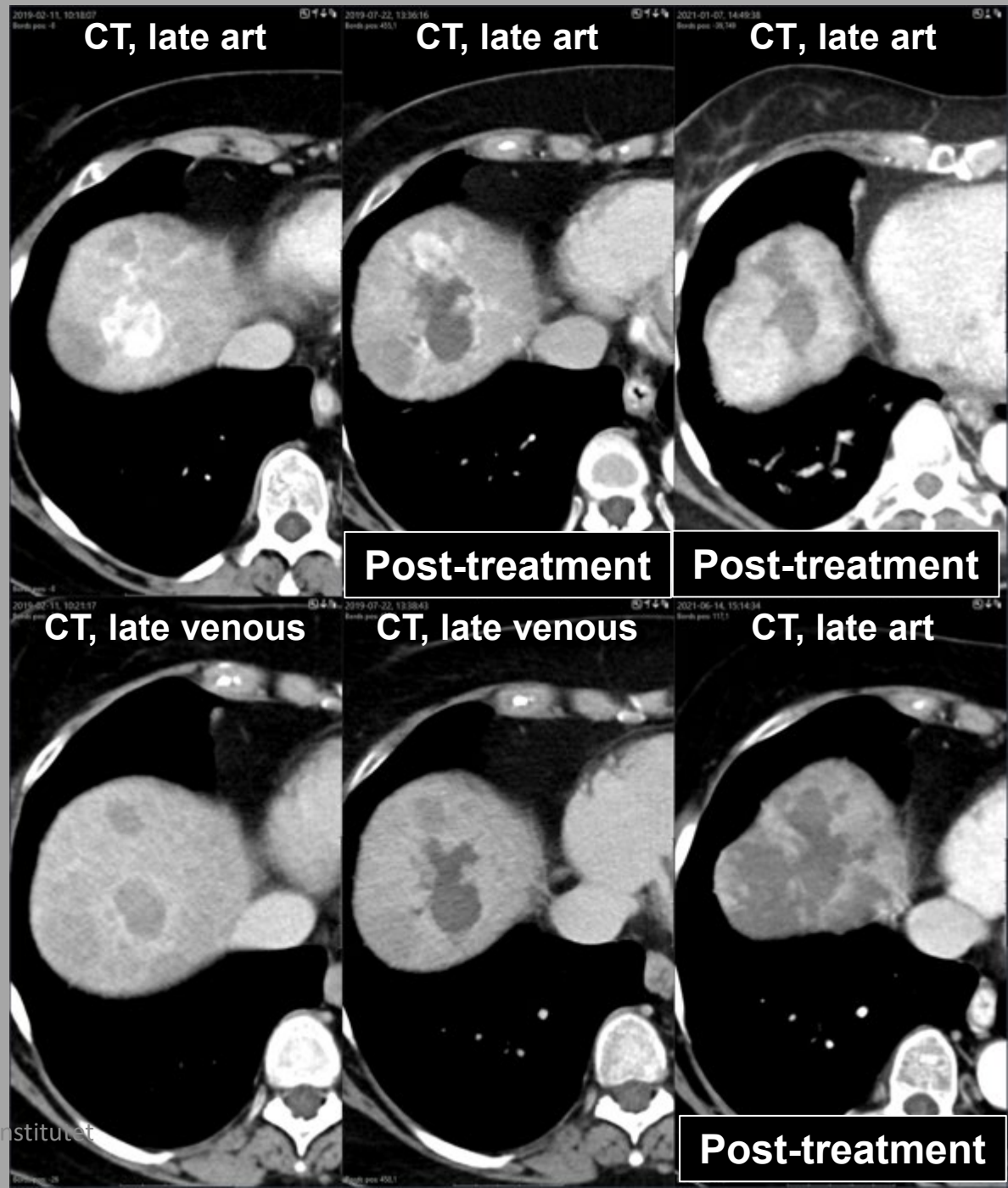

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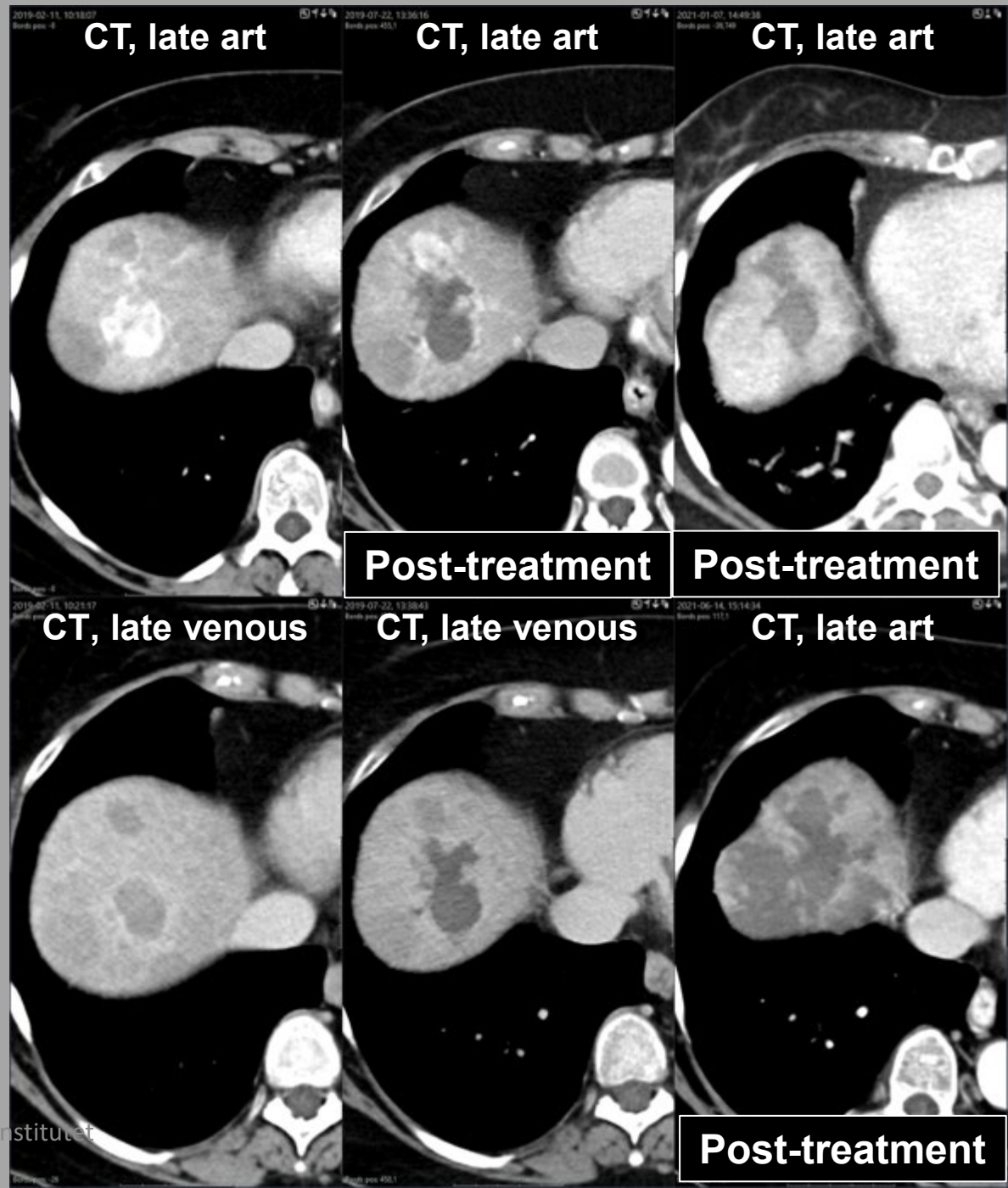

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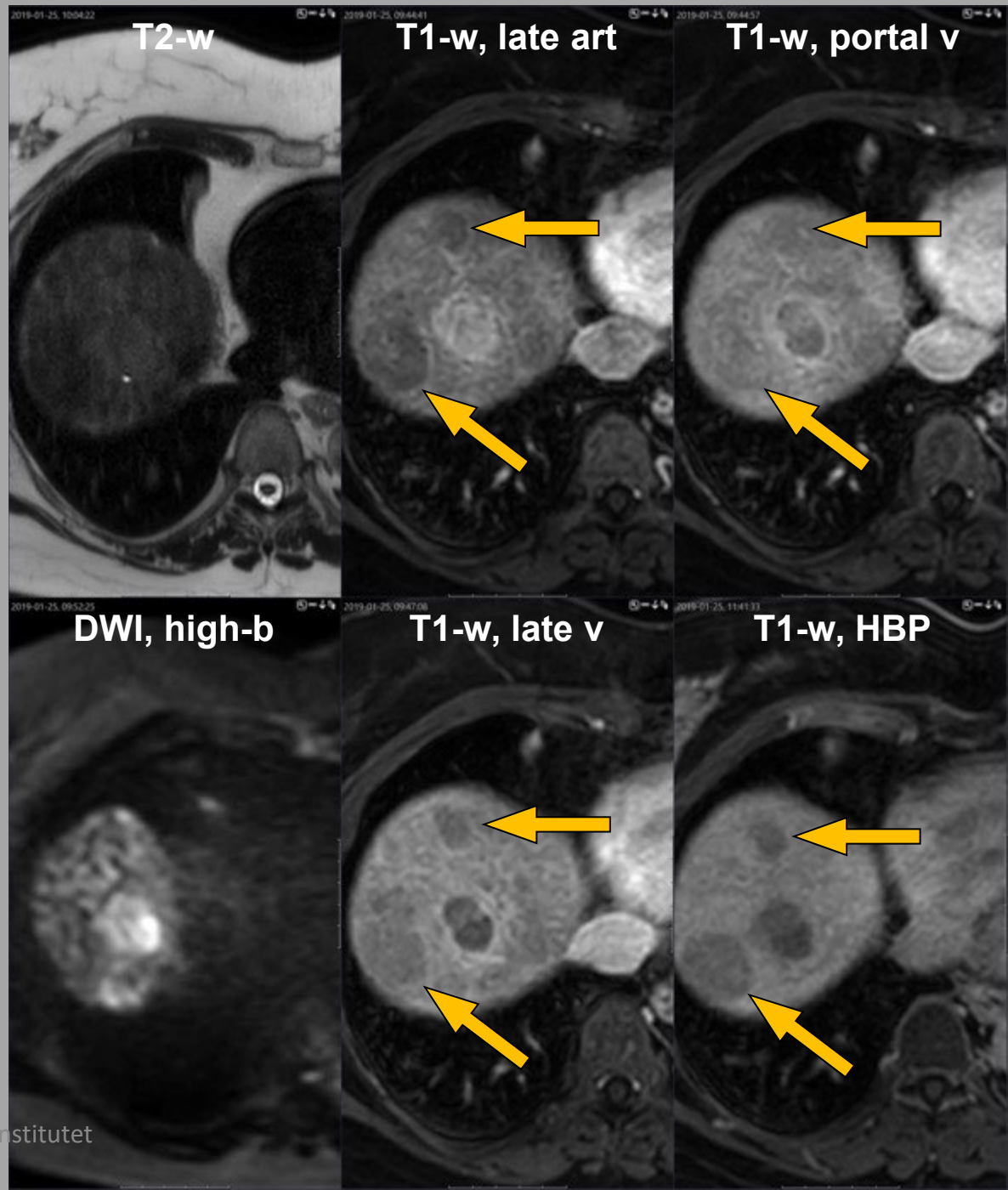
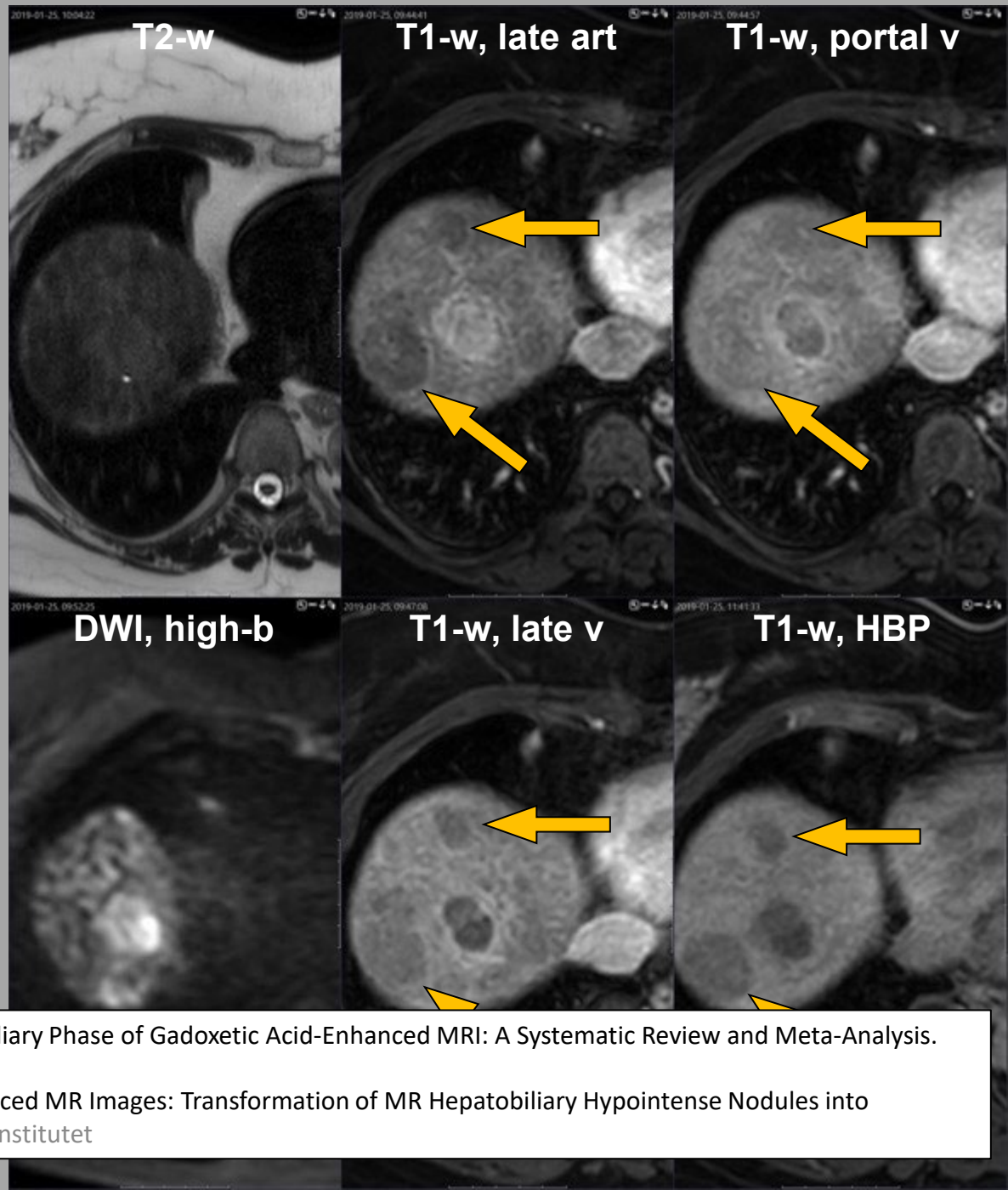
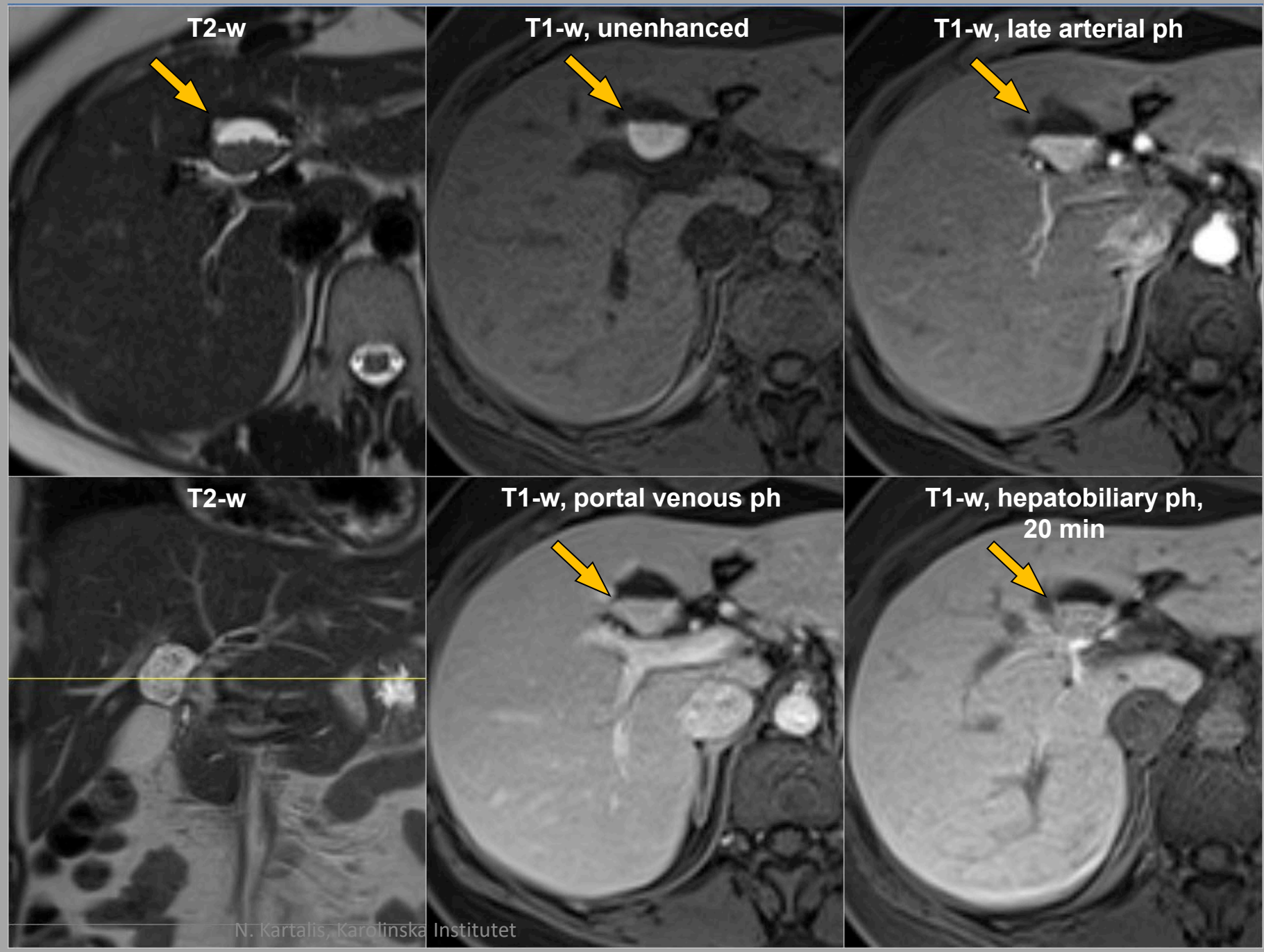


- **Hypervascular transformation of non-APHE hypointense in HBP nodules**
- Size ≥1 cm[1]
- High SI @ DWI or T2-w (initial or f/up)[2]



[1]**Suh CH et al.** Hypervascular Transformation of Hypovascular Hypointense Nodules in the Hepatobiliary Phase of Gadoxetic Acid-Enhanced MRI: A Systematic Review and Meta-Analysis. **AJR. 2017**
[2]**Cho YK et al.** Non-hypervascular Hypointense Nodules on Hepatocyte Phase Gadoxetic Acid-Enhanced MR Images: Transformation of MR Hepatobiliary Hypointense Nodules into Hypervascular Hepatocellular Carcinomas. **Gut Liver. 2018**

- 40 yo♀, recurrent cholangitis



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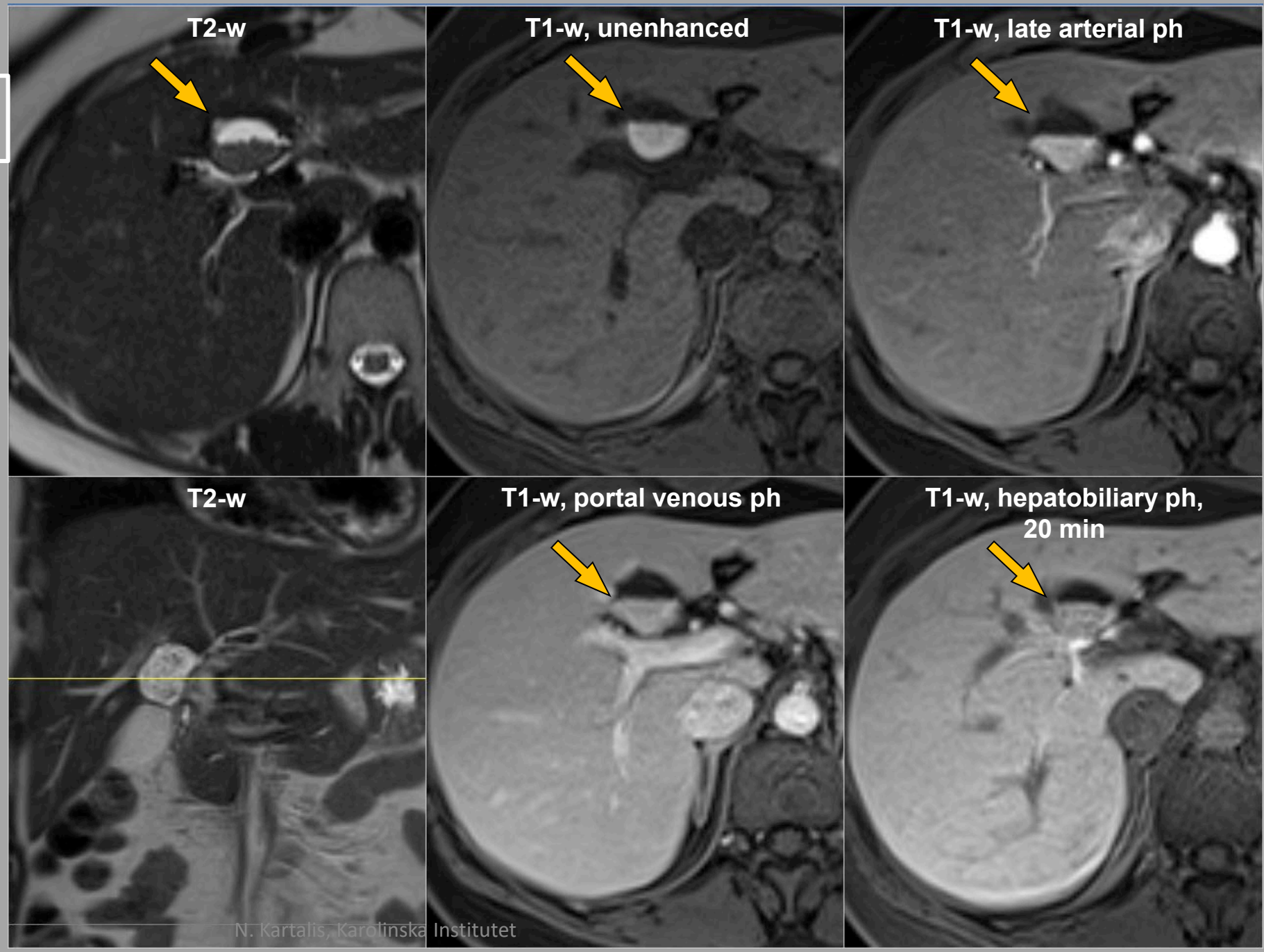
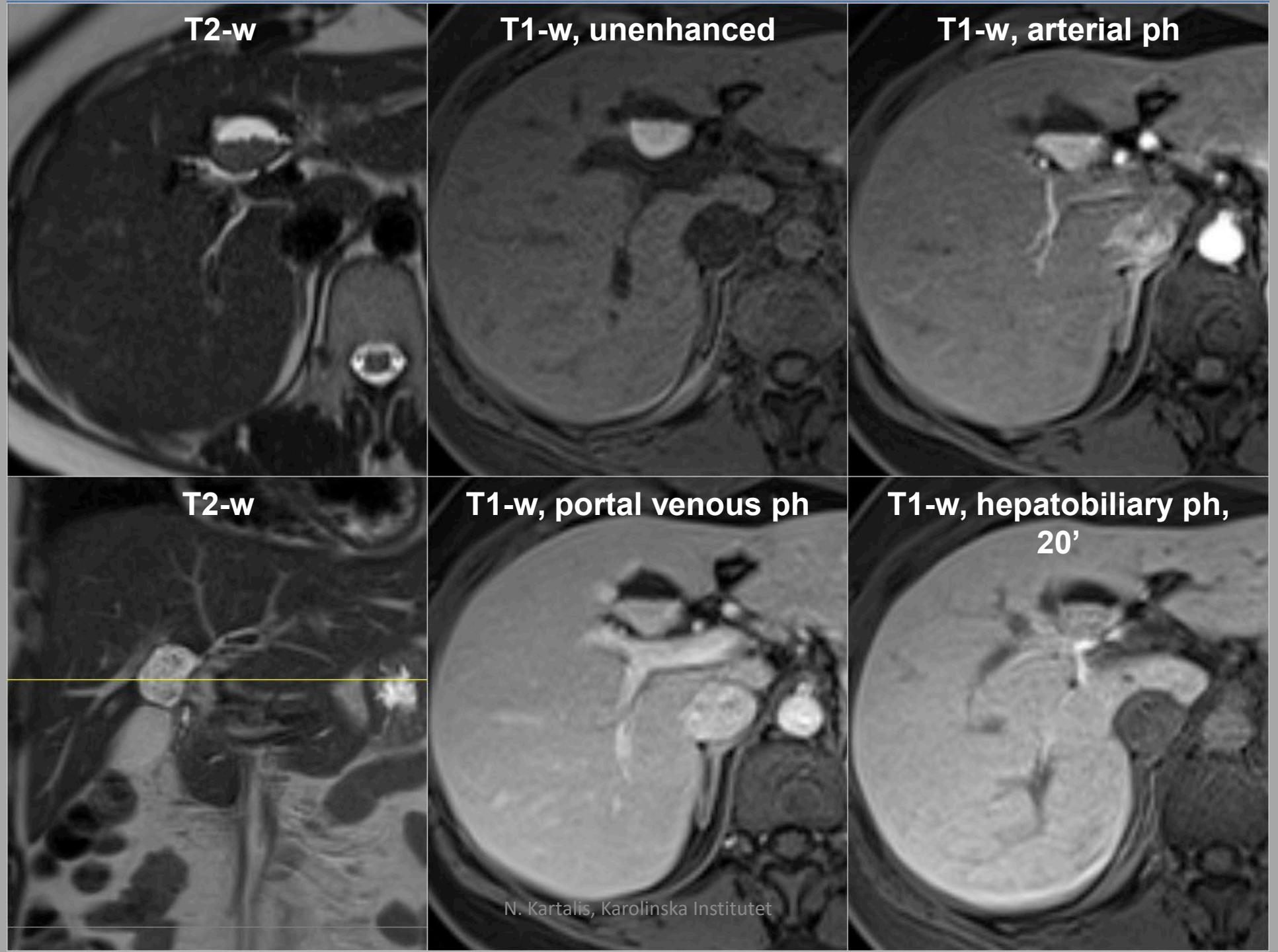
A. Hemangioma

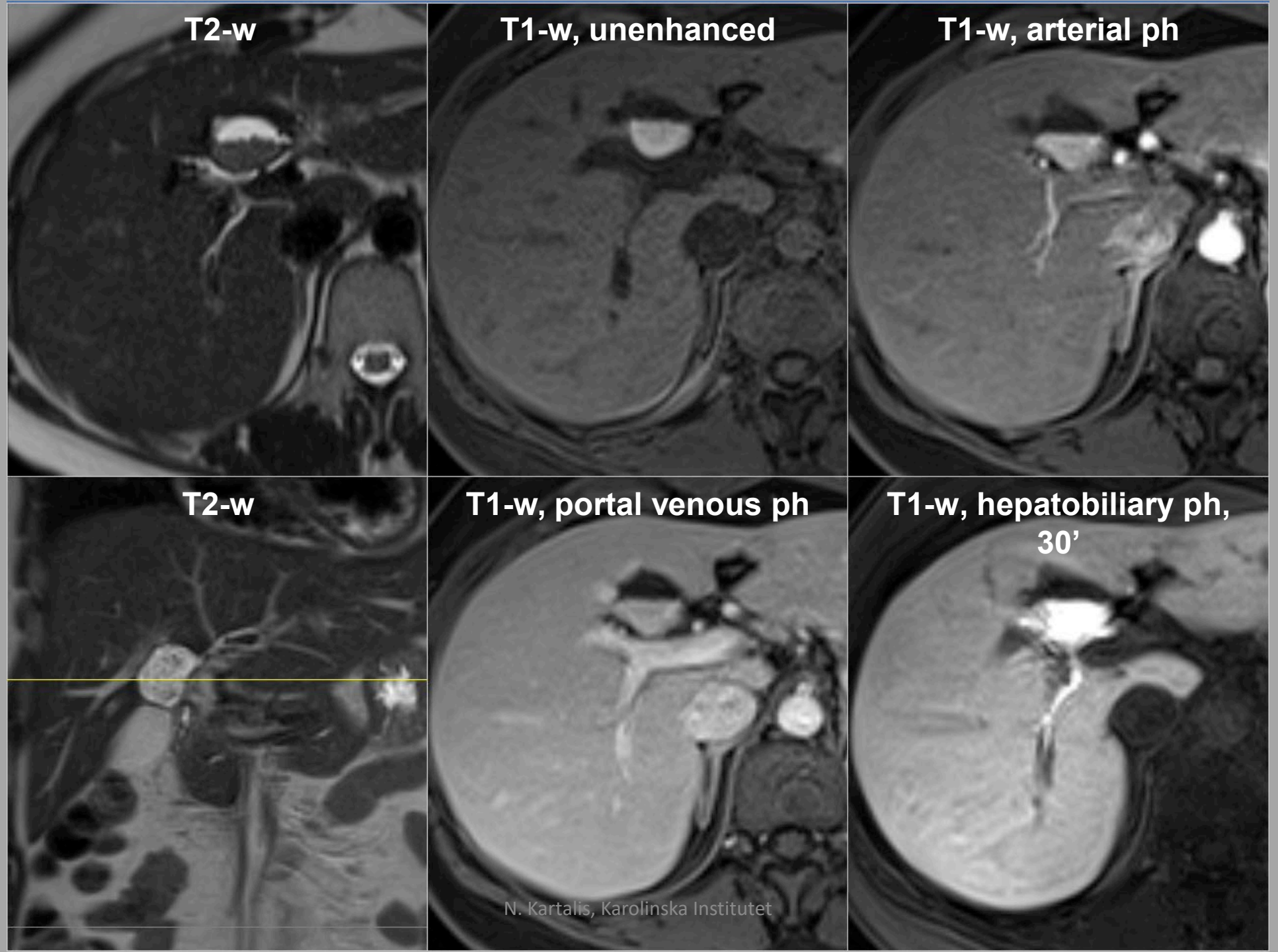
B. Hematoma

C. Bile duct cyst (connex. with bile ducts)

D. Liver cyst




T2-w
T1-w, unenhanced
T1-w, arterial ph
T2-w
T1-w, portal venous ph
T1-w, hepatobiliary ph, 20’
N. Kartalis, Karolinska Institutet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N. Kartalis, Karolinska Institutet

PRIMOVIST®

gadoxetate disodium injection

PART I: HEALTH PROFESSIONAL INFORMATION

SUMMARY PRODUCT INFORMATION

Table 1: Product Information Summary

Route of Administration	Dosage Form, Strength	Clinically Relevant Nonmedicinal Ingredients
intravenous	solution / 181.43 mg/mL gadoxetate disodium injection (0.25 mmol/mL)	None *For a complete listing see* DOSAGE FORMS, COMPOSITION AND PACKAGING *section*.

INDICATIONS AND CLINICAL USE

PRIMOVIST (gadoxetate disodium injection) is a gadolinium-based contrast agent indicated for intravenous use in T1-weighted magnetic resonance imaging (MRI) of the liver to detect and characterize lesions in adults with known or suspected focal liver disease. (1-4)

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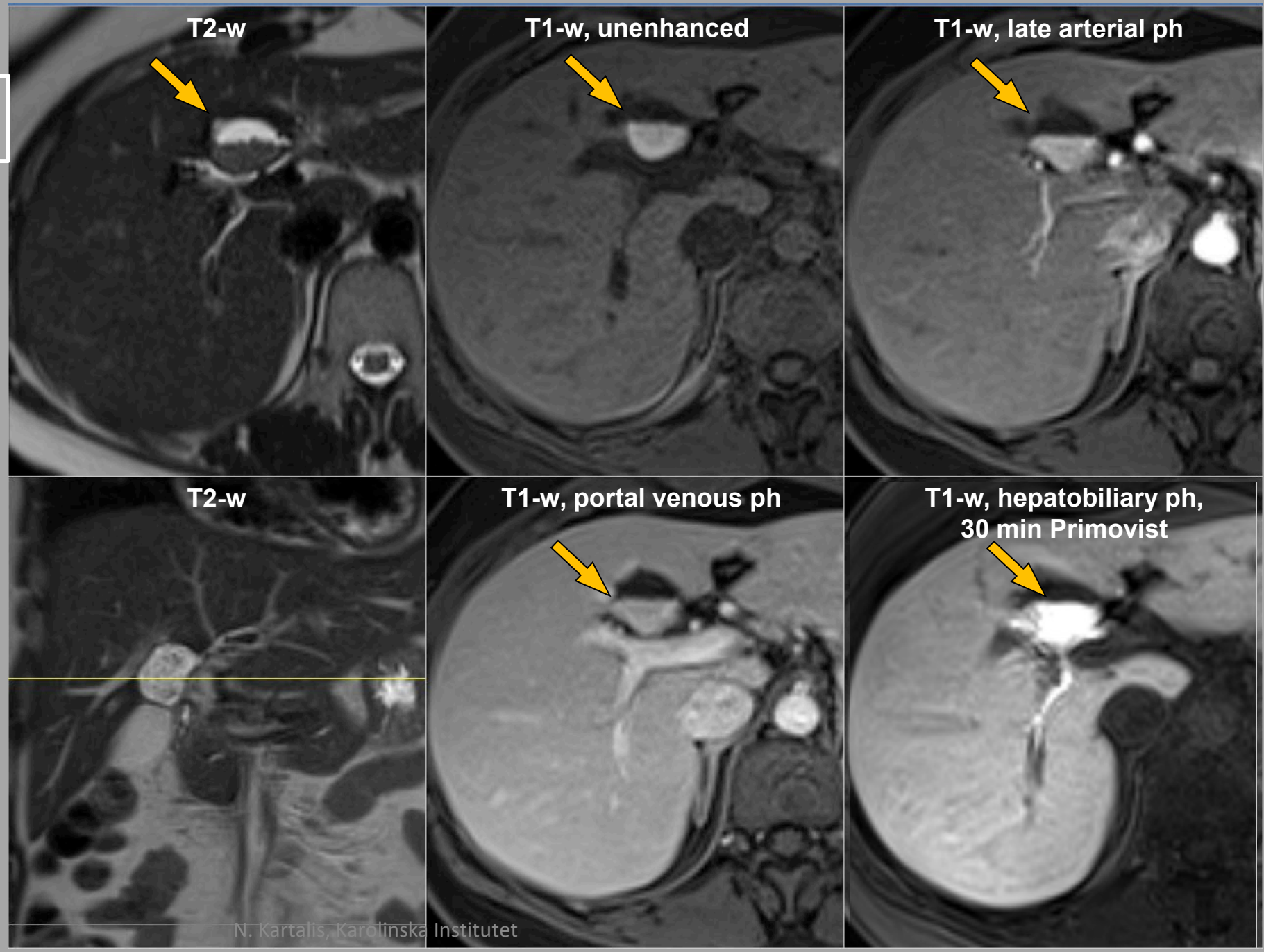

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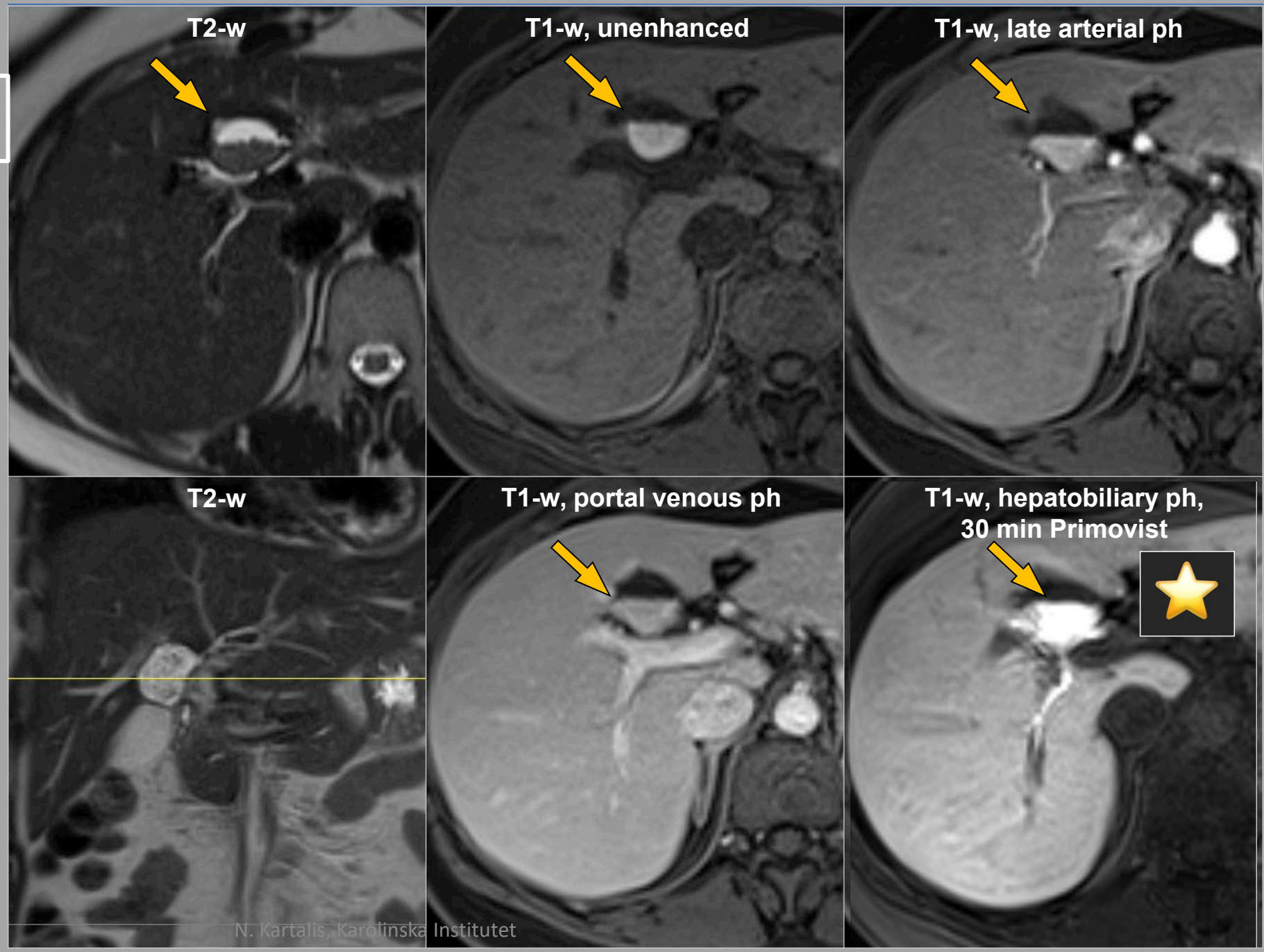

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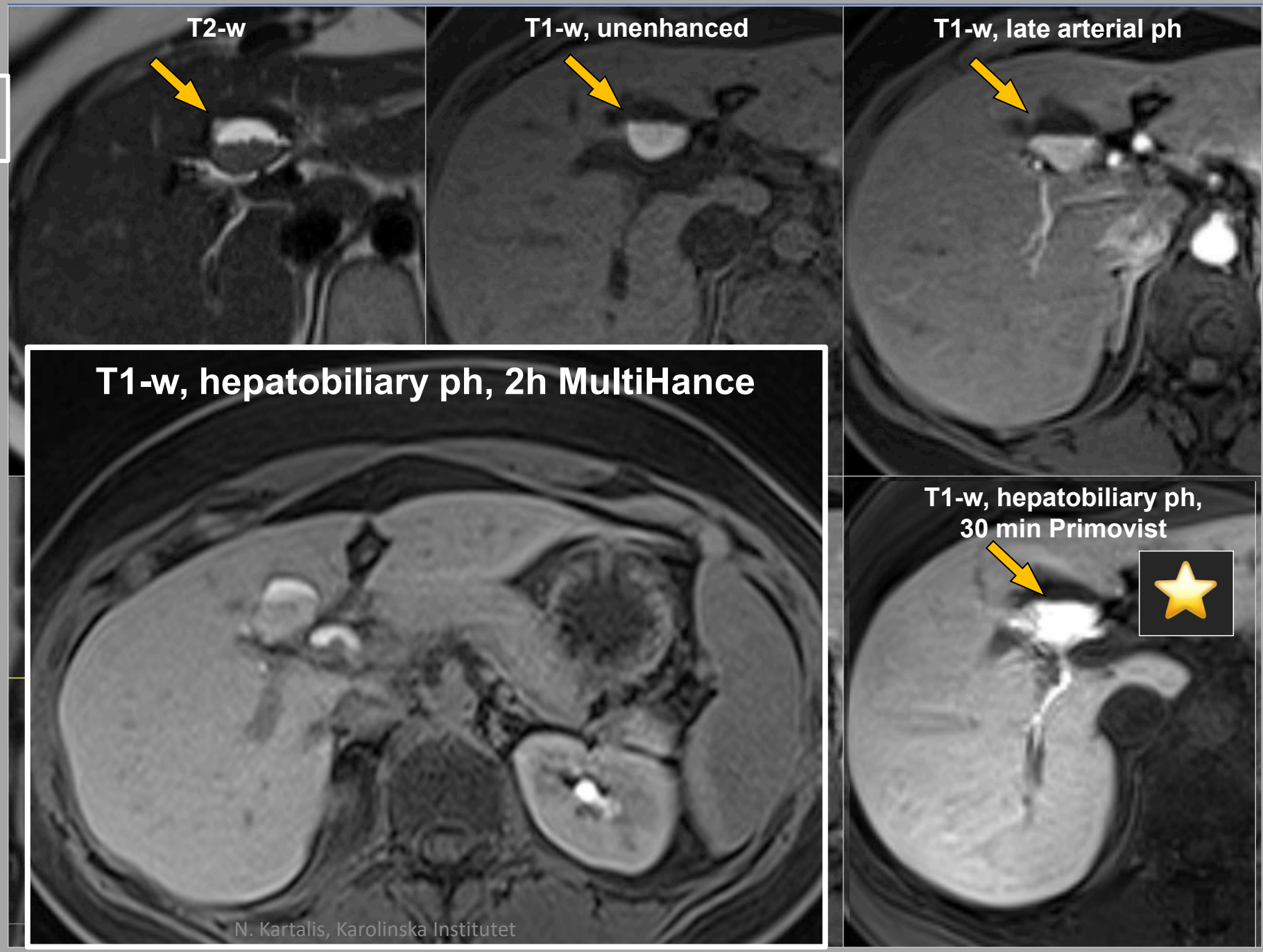


Take home

- Technique
- No “pure” vascular phases beyond PV
  - Washout appearance (beware!)
  - Hemangioma
- Added value
  - HCC: Increased sensitivity (& MVI)
  - Benign: Connex. with bile ducts/bile leakage (& FNH vs. adenoma)

Many thanks!

nikolaos.kartalis@ki.se

- 25 yo♀,

  ⬆⬆⬆ ALP/bilirubin

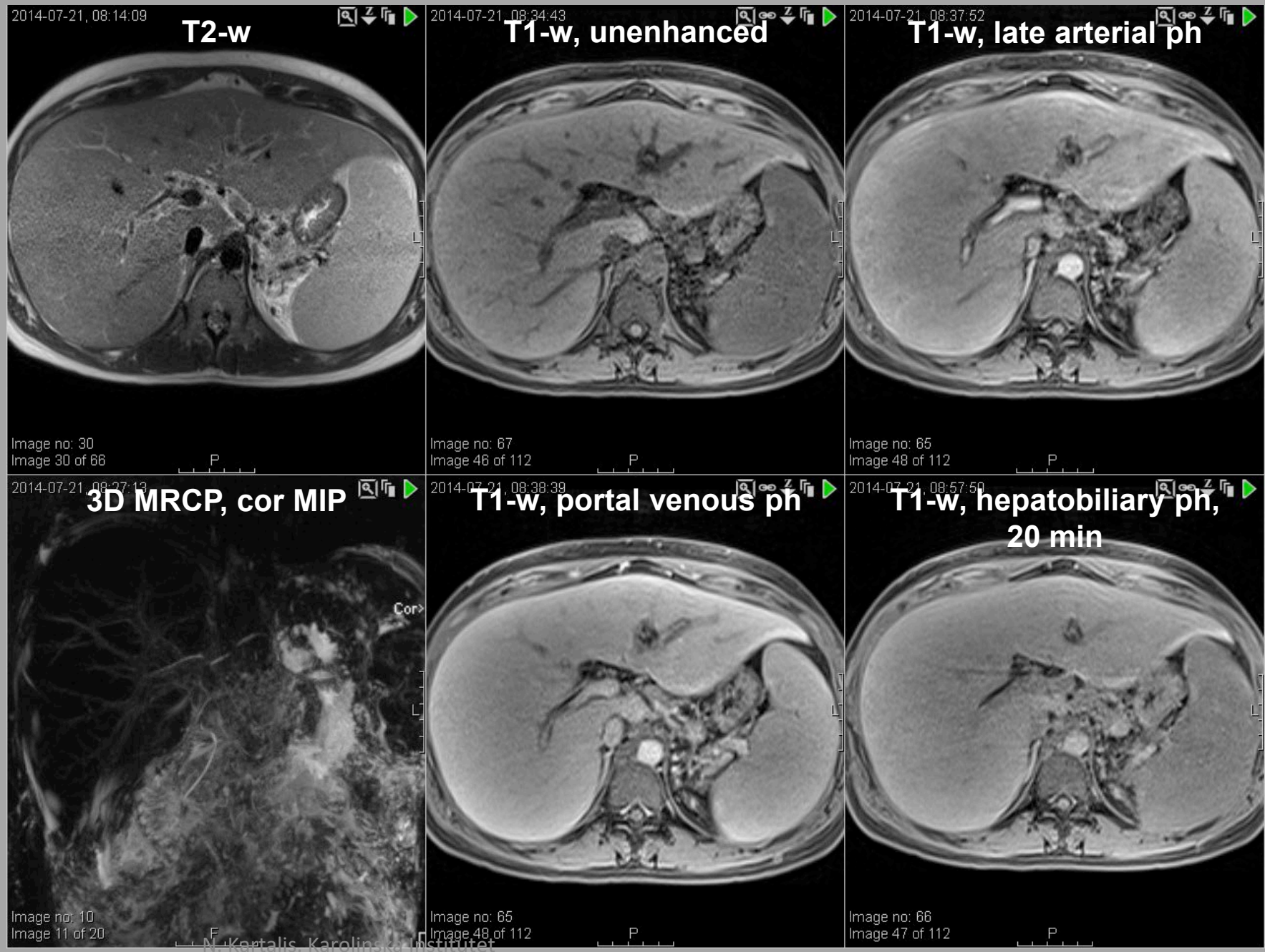
- No dilated ducts. How come?

A. Lab-values are wrong

B. Hemolysis

C. Intracellular cholestasis

D. No idea…



- 60 yo ♂, cirrhosis. High SI ascites in HB-ph.
- The reason is:

A. Diffusion of IV contrast
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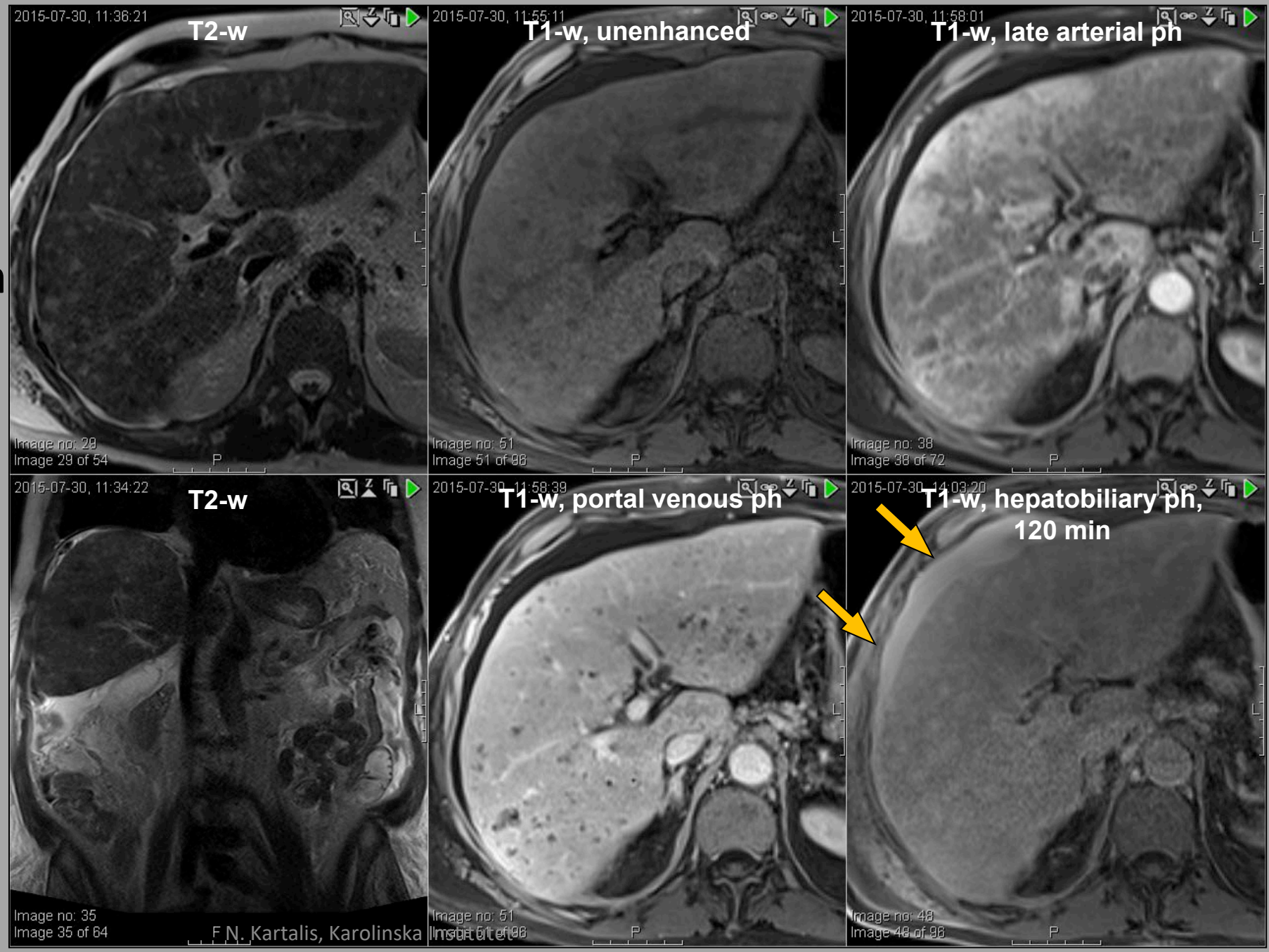

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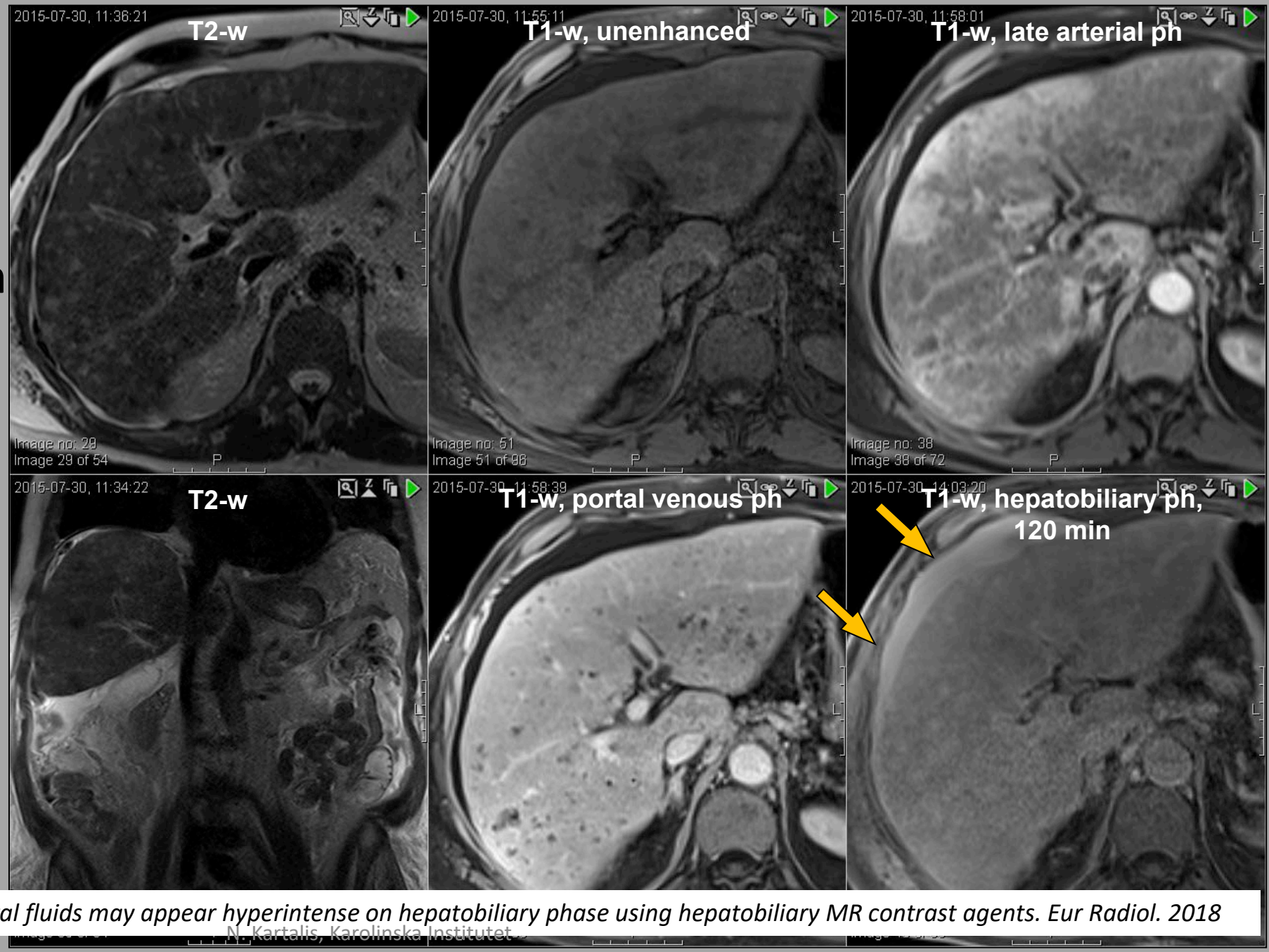
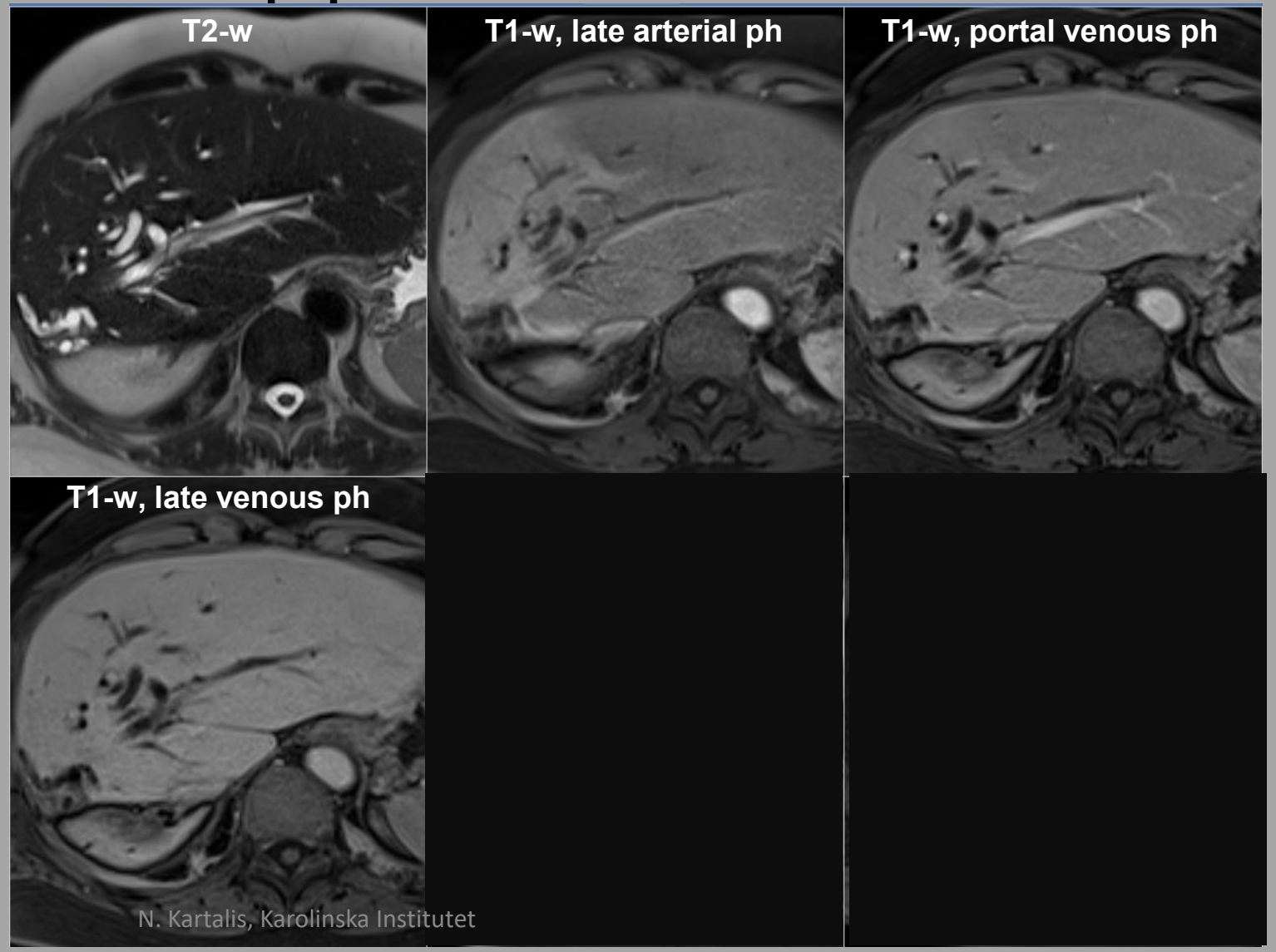


Ciolina M, et al. *Peritoneal and pleural fluids may appear hyperintense on hepatobiliary phase using hepatobiliary MR contrast agents. Eur Radiol. 2018*

Clinical applications

- Stricture evaluation



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