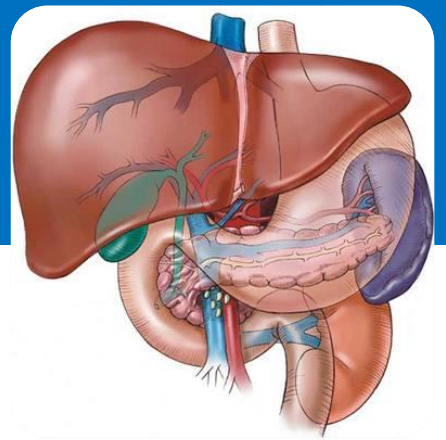


Management incidentalomů jater

T. Andrašina, H.Petrášová, M.Šmajerová, V. Válek jr,

Klinika radiologie a nukleární medicíny FN Brno a LF MU

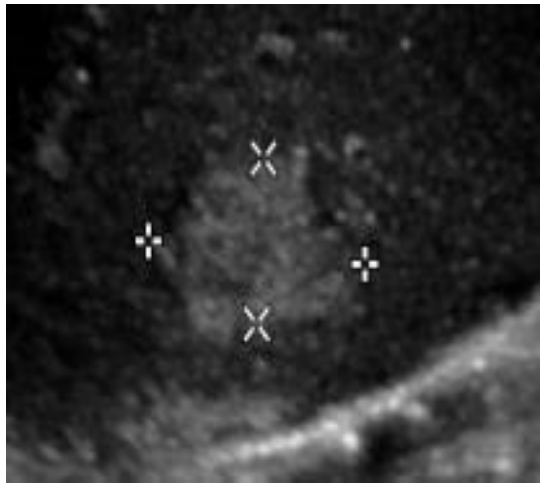
Bez konfliktu zájmu v daném tématu

INCIDENTALOMY JATER

- Náhodně nalezené léze na UZ, CT, MR či jiné zobrazovací metodě bez klinických projevů léze
- Bolesti břicha, dyspeptické potíže, anémie, dispenzarizace, jiné

  - Nejčastější – hemangiomy
  - Incidence: 6-17%

- **BENIGNÍ *vs* MALIGNÍ**



MANAGMENT

Clinical Practice Guidelines

EASL EUROPEAN ASSOCIATION FOR THE STUDY OF THE LIVER

EASL–EORTC Clinical Practice Guidelines: Management of hepatocellular carcinoma

European Association for the Study of the Liver*,
European Organisation for Research and Treatment of Cancer

CME

Managing Incidental Findings on Abdominal CT: White Paper of the ACR Incidental Findings Committee

Lincoln L. Berland, MD[a], Stuart G. Silverman, MD[b], Richard M. Gore, MD[c], William W. Mayo-Smith, MD[d], Alec J. Megibow, MD, MPH[e], Judy Yee, MD[f], James A. Brink, MD[g], Mark E. Baker, MD[h], Michael P. Federle, MD[i], W. Dennis Foley, MD[j], Isaac R. Francis, MD[k], Brian R. Herts, MD[h], Gary M. Israel, MD[g], Glenn Krinsky, MD[j], Joel F. Platt, MD[k], William P. Shuman, MD[m], Andrew J. Taylor, MD[n]

Hepatic Incidentalomas

Richard M. Gore, MD*, Geraldine M. Newmark, MD,

Guidelines and Good Clinical Practice Recommendations for Contrast Enhanced Ultrasound (CEUS) in the Liver – Update 2012

A WFUMB-EFSUMB Initiative in Cooperation With Representatives of AFSUMB, AIUM, ASUM, FLAUS and ICUS

Authors: M. Claudon[1]*, C. F. Dietrich[2]*, B. I. Choi[3], D. O. Cosgrove[4], M. Kudo[5], C. P. Nolsøe[6], F. Piscaglia[7], S. R. Wilson[8], R. G. Barr[9], M. C. Chammas[10], N. G. Chaubal[11], M.-H. Chen[12], D. A. Clevert[13], J. M. Correas[14], H. Ding[15], F. Forsberg[16], J. B. Fowlkes[17], R. N. Gibson[18], B. B. Goldberg[19], N. Lassau[20], E. L. S. Leen[21], R. F. Mattrey[22], F. Moriyasu[23], L. Solbiati, H.-P. Weskott[25], H.-X. Xu[26]

Affiliations: Affiliation addresses are listed at the end of the article.

ACG Clinical Guideline: The Diagnosis and Management of Focal Liver Lesions

Jorge A. Marrero, MD[1], Joseph Ahn, MD, FACG[2] and K. Rajender Reddy, MD, FACG[3] on behalf of the Practice Parameters Committee of the American College of Gastroenterology

Focal liver lesions (FLL) have been a common reason for consultation faced by gastroenterologists and hepatologists. The increasing and widespread use of imaging studies has led to an increase in detection of incidental FLL. It is important to consider not only malignant liver lesions, but also benign solid and cystic liver lesions such as hemangioma, focal nodular hyperplasia, hepatocellular adenoma, and hepatic cysts, in the differential diagnosis. In this ACG practice guideline, the authors provide an evidence-based approach to the diagnosis and management of FLL.

Am J Gastroenterol advance online publication, 19 August 2014; doi:10.1038/ajg.2014.213

FEATURE ARTICLE

What you need to know about imag

A practical review of current literature

Gaurav Bhattacharya (MD), Michael Kabiri (MD), Laura Callan (Meds 20

Faculty Reviewer: Dr Michael Lock, MD, CCFP, FCFP, FRCPC Chair (Department of Oncology, Division of Radiation Oncology)

Clinical Practice Guidelines

CrossMark

EASL | JOURNAL OF HEPATOLOGY

EASL Clinical Practice Guidelines on the management of benign liver tumours☆

European Association for the Study of the Liver (EASL)*

KLINICKÁ ANAMNÉZA

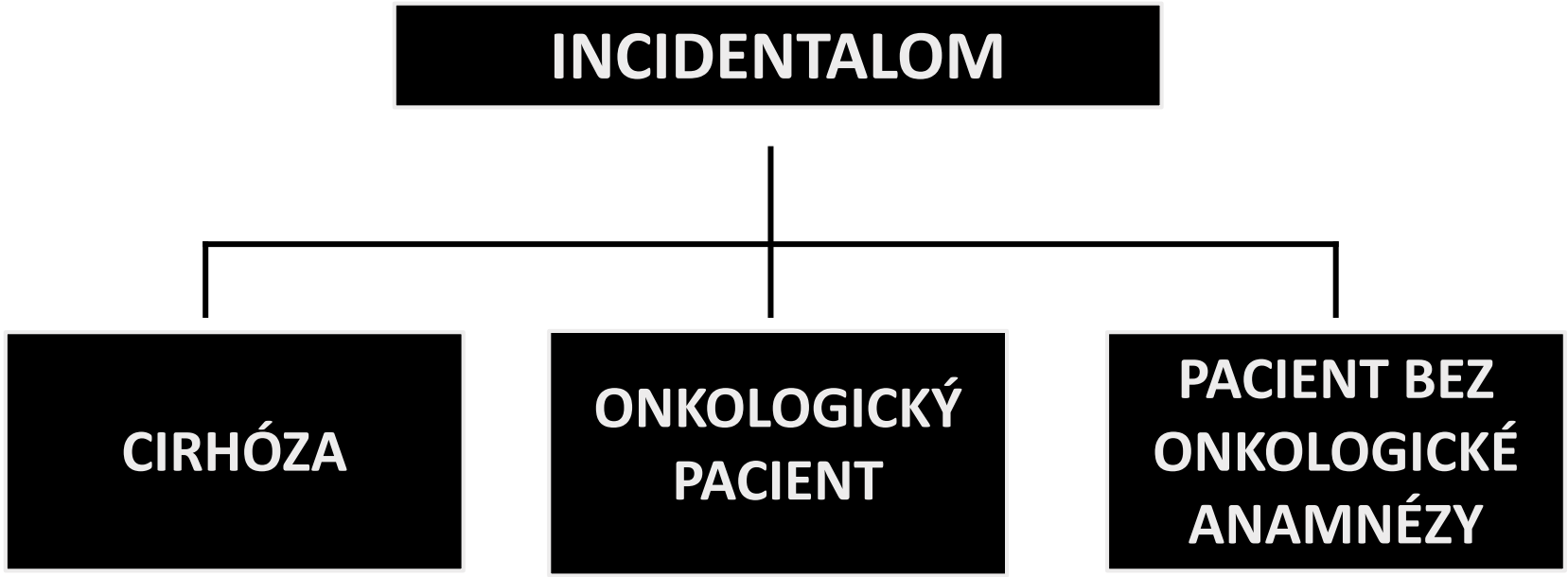
- Věk, pohlaví
- **Cirhóza nebo chronické jaterní onemocnění**
- **Onkologická anamnéza, nález nebo podezření na něj**

- **Low-risk pacient (věk!)**

Bez známé malignity

Nejsou známky dysfunkce jater

Žádné jaterní rizikové faktury † (hepatitis, nonalcoholic steatohepatitis, alcoholism, sclerosing cholangitis, primary biliary cirrhosis, choledochal cysts, hemochromatosis and other hereditary hepatic conditions, and anabolic steroid use.)


INCIDENTALOM
CIRHÓZA
ONKOLOGICKÝ PACIENT
PACIENT BEZ ONKOLOGICKÉ ANAMNÉZY

ZDRAVÝ *vs* ONKOLOGICKÝ

- **Léze do 15mm** – obyčejně příliš malé na klasifikaci

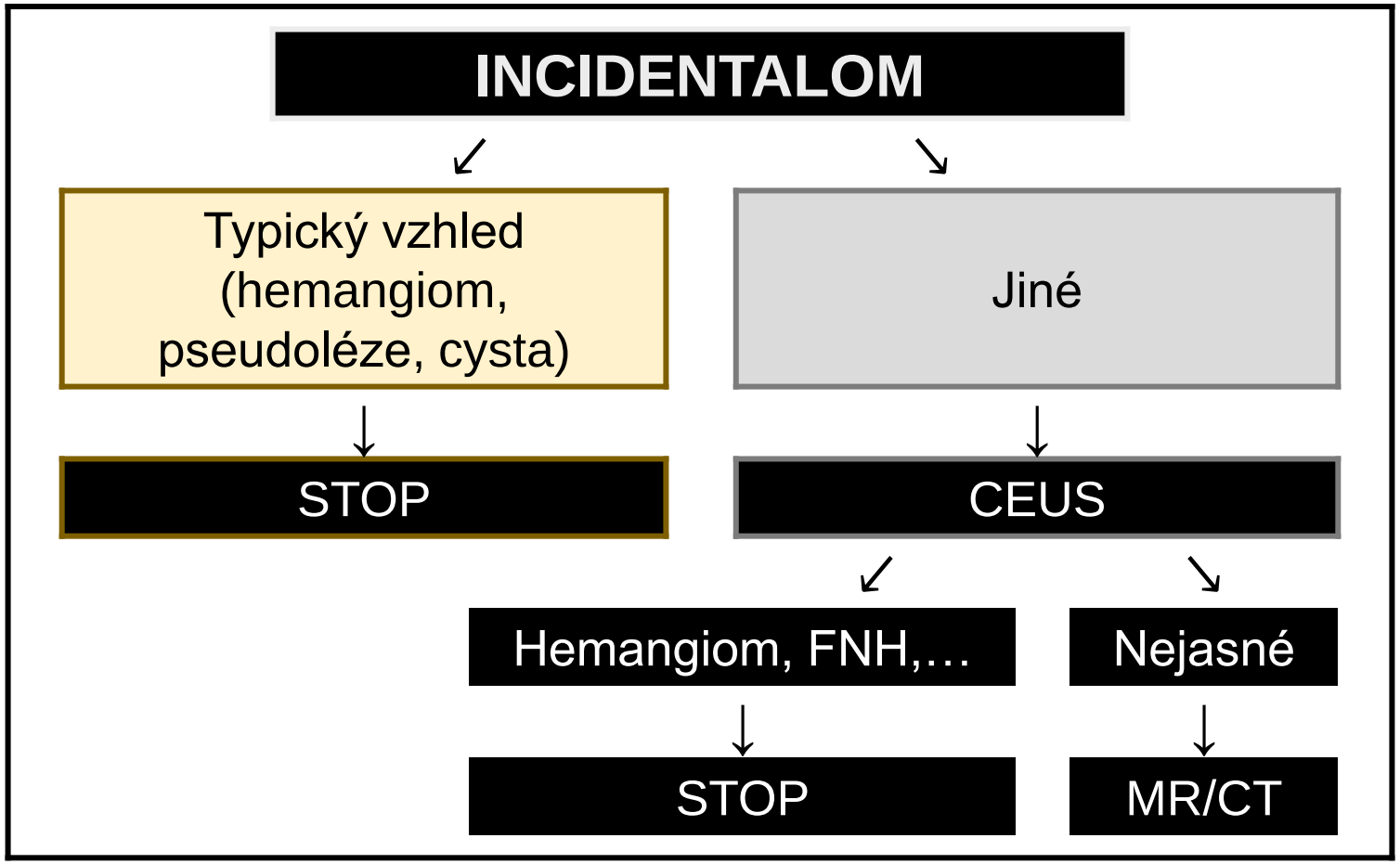
- Pacient bez onkologické anamnézy
  - solitární ložisko do 15mm je BENIGNÍ

- Pacient s onkologickou anamnézou
  - 12-50% maligní
  - Čím více ložisek, tím větší pravděpodobnost malignity (>5 ložisek = 76%)

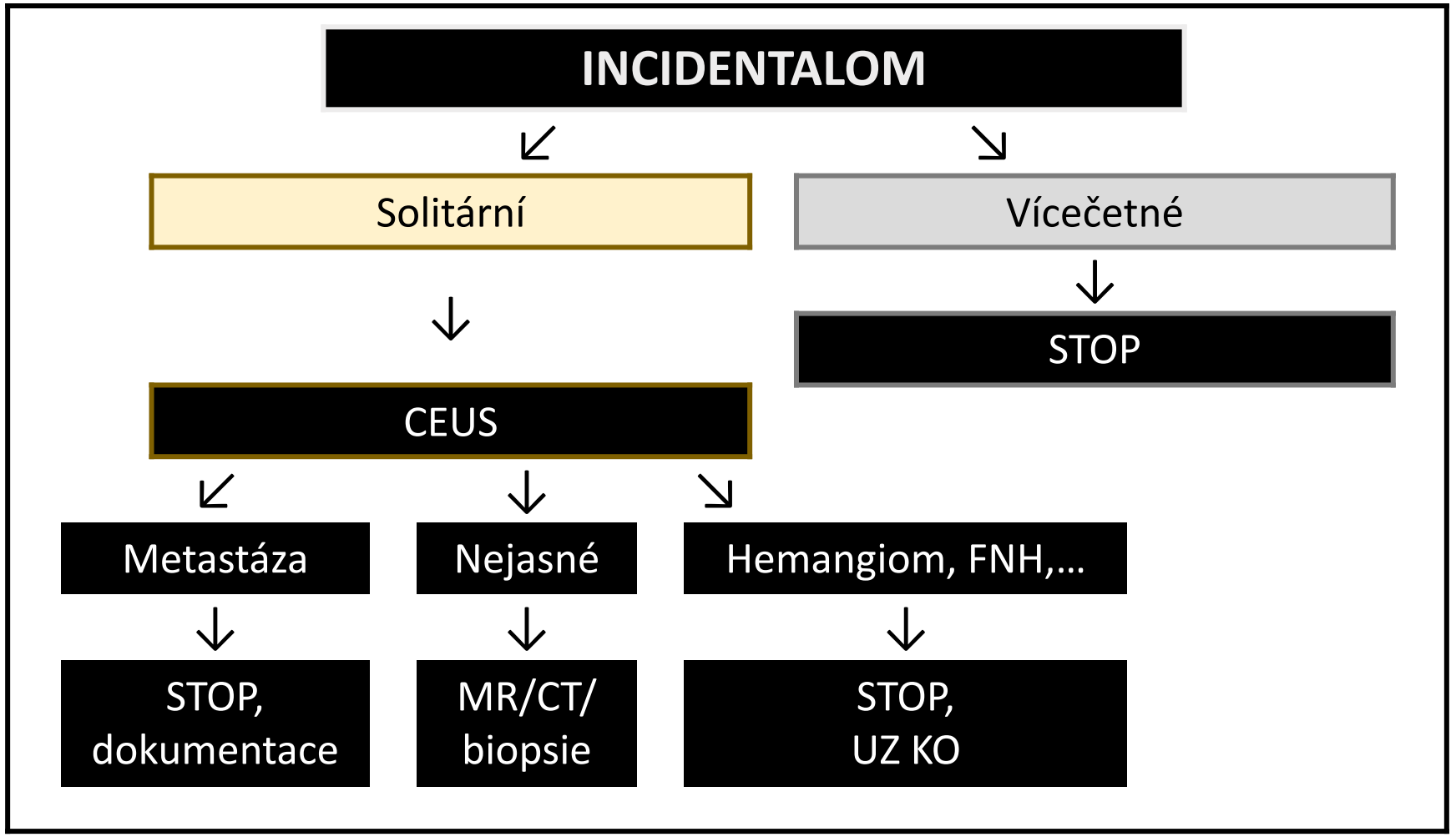
- Typ primárního tumoru
  - Ca prsu – vícečetné malé léze
  - CRC – solitární nebo nečetné větší ložiska

1 Jones EC et al: The frequency and significance of small (less than or equal to 15 mm) hepatic lesions detected by CT. Am J Roent 1992;158: 535-539.
2 Schwarz LH et al: Prevalence and Importance of Small Hepatic Lesions Found at CT in Patients with Cancer. Radiology 1999;210:71-74.
3 Robinson PJ et al: Small 'indeterminate' lesions on CT of the liver: a follow-up study of stability. Brit J Rad 2003; 76:866-874.

BEZ ONKOLOG. ANAMNÉZY



S ONKOLOG. ANAMNÉZOU



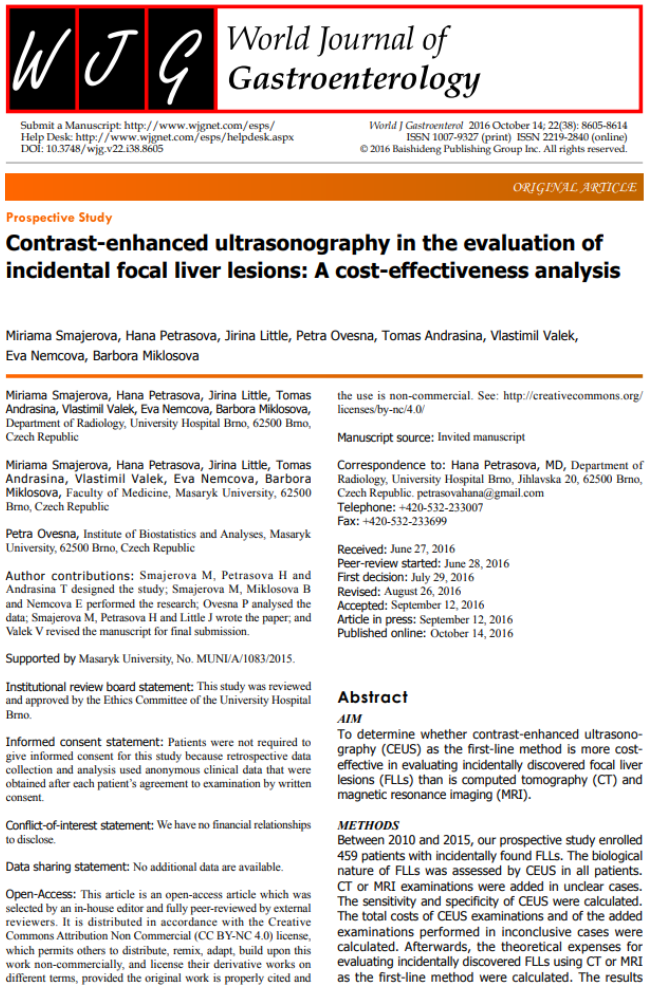
CEUS/CT/MR - cost-effectiveness analysis

RESULTS

The total cost of the diagnostic process using CEUS for all enrolled patients with FLLs was 75884 USD. When the expenses for additional CT and MRI examinations performed in inconclusive cases were added, the total cost was 90540 US dollar (USD). If all patients had been examined by CT or MR as the first-line method, the costs would have been 78897 USD or 384235 USD, respectively. The difference between the cost of CT and CEUS was 3013 USD (4%) and that between MRI and CEUS was 308352 USD (406.3%). We correctly described 97.06% of benign or malignant lesions, with 96.99% sensitivity and 97.09% specificity. Positive predictive value was 94.16% and negative predictive value was 98.52%. In cases with 4 and more lesions, malignancy is significantly more frequent and inconclusive findings significantly less frequent ($P < 0.001$).

CONCLUSION

While the costs of CEUS and CT in evaluating FLLs are comparable, CEUS examination is far more cost-effective in comparison to MRI.



World Journal of Gastroenterology

Submit a Manuscript: http://www.wjgnet.com/esps/
Help Desk: http://www.wjgnet.com/esps/helpdesk.aspx
DOI: 10.3748/wjg.v22.i38.8605

World J Gastroenterol 2016 October 14; 22(38): 8605-8614
ISSN 1007-9327 (print) ISSN 2219-2840 (online)

ORIGINAL ARTICLE

Prospective Study

Contrast-enhanced ultrasonography in the evaluation of incidental focal liver lesions: A cost-effectiveness analysis

Miriama Smajerova, Hana Petrasova, Jirina Little, Petra Ovesna, Tomas Andrasina, Vlastimil Valek, Eva Nemcova, Barbora Miklosova

Miriama Smajerova, Hana Petrasova, Jirina Little, Tomas Andrasina, Vlastimil Valek, Eva Nemcova, Barbora Miklosova, Department of Radiology, University Hospital Brno, 62500 Brno, Czech Republic

Miriama Smajerova, Hana Petrasova, Jirina Little, Tomas Andrasina, Vlastimil Valek, Eva Nemcova, Barbora Miklosova, Faculty of Medicine, Masaryk University, 62500 Brno, Czech Republic

Petra Ovesna, Institute of Biostatistics and Analyses, Masaryk University, 62500 Brno, Czech Republic

Author contributions: Smajerova M, Petrasova H and Andrasina T designed the study; Smajerova M, Miklosova B and Nemcova E performed the research; Ovesna P analysed the data; Smajerova M, Petrasova H and Little J wrote the paper; and Valek V revised the manuscript for final submission.

Supported by Masaryk University, No. MUNI/A/1083/2015.

Institutional review board statement: This study was reviewed and approved by the Ethics Committee of the University Hospital Brno.

Informed consent statement: Patients were not required to give informed consent for this study because retrospective data collection and analysis used anonymous clinical data that were obtained after each patient's agreement to examination by written consent.

Conflict-of-interest statement: We have no financial relationships to disclose.

Data sharing statement: No additional data are available.

Manuscript source: Invited manuscript

Correspondence to: Hana Petrasova, MD, Department of Radiology, University Hospital Brno, Jihlavska 20, 62500 Brno, Czech Republic. petrasovahana@gmail.com
Telephone: +420-532-233007
Fax: +420-532-233699

Received: June 27, 2016
Peer-review started: June 28, 2016
First decision: July 29, 2016
Revised: August 26, 2016
Accepted: September 12, 2016
Article in press: September 12, 2016
Published online: October 14, 2016

Abstract

AIM

To determine whether contrast-enhanced ultrasonography (CEUS) as the first-line method is more cost-effective in evaluating incidentally discovered focal liver lesions (FLLs) than is computed tomography (CT) and magnetic resonance imaging (MRI).

METHODS

Between 2010 and 2015, our prospective study enrolled 459 patients with incidentally found FLLs. The biological nature of FLLs was assessed by CEUS in all patients. CT or MRI examinations were added in unclear cases. The sensitivity and specificity of CEUS were calculated. The total costs of CEUS examinations and of the added examinations performed in inconclusive cases were calculated. Afterwards, the theoretical expenses for evaluating incidentally discovered FLLs using CT or MRI as the first-line method were calculated. The results

MUNI MED

Smajerova M & Petrasova H & Little J & Ovesná P & Andrasina T & Valek V & Nemcova E & Miklosova B. (2016). Contrast-enhanced ultrasonography in the evaluation of incidental focal liver lesions: A cost-effectiveness analysis. World Journal of Gastroenterology. 22. 8605..

FAKULTNÍ NEMOCNICE BRNO

Clinical Practice Guidelines

EASL JOURNAL OF HEPATOLOGY

EASL Clinical Practice Guidelines on the management of benign liver tumours☆

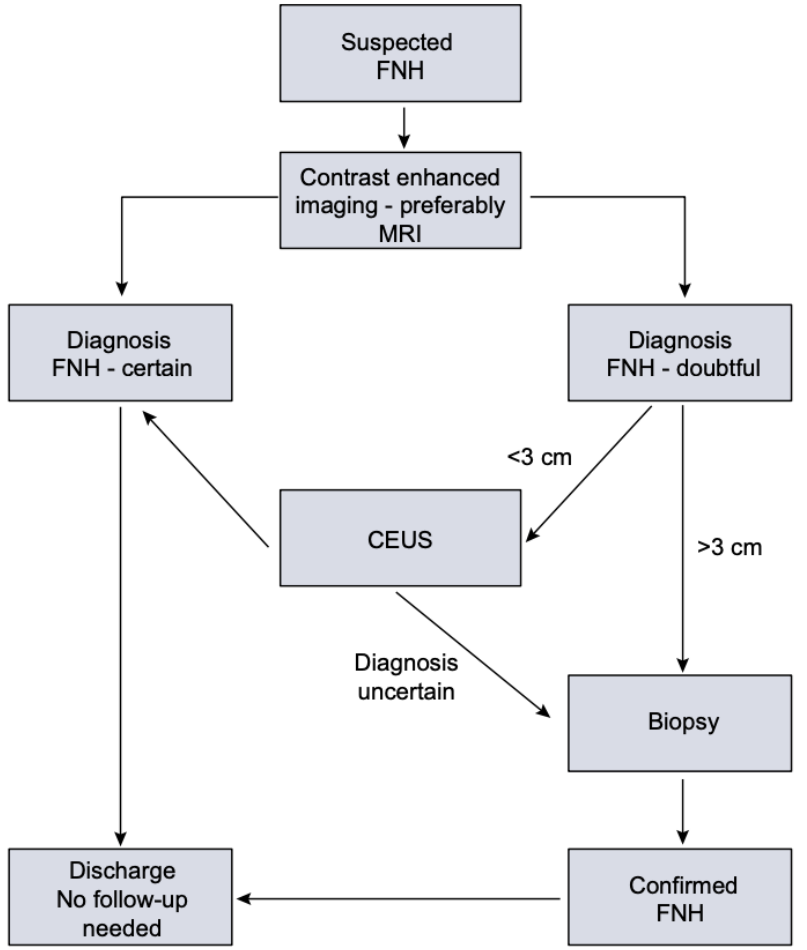
European Association for the Study of the Liver (EASL)*

Hepatic haemangioma

- In patients with a normal or healthy liver, a hyperechoic lesion is very likely to be a liver haemangioma. With typical radiology (homogeneous hyperechoic, sharp margin, posterior enhancement, and absence of halo sign) in a lesion less than 3 cm, ultrasound is sufficient to establish the diagnosis (**evidence level II-2, grade of recommendation 1**)
- In oncology patients or those with underlying liver disease, contrast enhanced imaging (CEUS, CT or MRI) is required (**evidence level II-2, grade of recommendation 1**)
- The diagnosis by contrast enhanced imaging is based on a typical vascular profile characterized by peripheral and globular enhancement on arterial phase followed by a central enhancement on delayed phases. MRI provides additional findings such as lesion signal on T1-, T2- weighted sequences, and diffusion imaging (**evidence level II-2, grade of recommendation 1**)
- Due to its benign course, imaging follow-up is not required for typical haemangioma (**evidence level II-2, grade of recommendation 1**)
- Pregnancy and oral contraceptives are not contraindicated (**evidence level III; grade of recommendation 2**)
- Conservative management is appropriate for typical cases (**evidence level II-2, grade of recommendation 1**)
- In the presence of Kasabach-Merrit syndrome, growing lesions or lesions symptomatic by compression - refer to benign liver tumour MDT (**evidence level III, grade of recommendation 1**)

Focal nodular hyperplasia

- CEUS, CT, or MRI can diagnose FNH with nearly 100% specificity when typical imaging features are seen in combination (**evidence level II-2, grade of recommendation 1**)
- MRI has the highest diagnostic performance overall. The highest diagnostic accuracy by CEUS is achieved in FNH less than 3 cm (**evidence level II-2, grade of recommendation 1**)
- For a lesion typical of FNH follow-up is not necessary, unless there is underlying vascular liver disease (**evidence level III, grade of recommendation 2**)
- Treatment is not recommended (**evidence level II-3, grade of recommendation 2**)
- If imaging is atypical, or the patients is symptomatic, refer to a benign liver tumour MDT (**evidence level III, grade of recommendation 1**)



Hepatocellular adenoma

- MRI is superior to all other imaging modalities and due to its intrinsic properties to detect fat and vascular spaces it offers an opportunity to subtype HCA up to 80% (**evidence level II-2, grade of recommendation 1**)
- The positive identification of HNF-1α HCA or inflammatory HCA is achievable with MRI with >90% specificity. By contrast, identification of β-catenin activated HCA and its distinction with unclassified HCA and hepatocellular carcinoma is not possible by any imaging technique (**evidence level II-2, grade of recommendation 1**)
- Treatment decisions are based on gender, size and pattern of progression (**evidence level III, grade of recommendation 2**)
- Upon HCA diagnosis, lifestyle changes such as discontinuation of OCP as well as weight loss should be advised (**evidence level II-2, grade of recommendation 1**)
- HCA resection is recommended irrespective of size in men and in any instance of proven β-catenin mutation (**evidence level II-3, grade of recommendation 2**)
- In women, a period of 6 months observation after lifestyle change is advised and resection is indicated for nodules equal or greater than 5 cm and those continuing to grow (**evidence level II-3, grade of recommendation 2**)
- In women, lesions less than 5 cm should be reassessed at 1 year, and annual imaging adopted thereafter (**evidence level III, grade of recommendation 2**)
- A bleeding HCA with haemodynamic instability should be embolized and residual viable lesion on follow-up imaging is an indication for resection (**evidence level III, grade of recommendation 2**)

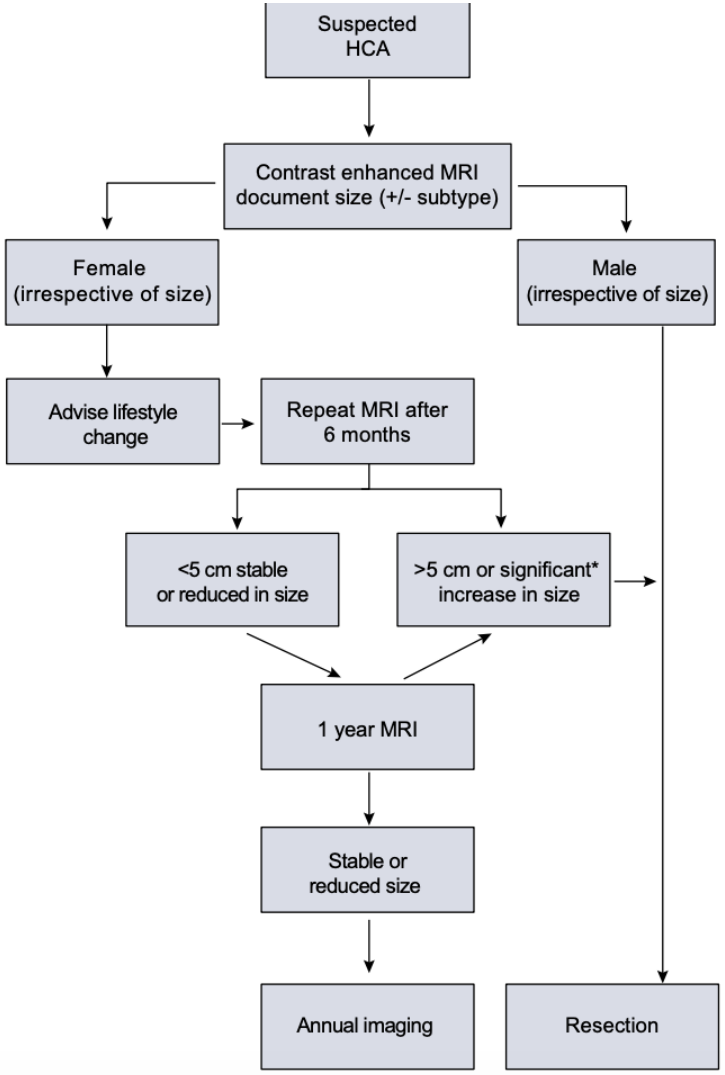
Clinical Practice Guidelines

CrossMark

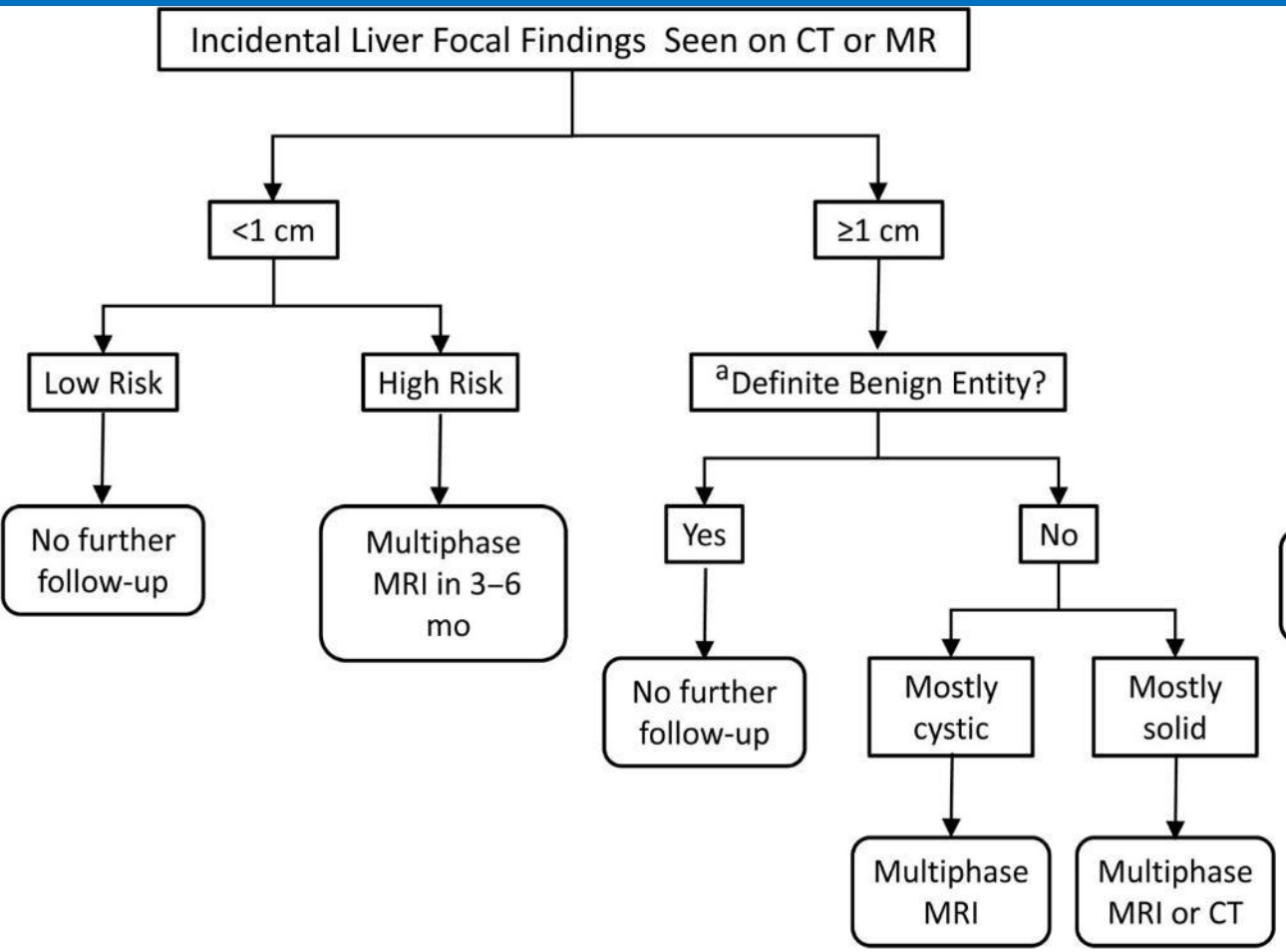
EASL JOURNAL OF HEPATOLOGY

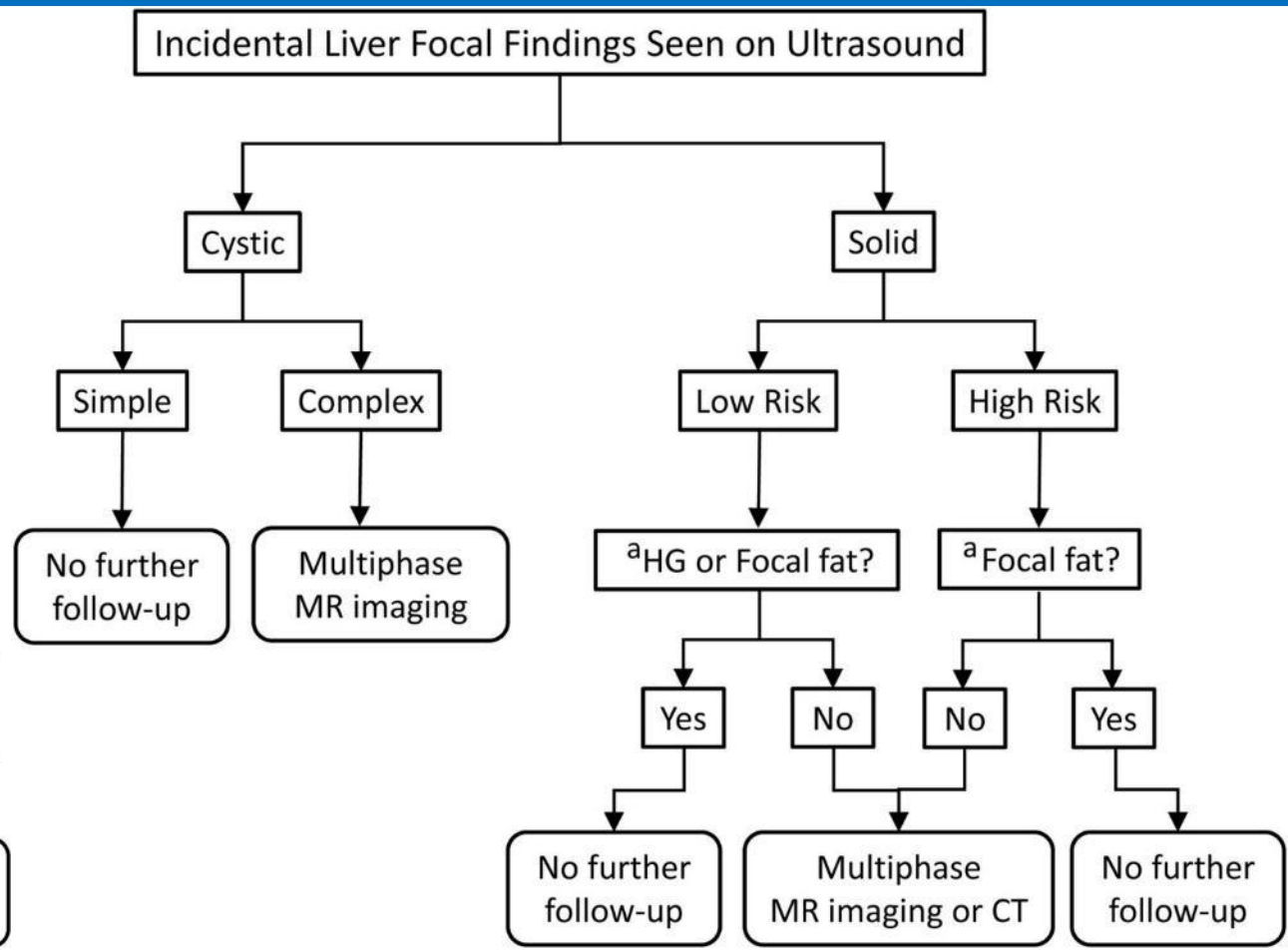
EASL Clinical Practice Guidelines on the management of benign liver tumours☆

European Association for the Study of the Liver (EASL)*



Radiology Clinics of North America





Searleman A.C., Aganovic L., Santillan C.S. Incidental Liver Findings on Cross-sectional Imaging. Radiol Clin N Am. 2021;59(4):569-590. doi:10.1016/j.rcl.2021.03.007

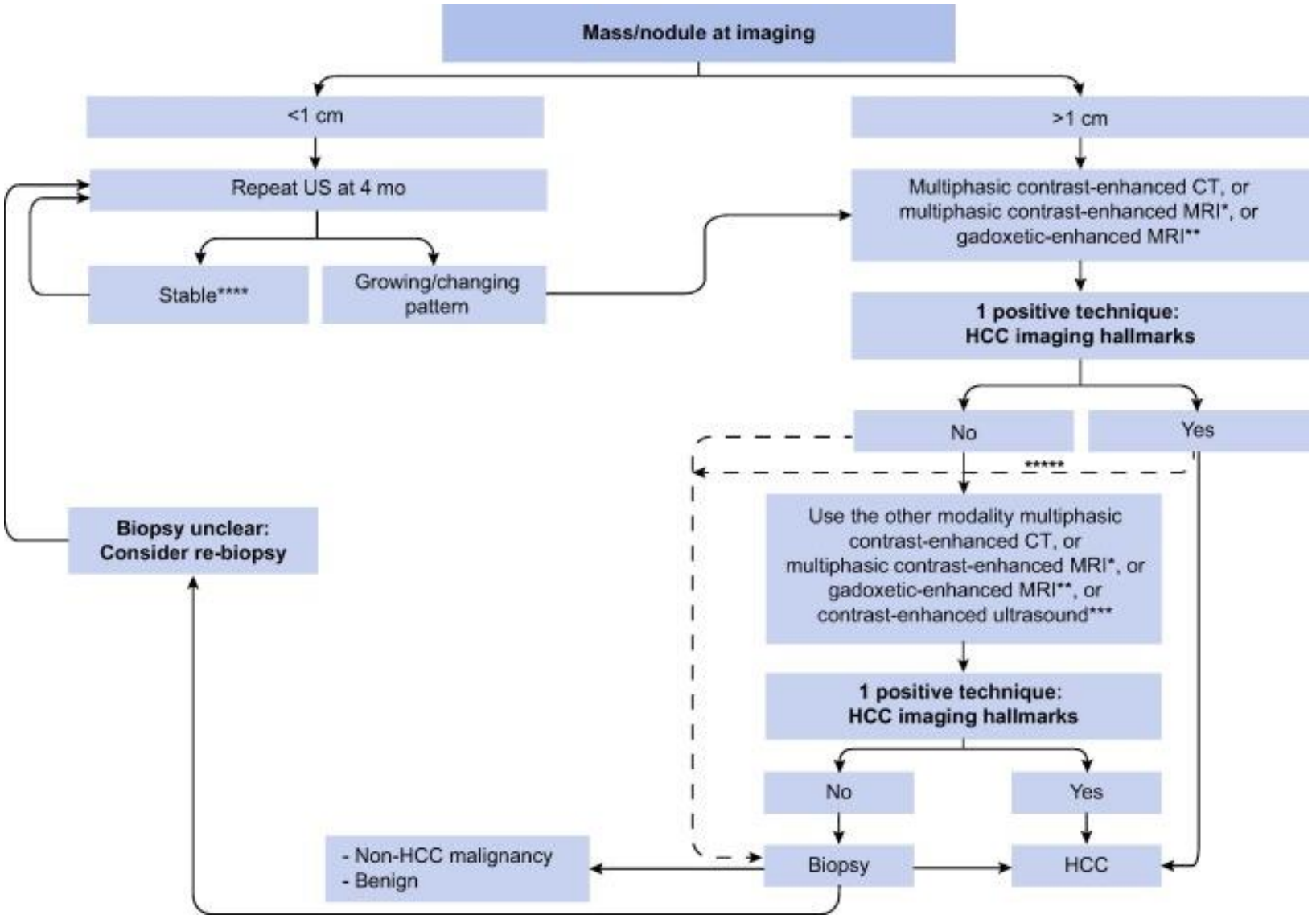
Ložisko v cirhotických játrech

Clinical Practice Guidelines

EASL EUROPEAN ASSOCIATION FOR THE STUDY OF THE LIVER | JOURNAL OF HEPATOLOGY

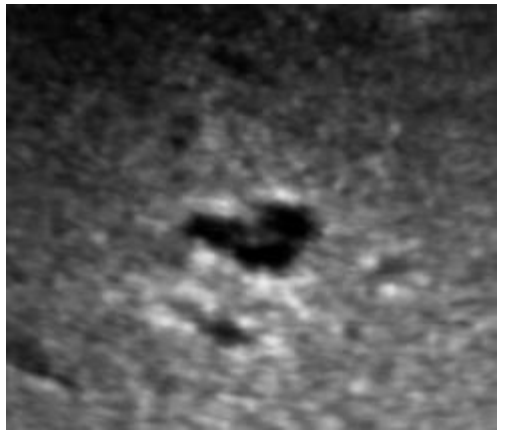
EASL–EORTC Clinical Practice Guidelines: Management of hepatocellular carcinoma

European Association for the Study of the Liver*,
European Organisation for Research and Treatment of Cancer

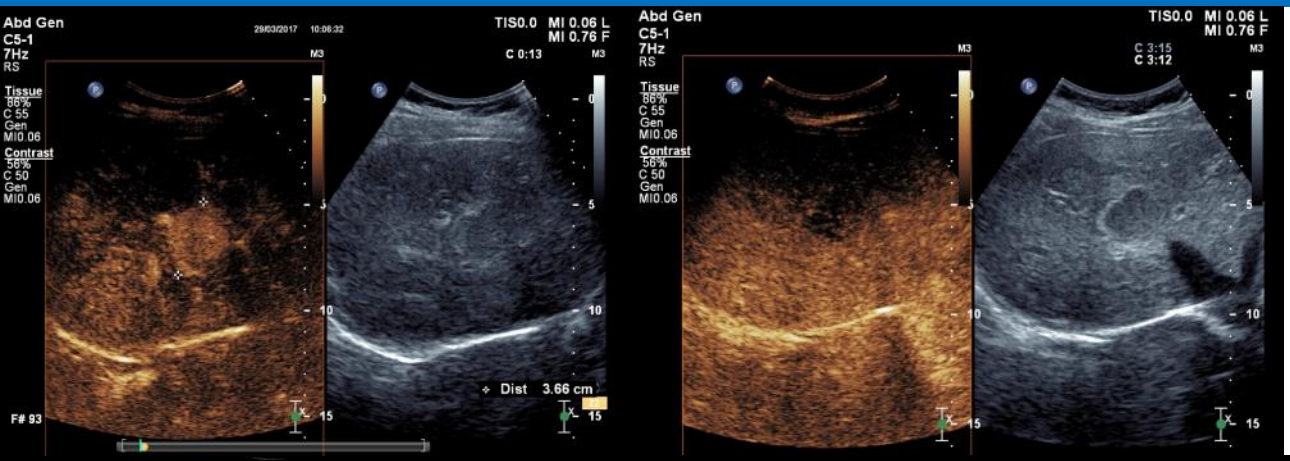


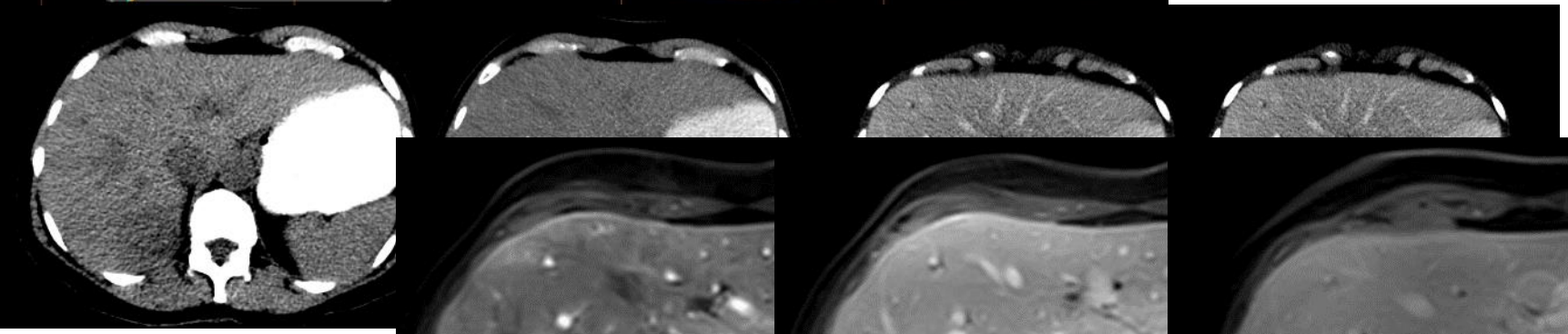
TAKE HOME MESSAGE

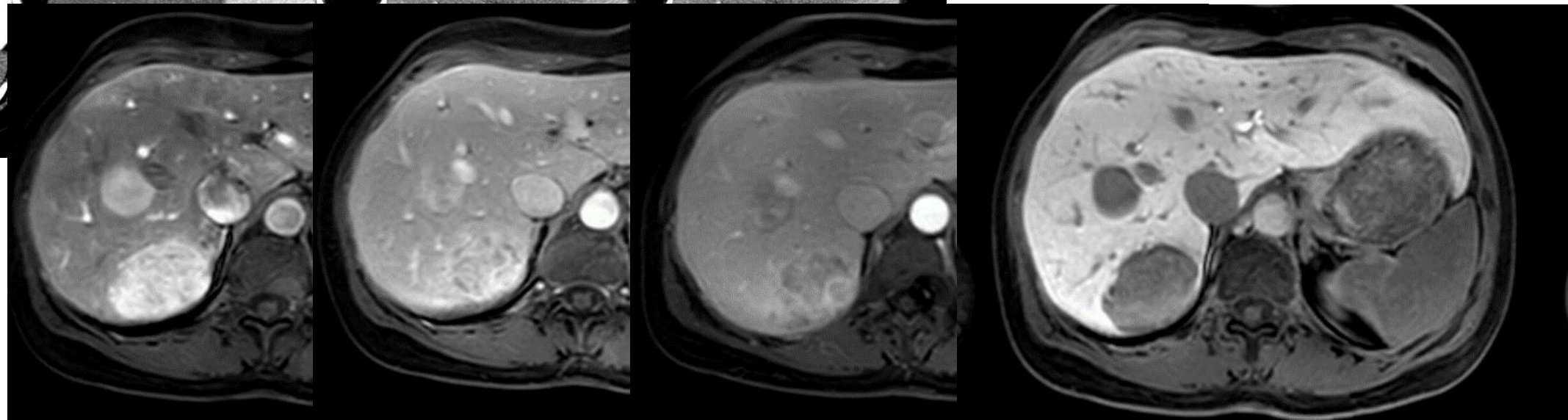
- Strategie došetřování dle typů pacienta:
  - Cirhóza
  - Onkologická anamnéze
  - Bez onkologické anamnézy



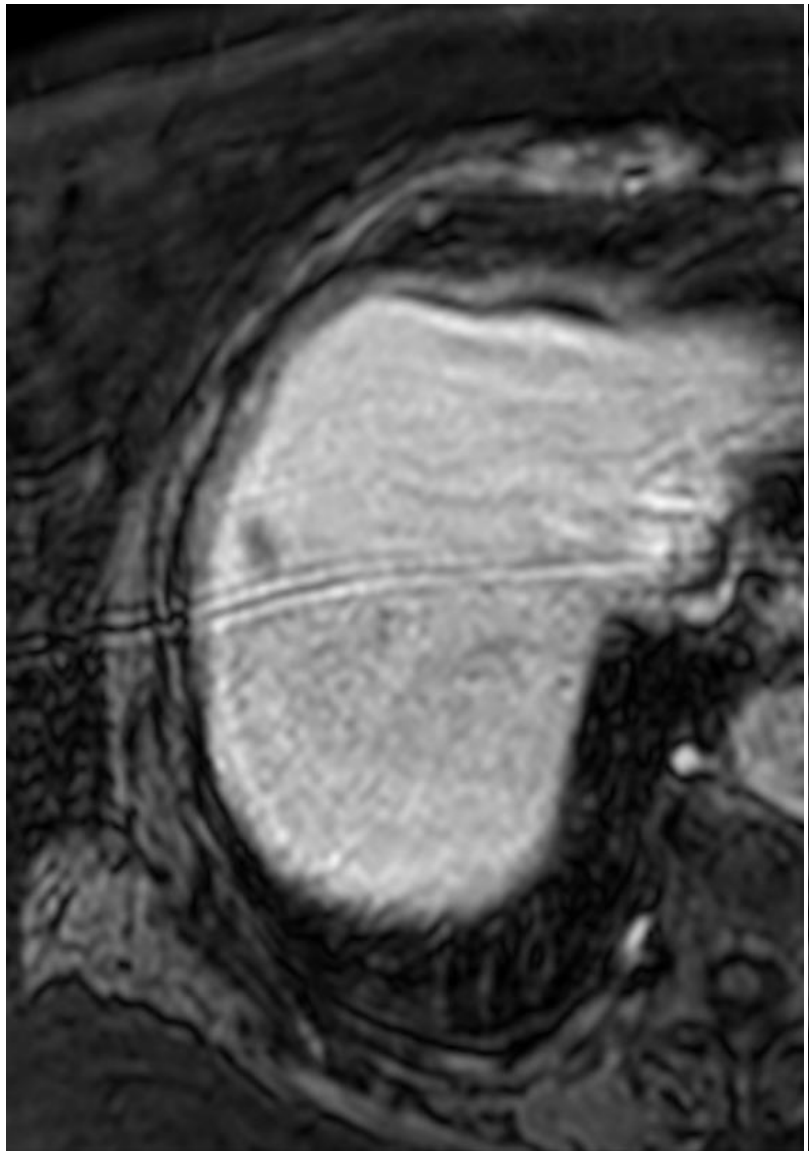
Angiomyolipom

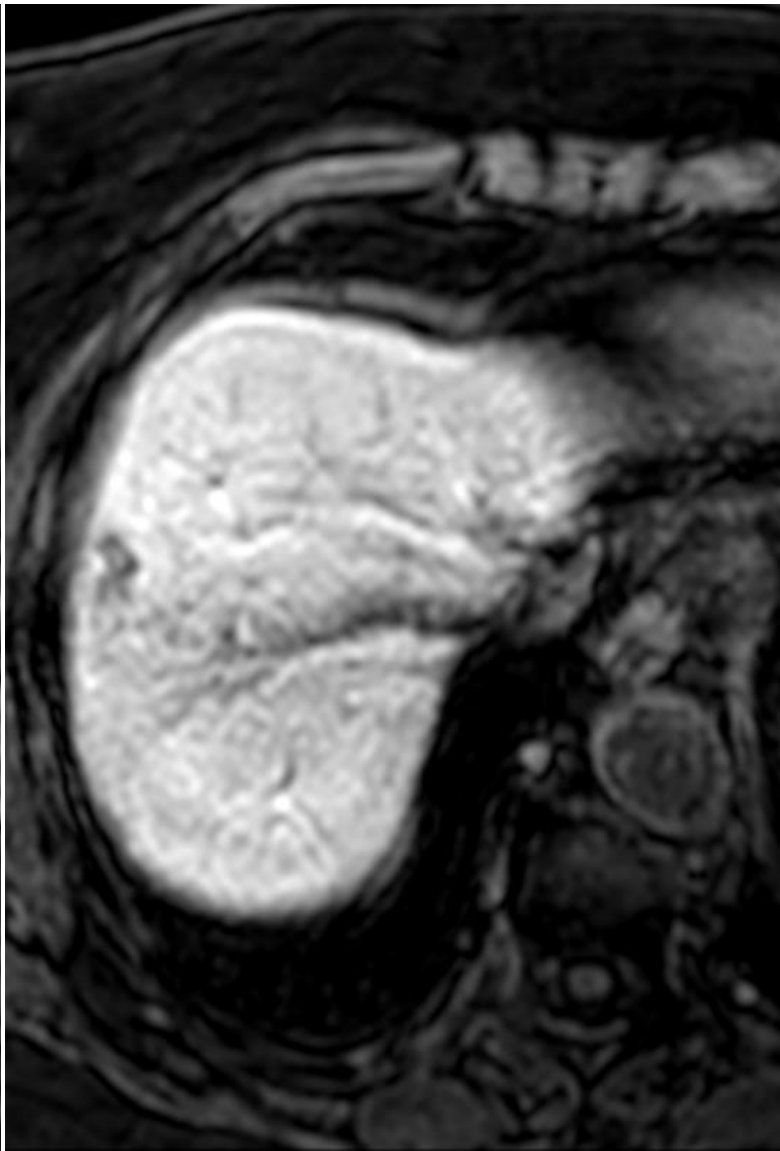




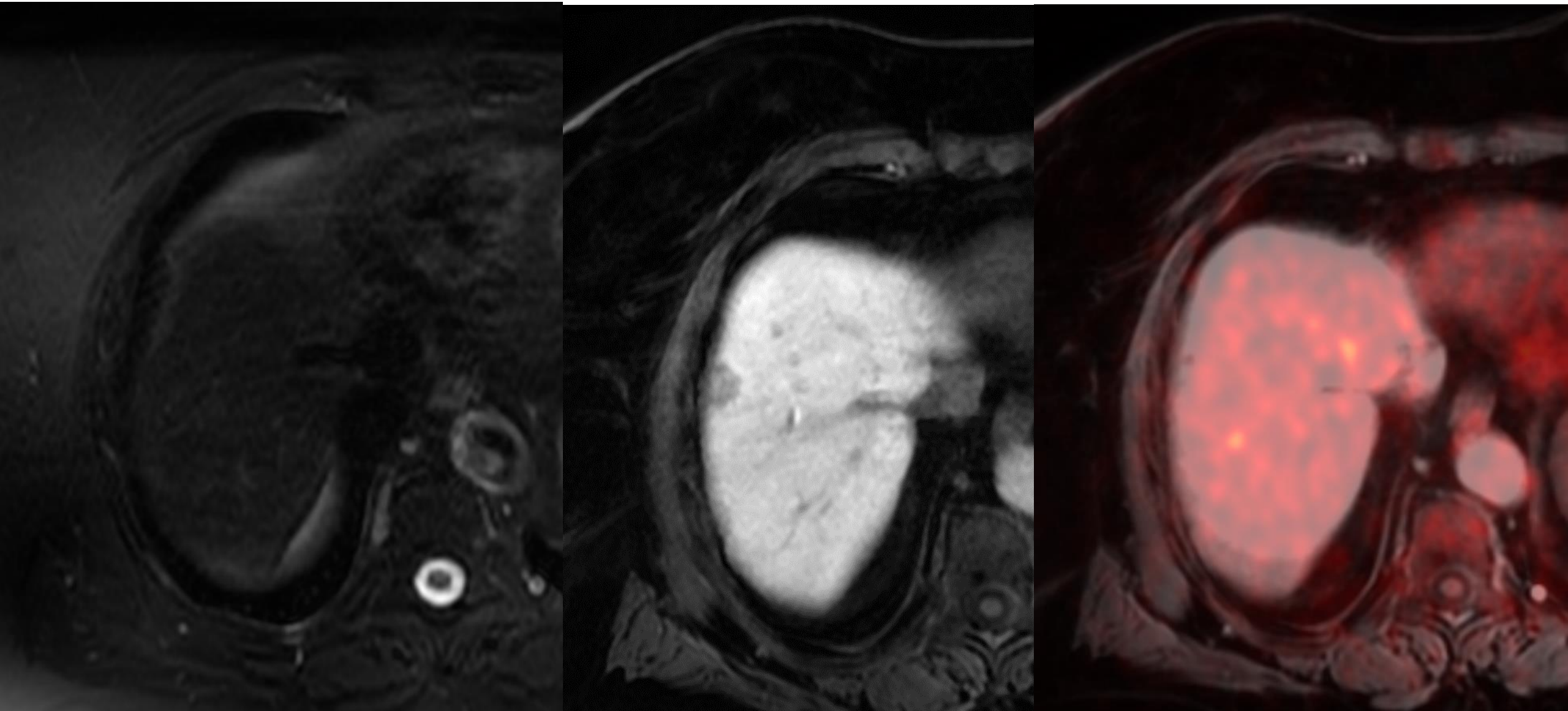


Pacientka s ca colon v anamnéze

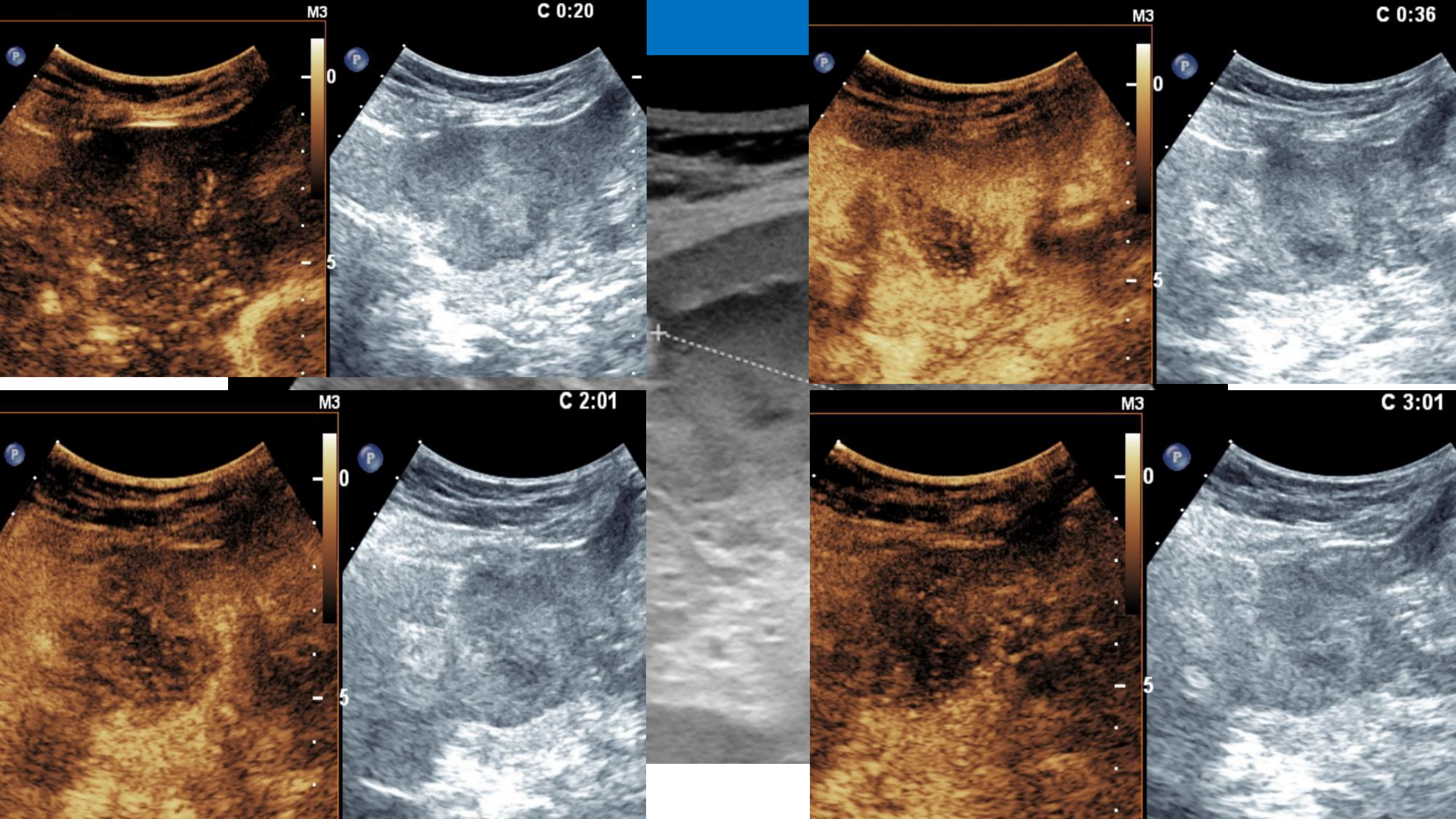


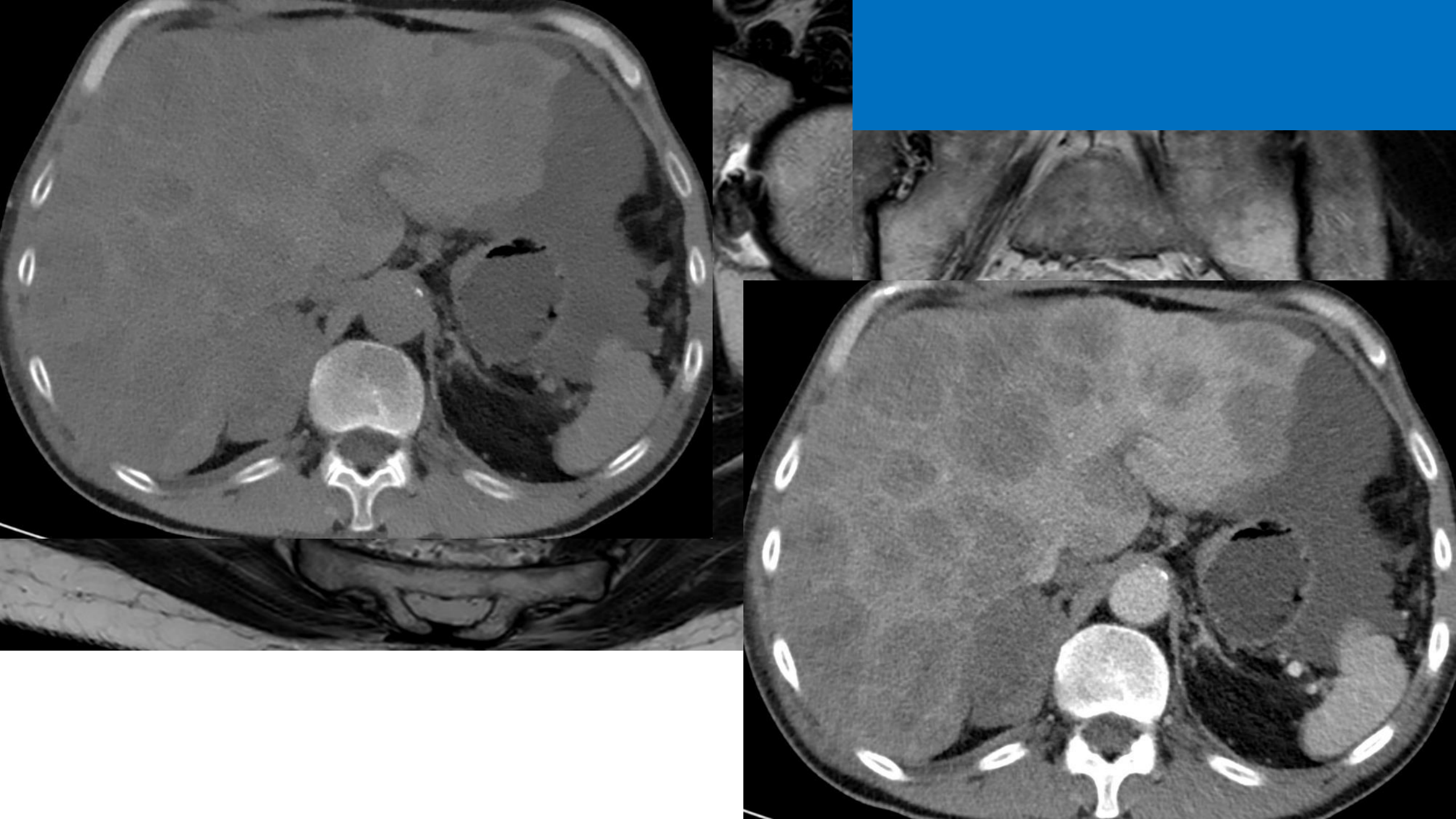


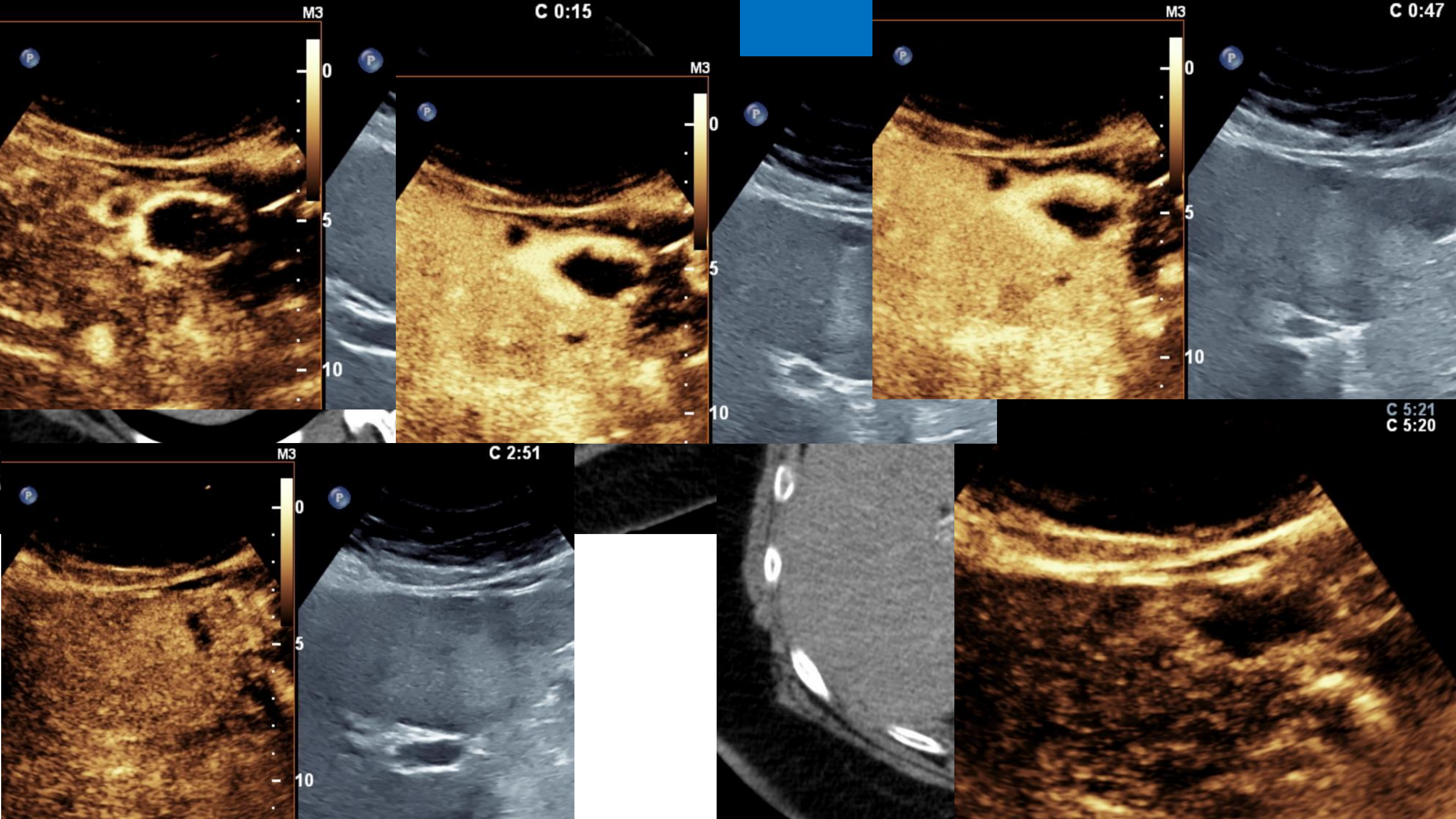
Pacientka s ca colon v anamnéze



Děkuji
za pozornost


M3
C 0:20
0
5
M3
C 0:36
0
5
M3
C 2:01
0
5
M3
C 3:01
0
5



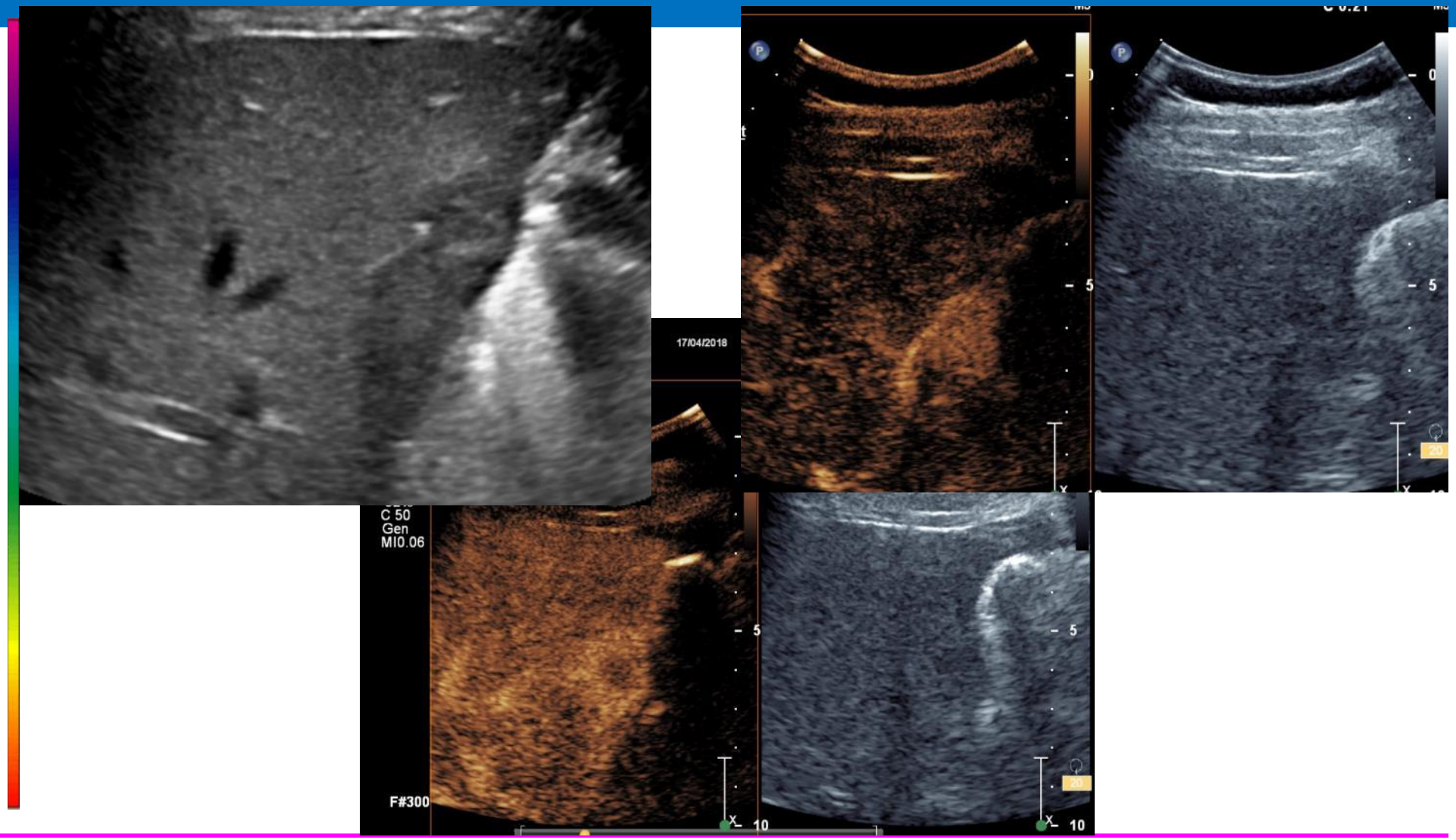

M3
C 0:15
M3
M3
C 0:47
C 5:21
C 5:20
M3
C 2:51

Zdroje

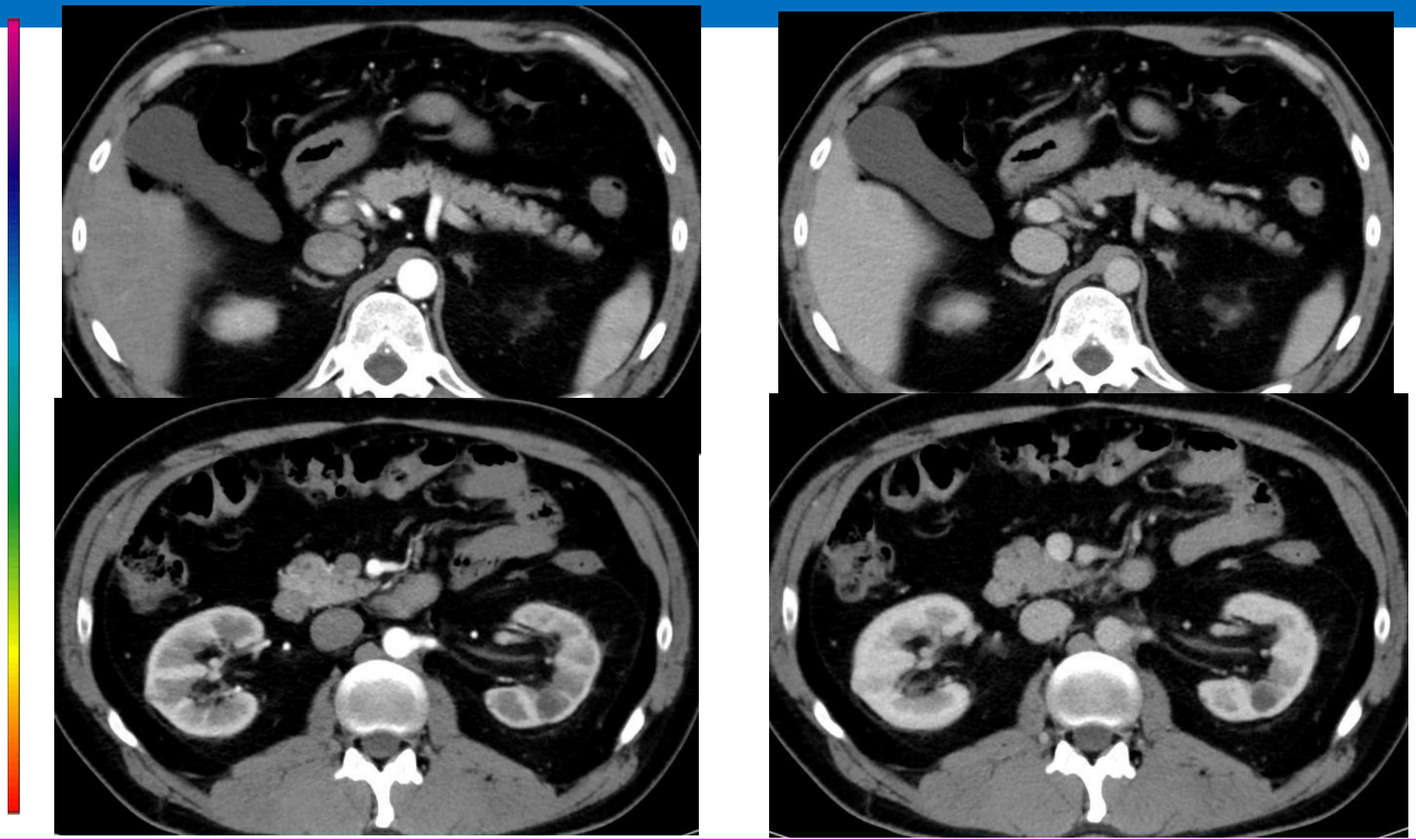
- https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3423934/
- https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3633040/
- https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3679037/
- https://link.springer.com/article/10.1007/s00261-018-1730-x
- https://www.journal-of-hepatology.eu/article/S0168-8278(16)30101-5/pdf
- https://pubs.rsna.org/doi/full/10.1148/rg.2017170034
- https://www.sciencedirect.com/science/article/pii/S0168827818302150

kazuistiky

CT vyšetření břicha, muž 1973, dyspeptické potíže
seminom, ložisko játra

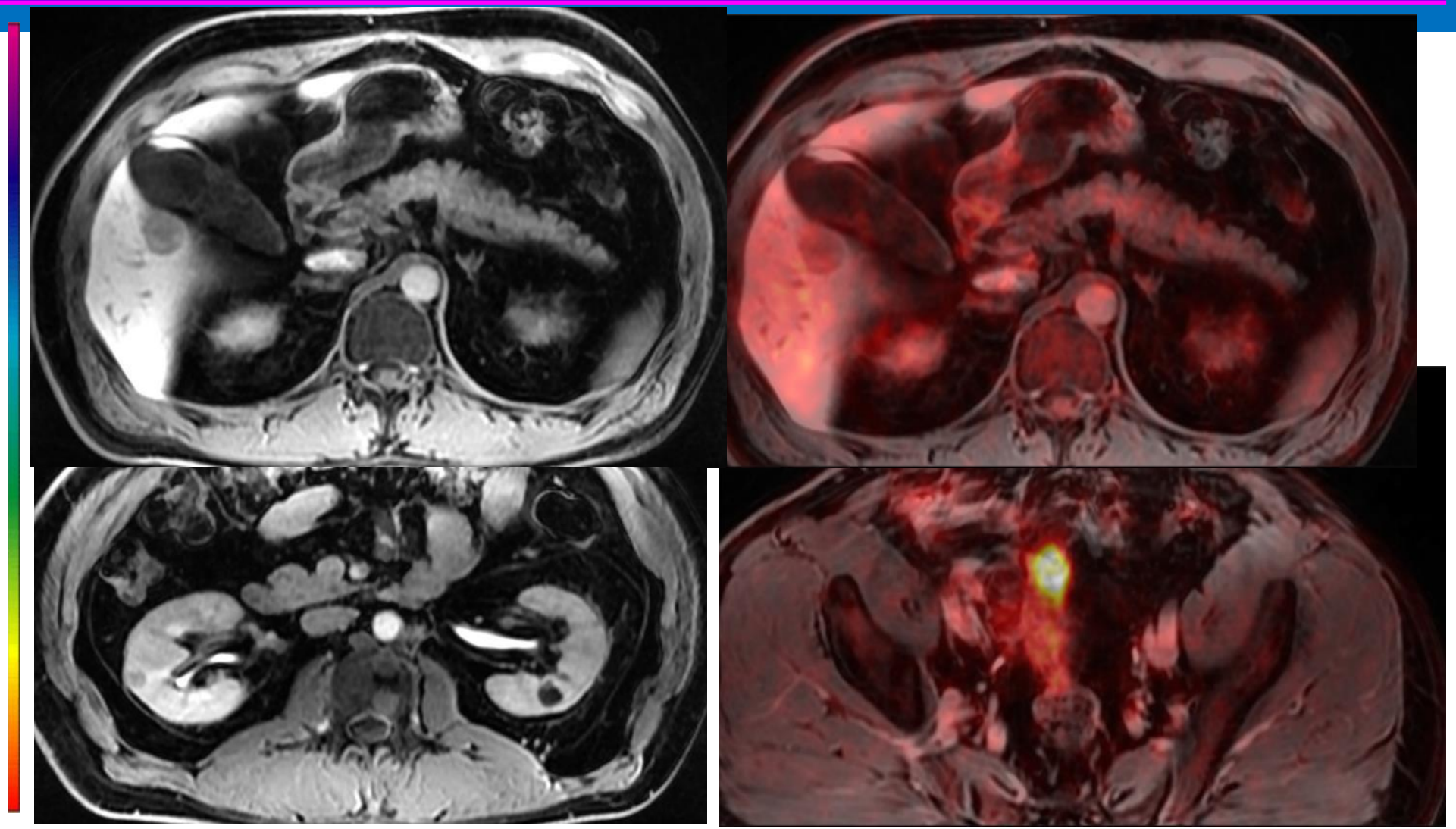


CT vyšetření břicha, muž 1973, dyspeptické potíže
seminom, ložisko játra, ledvina

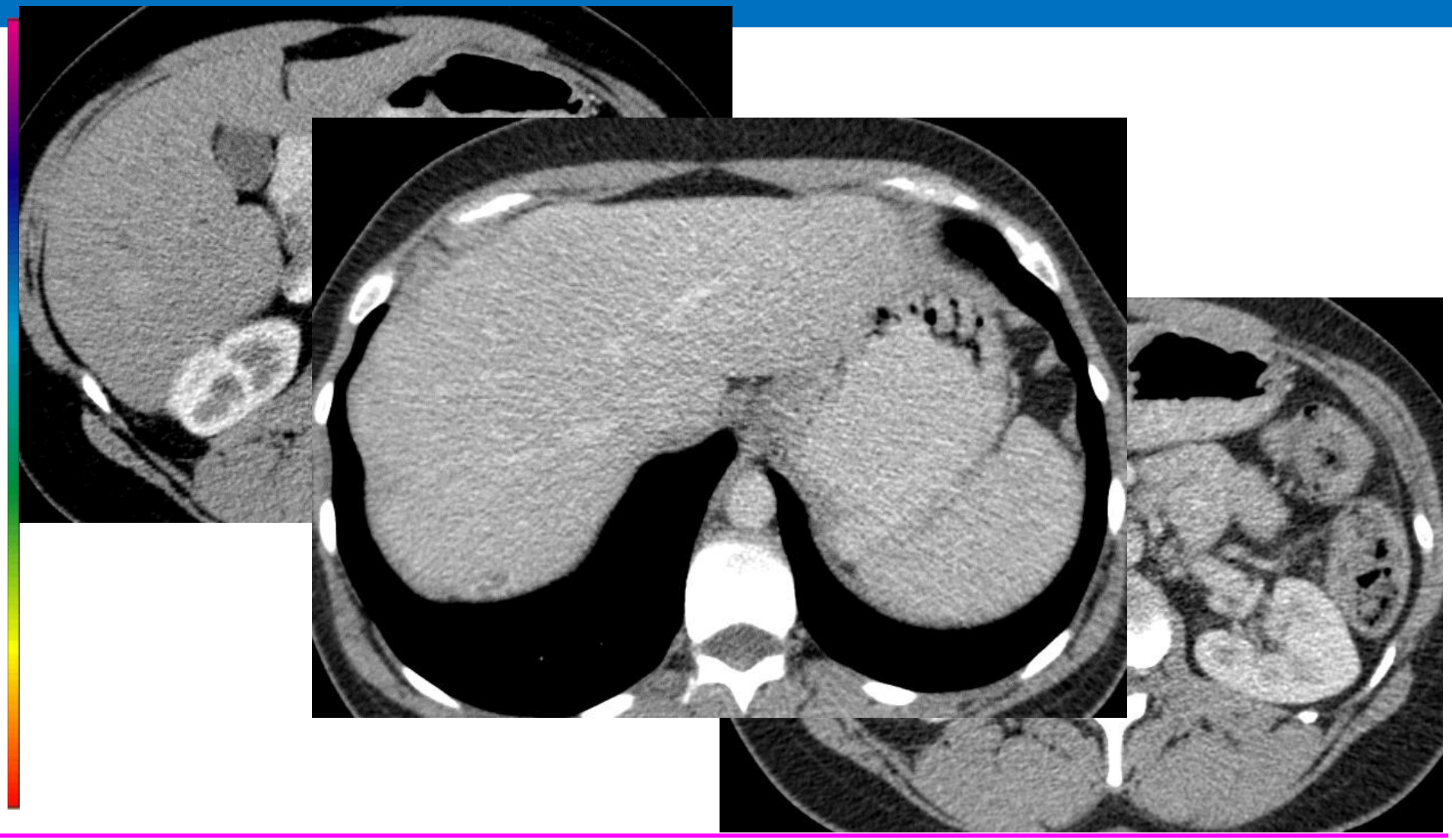


CT vyšetření břicha, muž 1973, dyspeptické potíže seminom, ložisko játra, tumor sigmatu

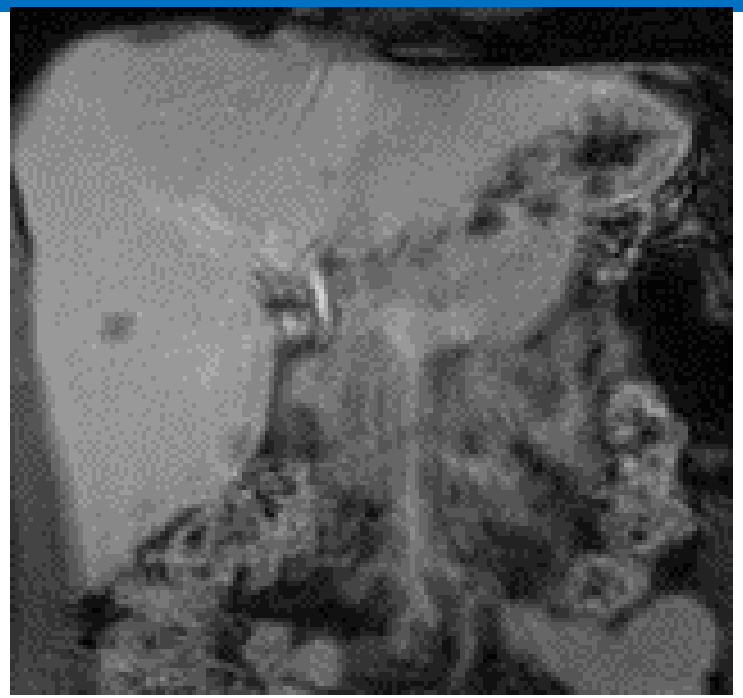
CT vyšetření břicha, muž 1973, dyspeptické potíže
PET-MR



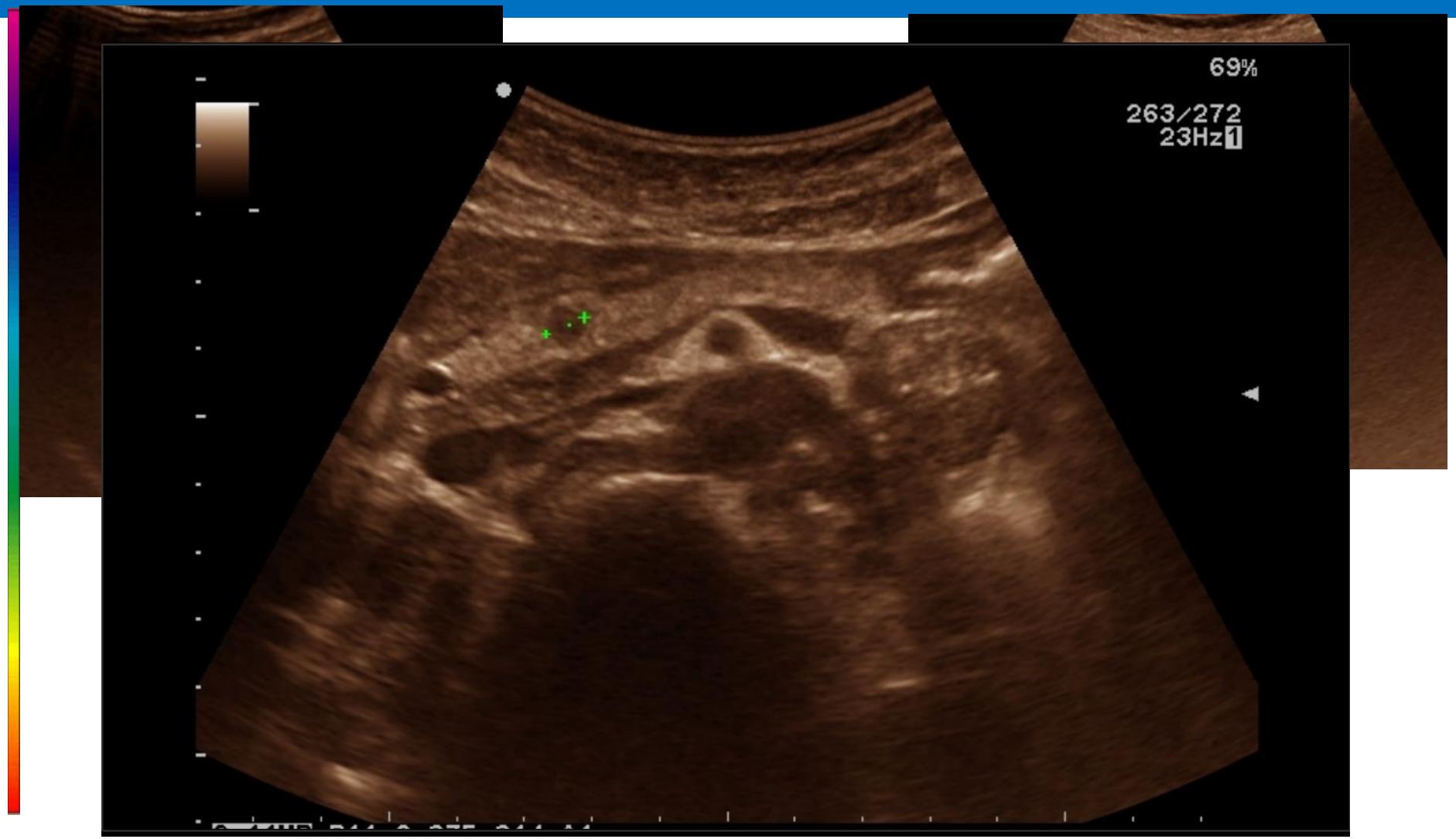
2010, UZ, hemangiom, CT nepopsané



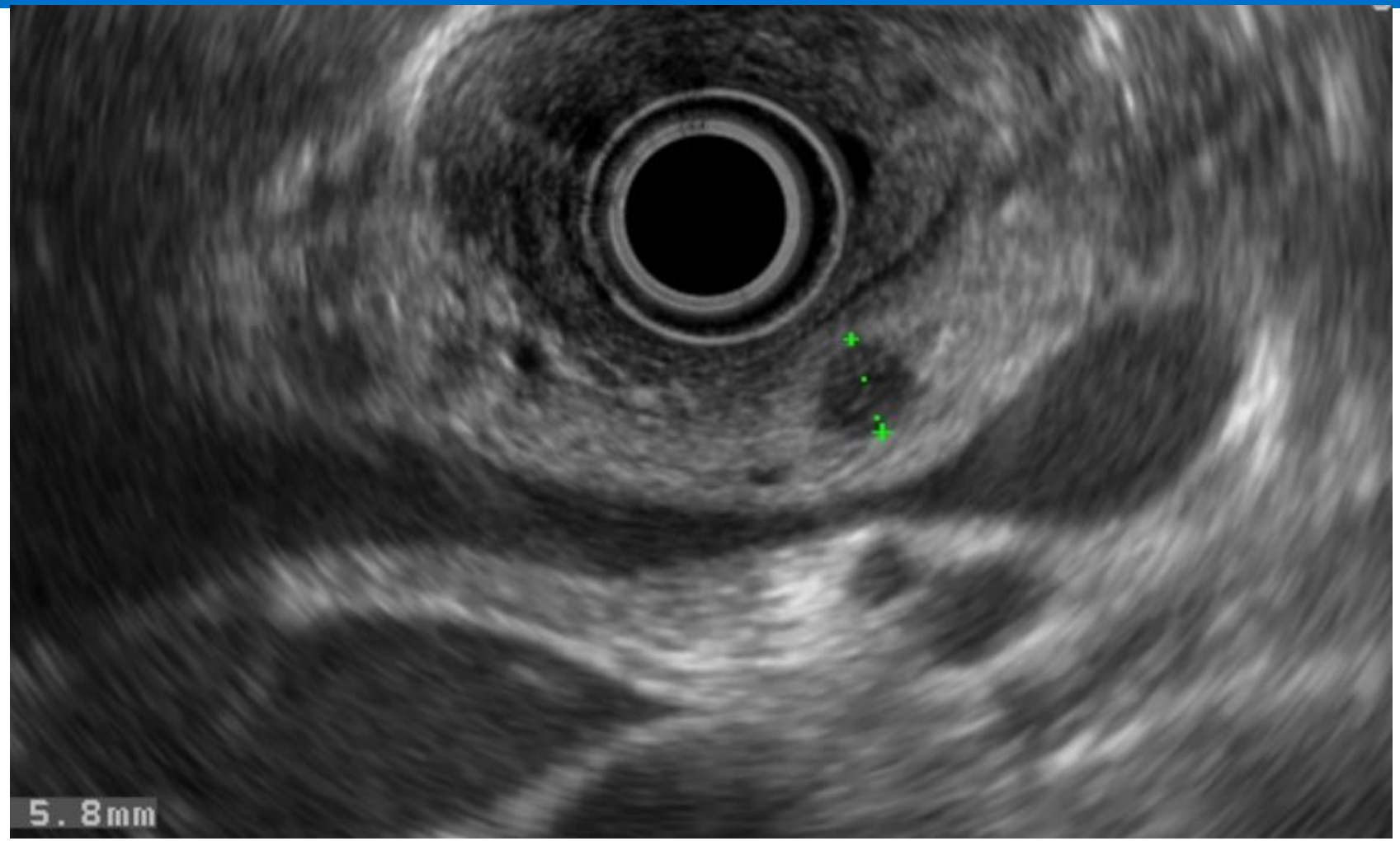
2010-2011



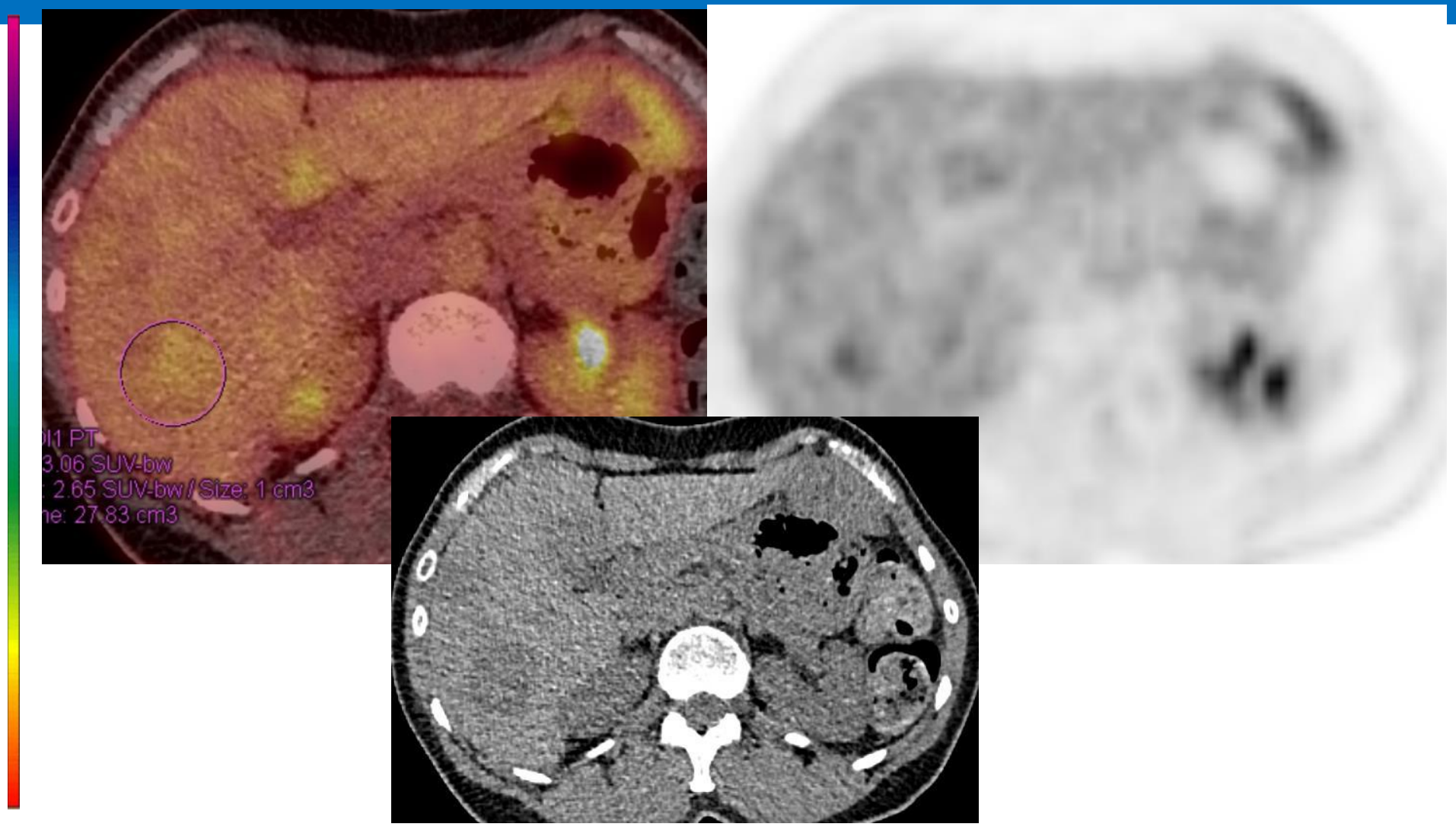
2012



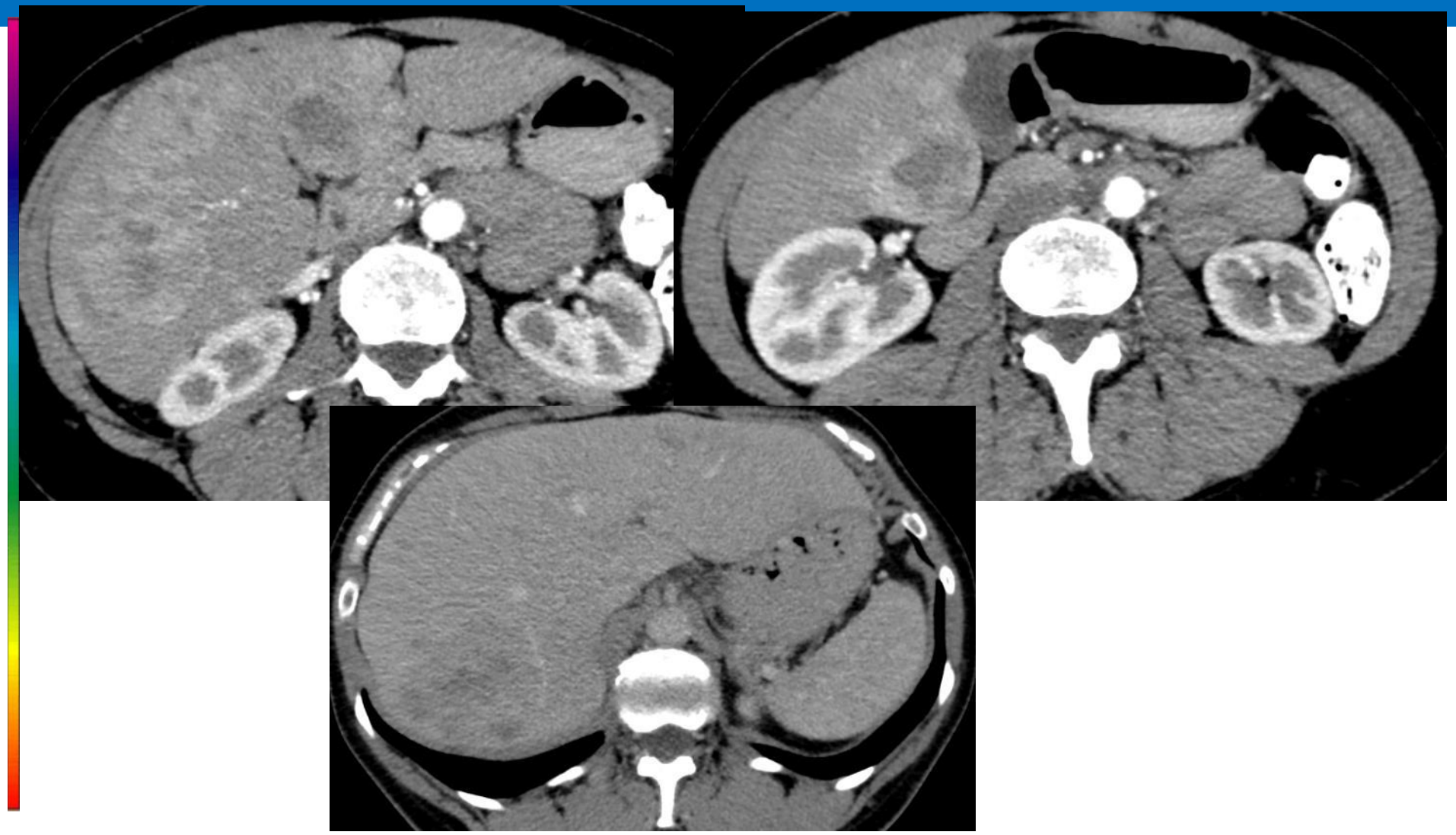
2012



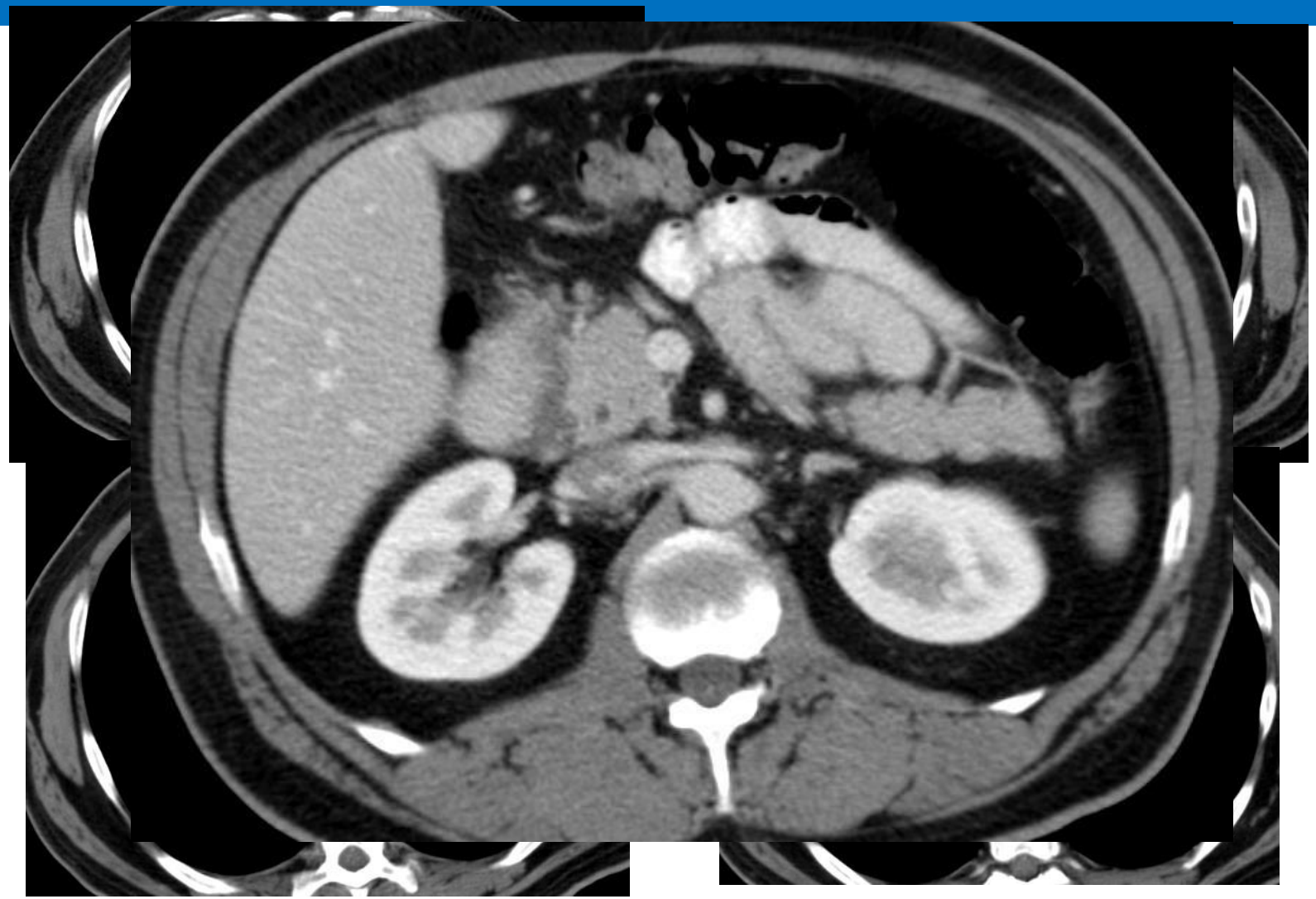
2016



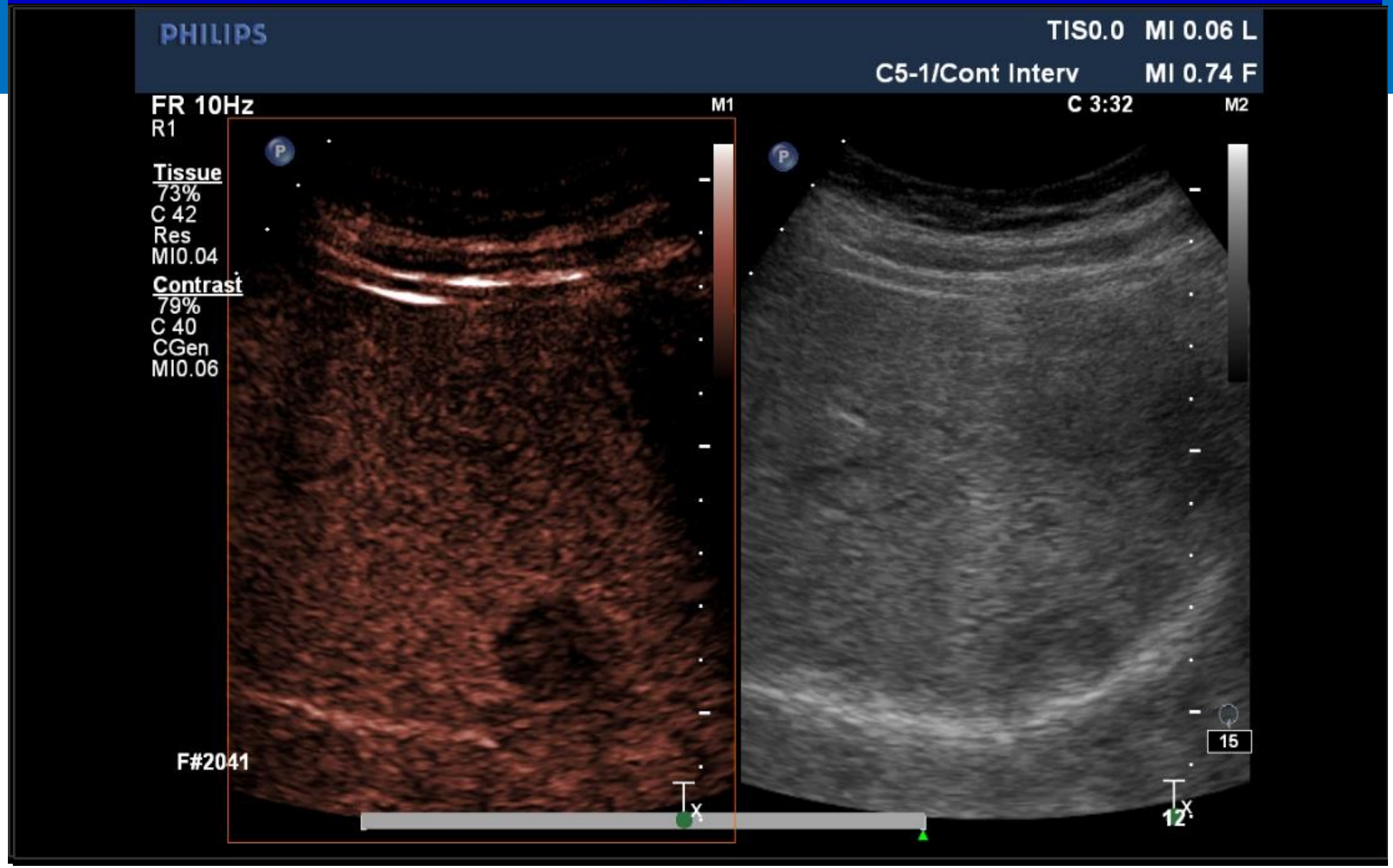
2018



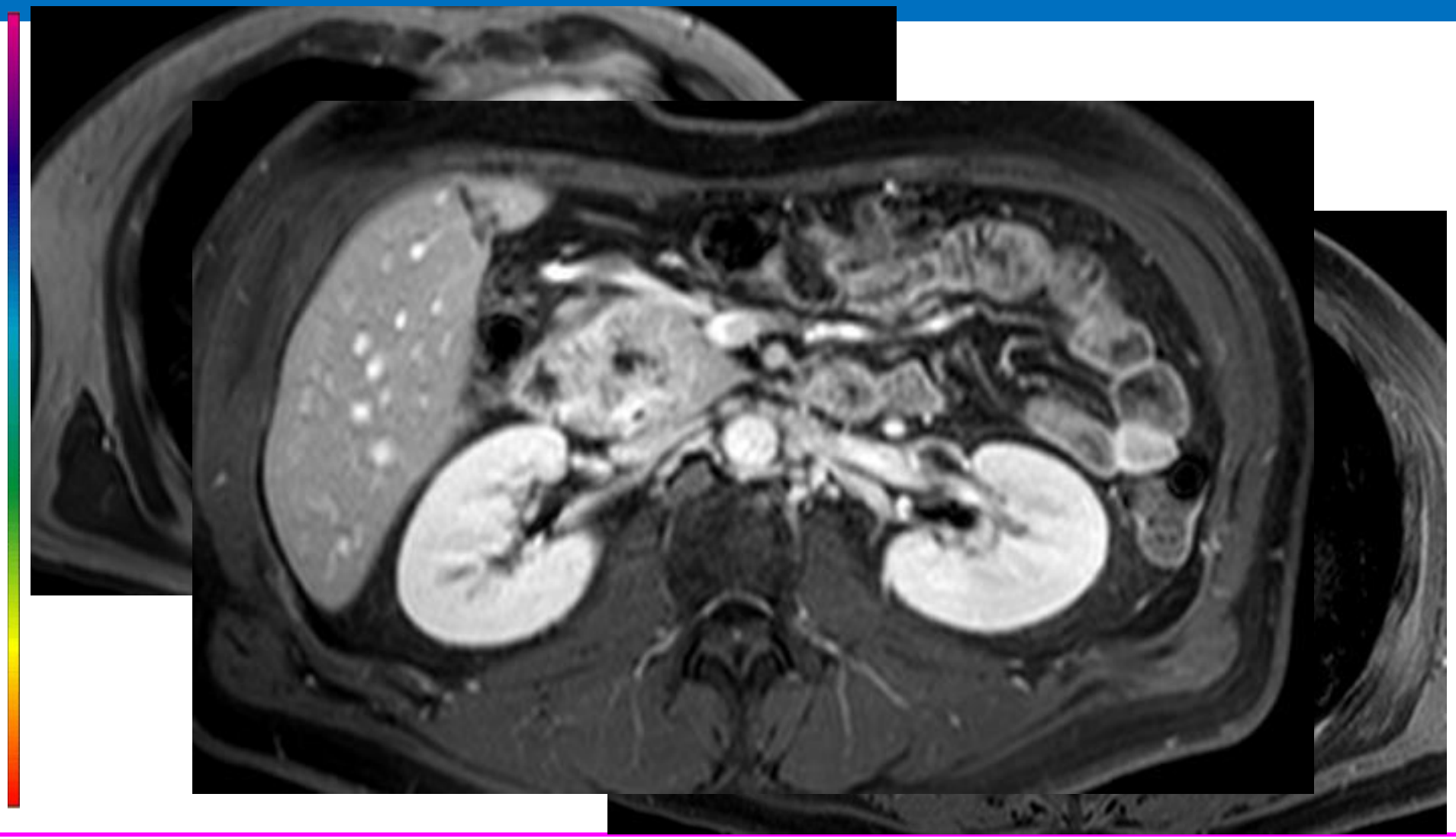
2013



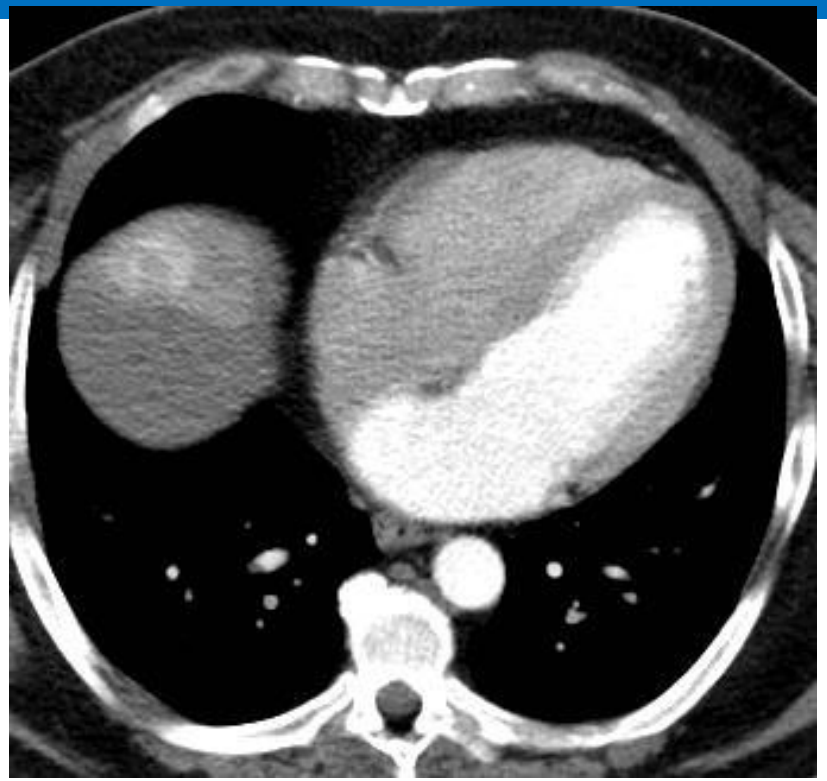
2013

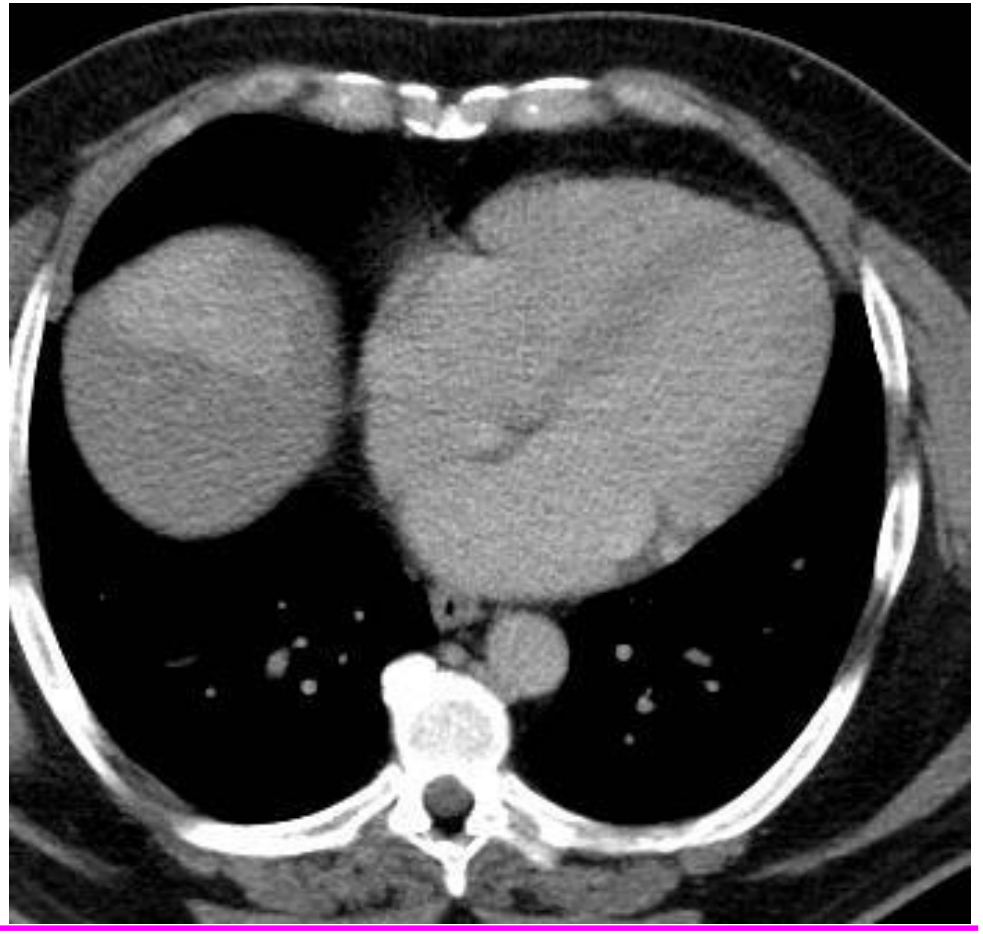

PHILIPS
TIS0.0 MI 0.06 L
C5-1/Cont Interv MI 0.74 F
FR 10Hz
R1
M1
C 3:32
M2
Tissue
73%
C 42
Res
MI0.04
Contrast
79%
C 40
CGen
MI0.06
F#2041
15
12

2013

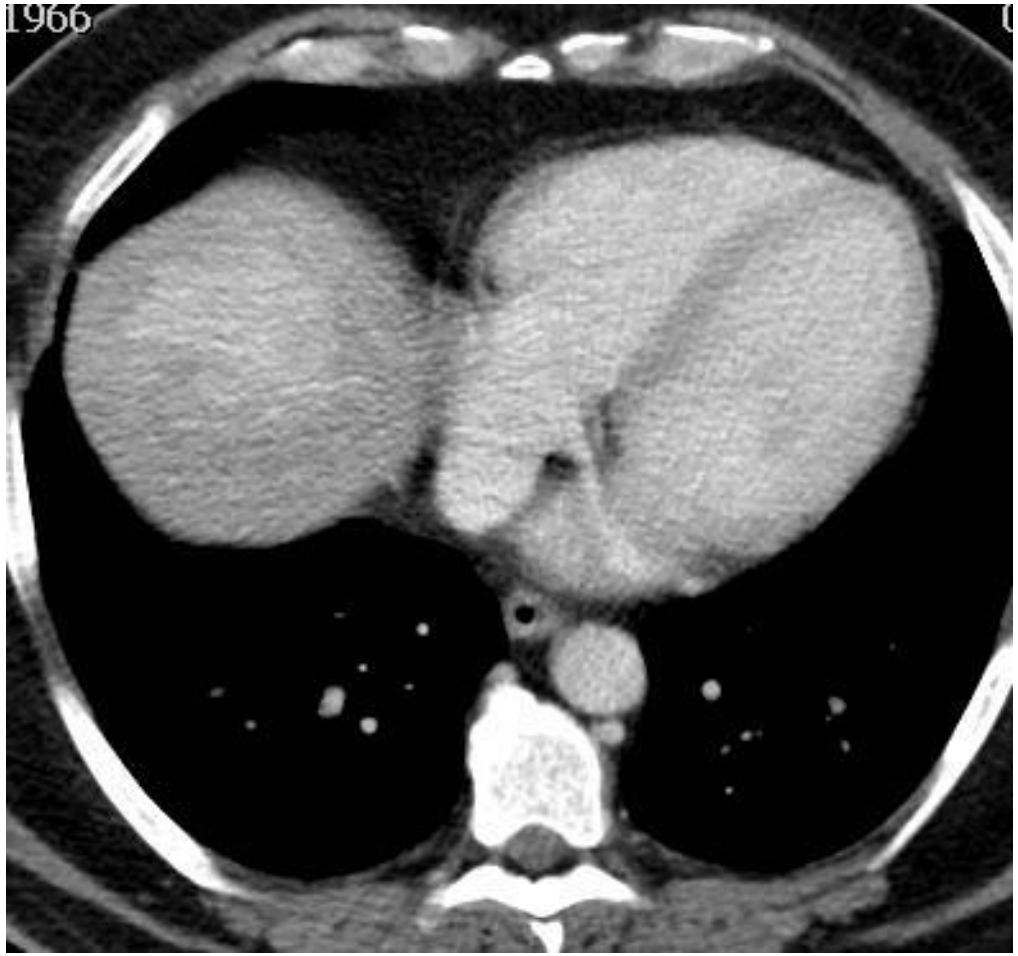


2015

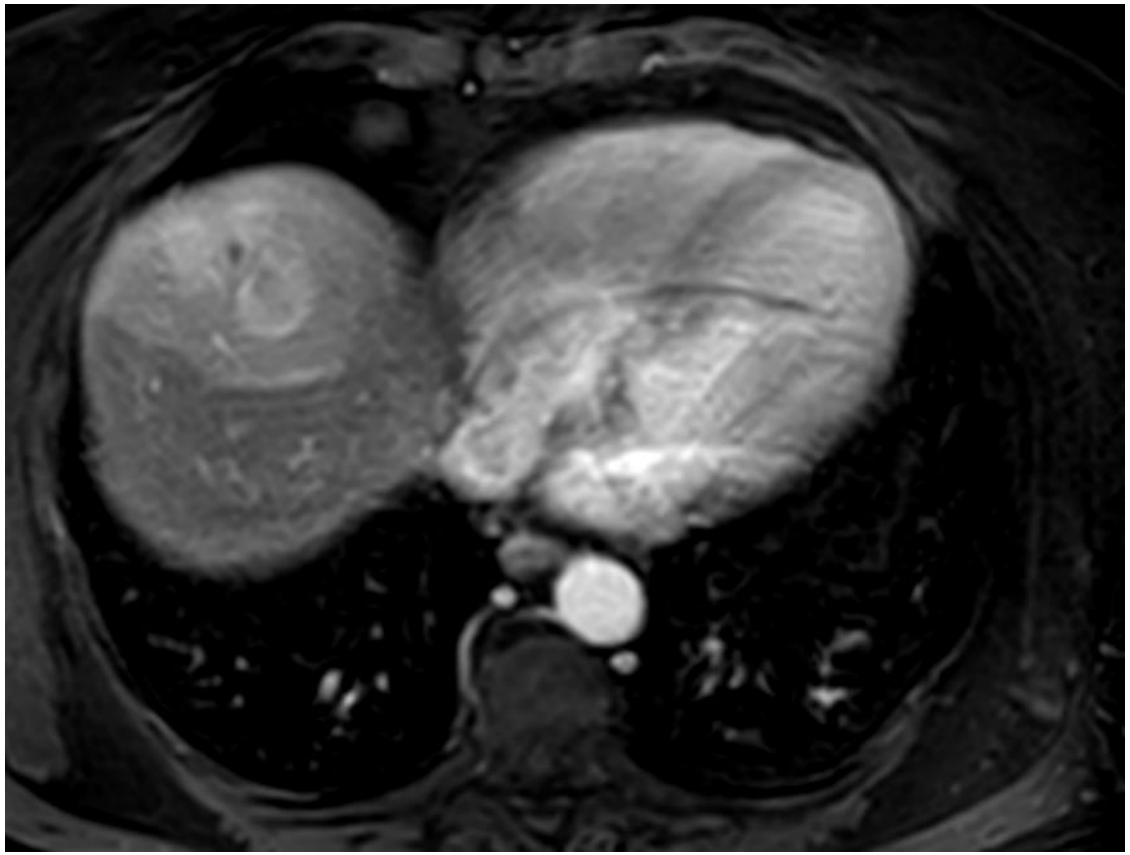




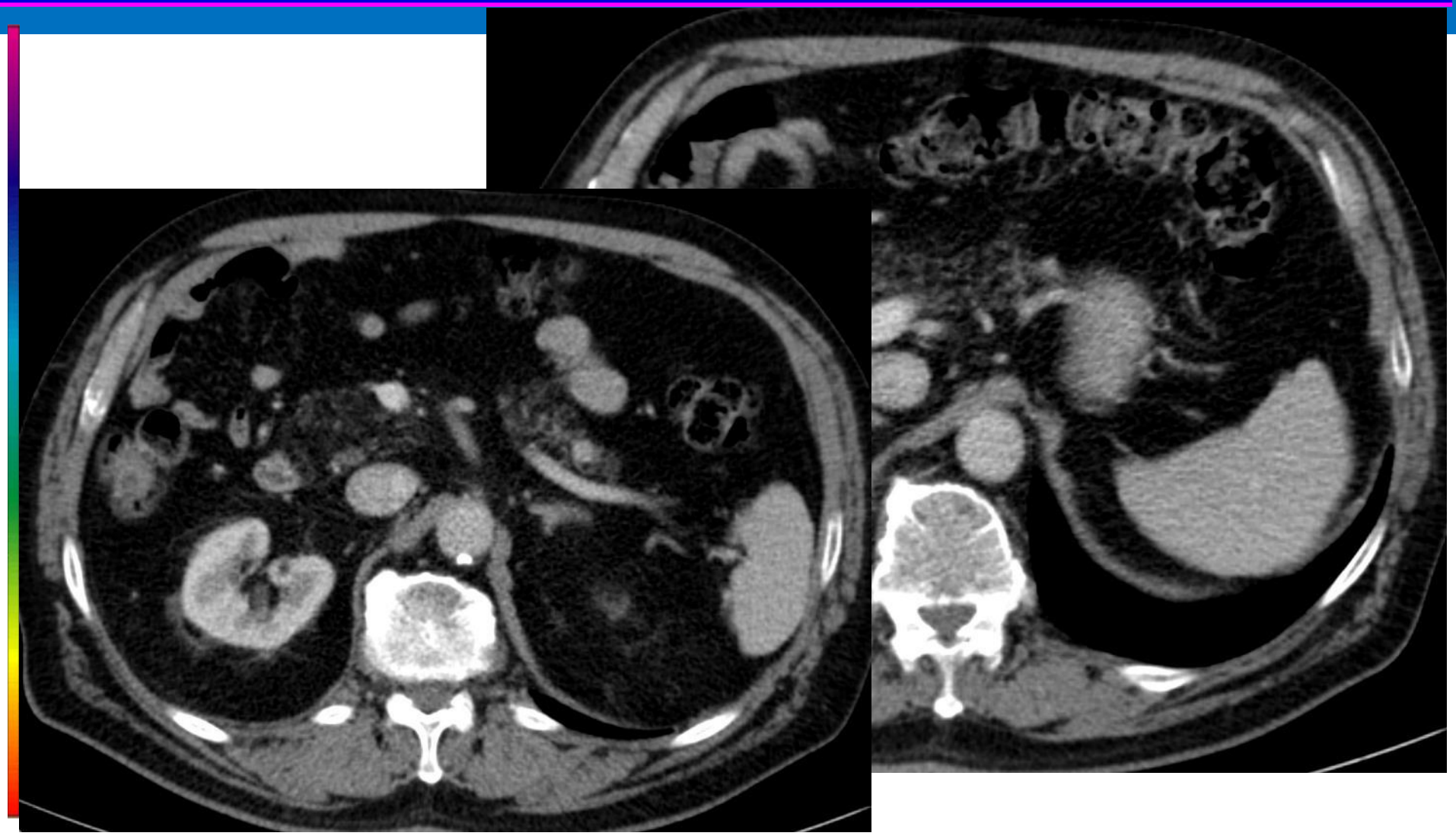
2017



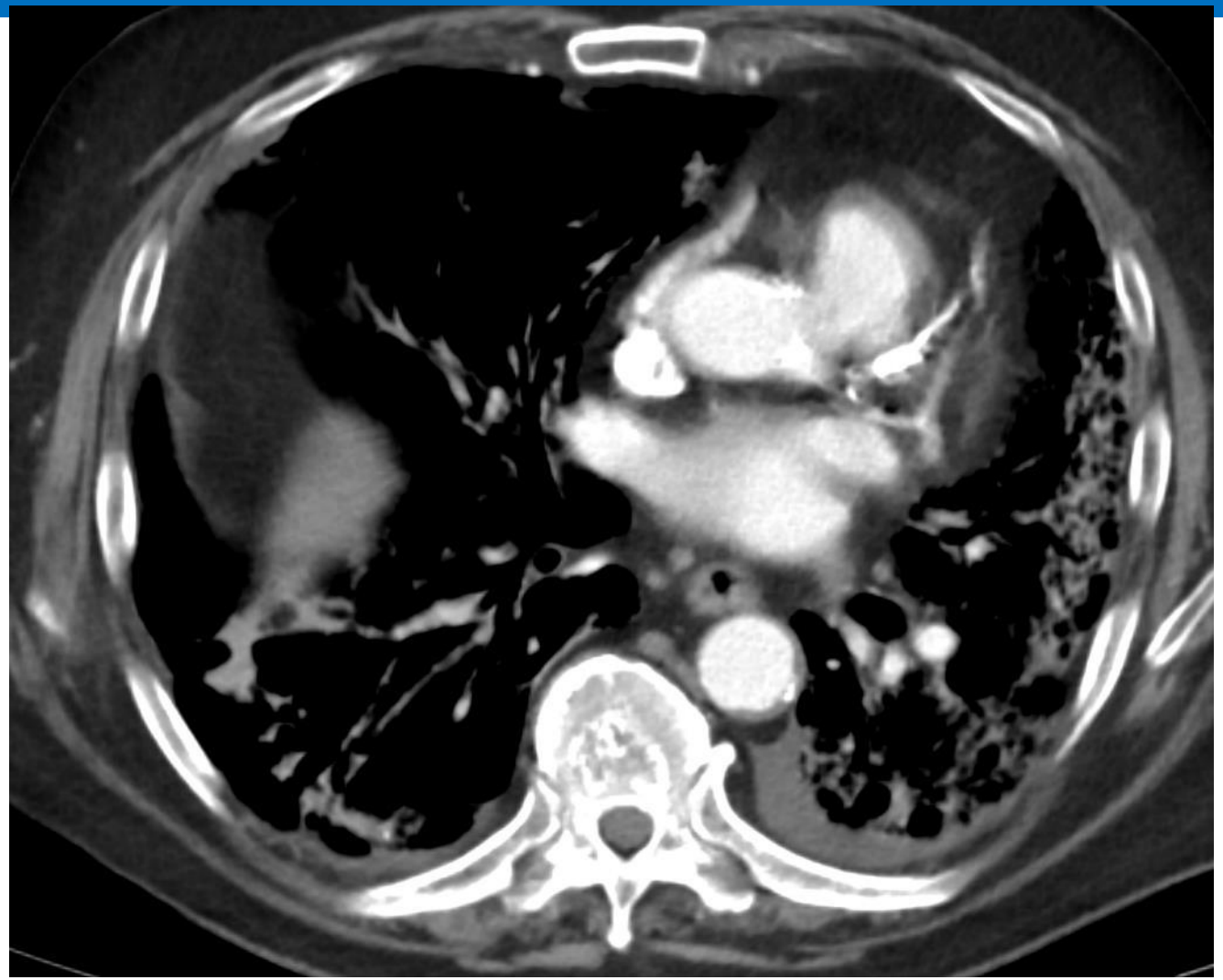
2018



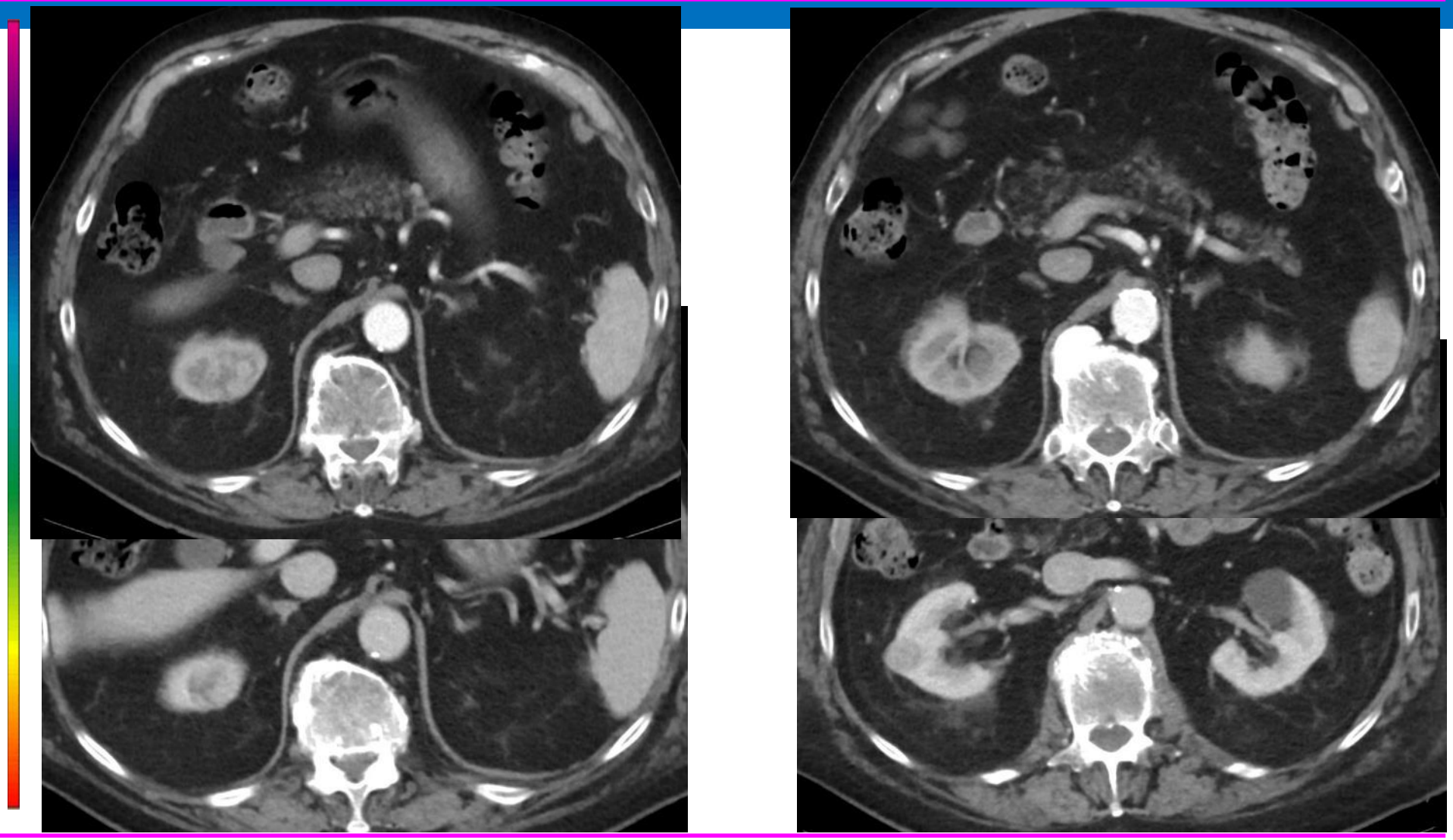
Ledvina – pankreas 2013



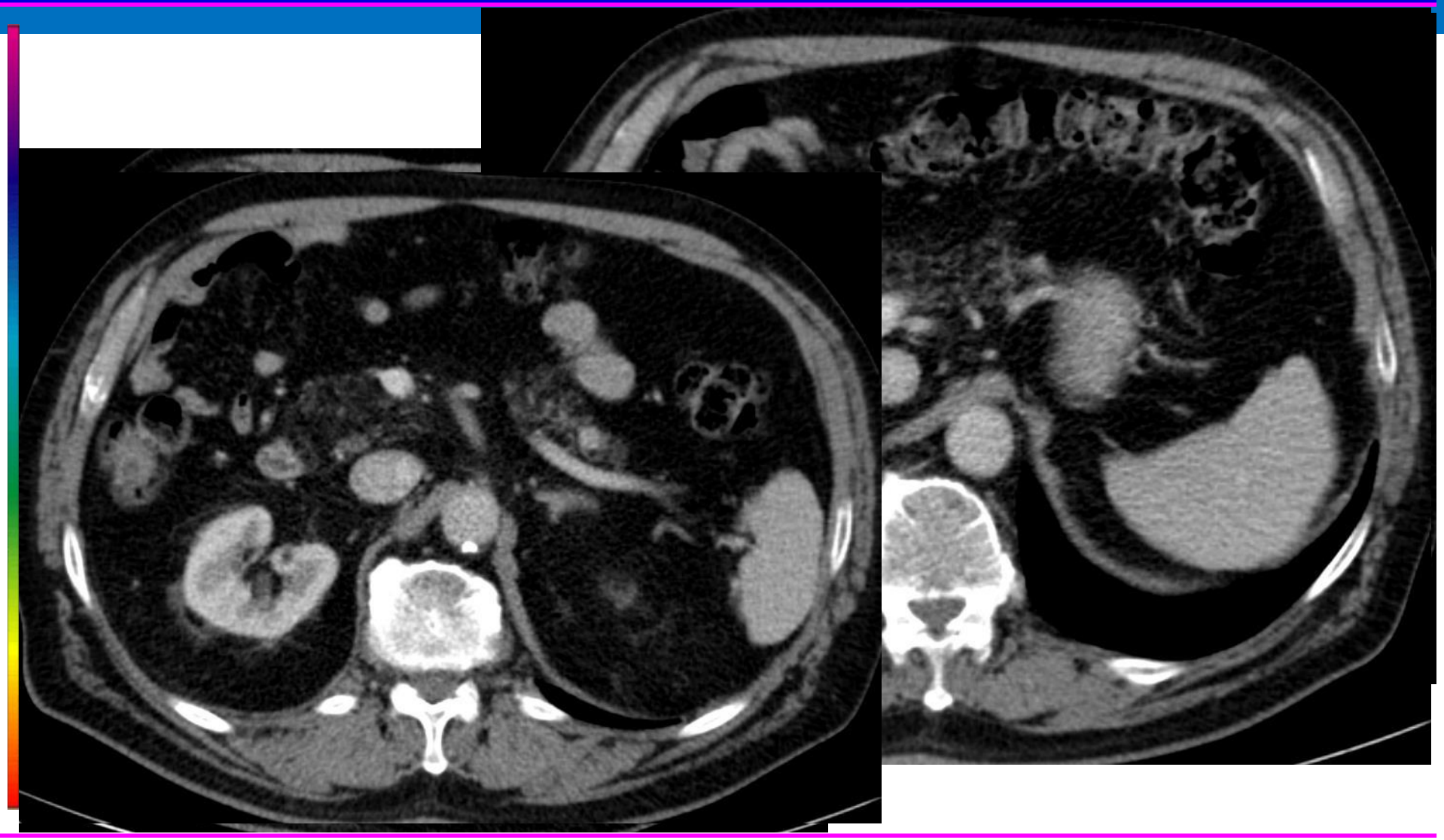
Ledvina – pankreas 2021



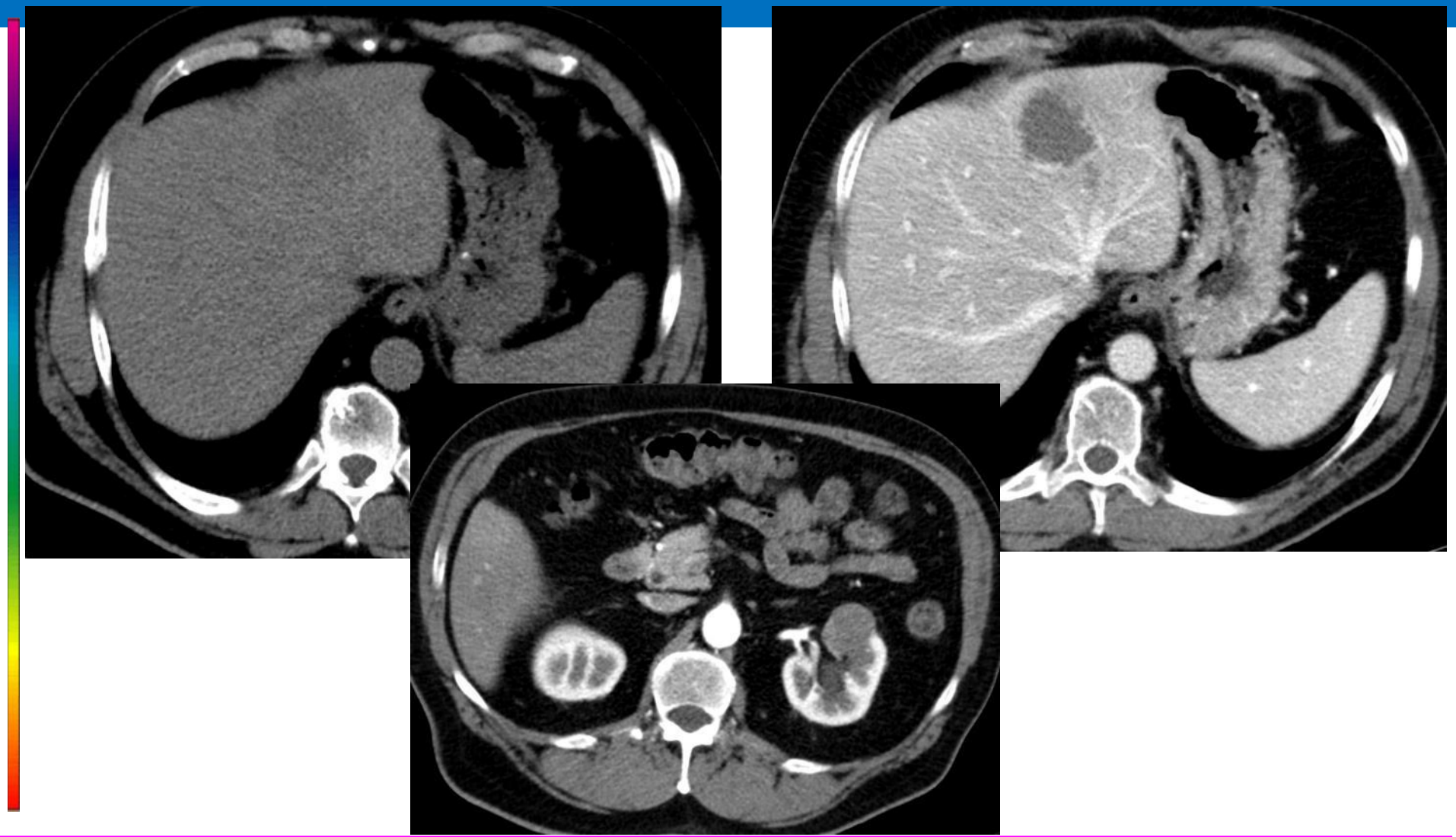
Ledvina – pankreas 2021



Ledvina – pankreas 2021



Játra - ledvin



Játra - ledvin