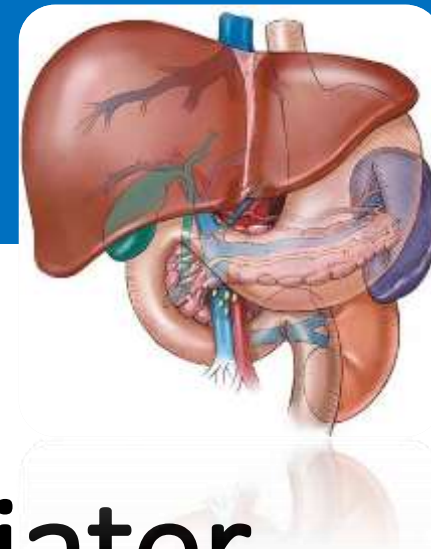




Management incidentalomů jater

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

Klinika radiologie a nukleární medicíny FN Brno a LF MU

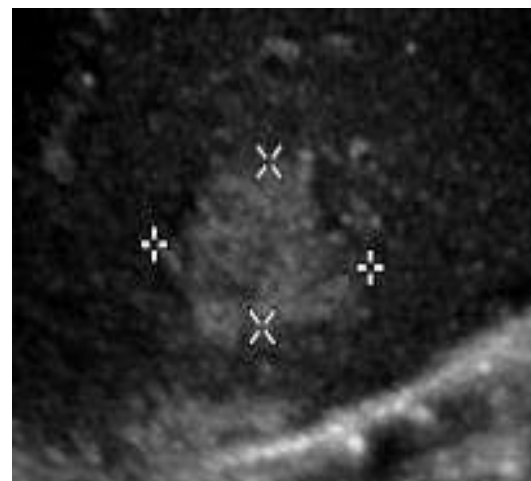
Bez konfliktu zájmu v daném tématu



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**



MANAGEMENT

Clinical Practice Guidelines



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

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^{1,2}, C. F. Dietrich^{3,4}, B. I. Choi⁵, D. O. Cosgrove⁶, M. Kudo⁷, C. P. Nolasco⁸, F. Piscaglia⁹, S. R. Wilson¹⁰, R. G. Barr¹¹, M. C. Chammas¹², N. G. Chaubal¹³, M.-H. Chen¹⁴, D. A. Clevert¹⁵, J. M. Correas¹⁶, H. Deng¹⁷, F. Forsberg¹⁸, J. B. Fowler¹⁹, R. N. Gibson²⁰, B. B. Goldberg²¹, N. Lassau²², E. L. S. Lee²³, R. F. Mattrey²⁴, F. Moriyasu²⁵, L. Solbiati²⁶, H.-P. Westkott²⁷, H.-K. Xu²⁸

Affiliations

Affiliation addresses are listed at the end of the article.

FEATURE ARTICLE

What you need to know about imaging

A practical review of current literature

Gaurav Bhattacharya (MD), Michael Kabiri (MD), Laura Callan (Meds 2014)

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



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

Lincoln L. Berland, MD¹, Stuart G. Silverman, MD², Richard M. Gore, MD³, William W. Mayo-Smith, MD⁴, Alec J. Megibow, MD, MPH⁵, Judy Yee, MD⁶, James A. Brink, MD⁷, Mark E. Baker, MD⁸, Michael P. Federle, MD⁹, W. Dennis Foley, MD¹⁰, Isaac R. Francis, MD¹¹, Brian R. Herts, MD¹², Gary M. Israel, MD¹³, Glenn Krinsky, MD¹⁴, Joel F. Platt, MD¹⁵, William P. Shuman, MD¹⁶, Andrew J. Taylor, MD¹⁷

Hepatic Incidentalomas

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

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

Jorge A. Marrero, MD¹, Joseph Ahn, MD, FACP² and K. Rajender Reddy, MD, FACP³ 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

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)*

KLINICKÁ ANAMNÉZA

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

INCIDENTALOM

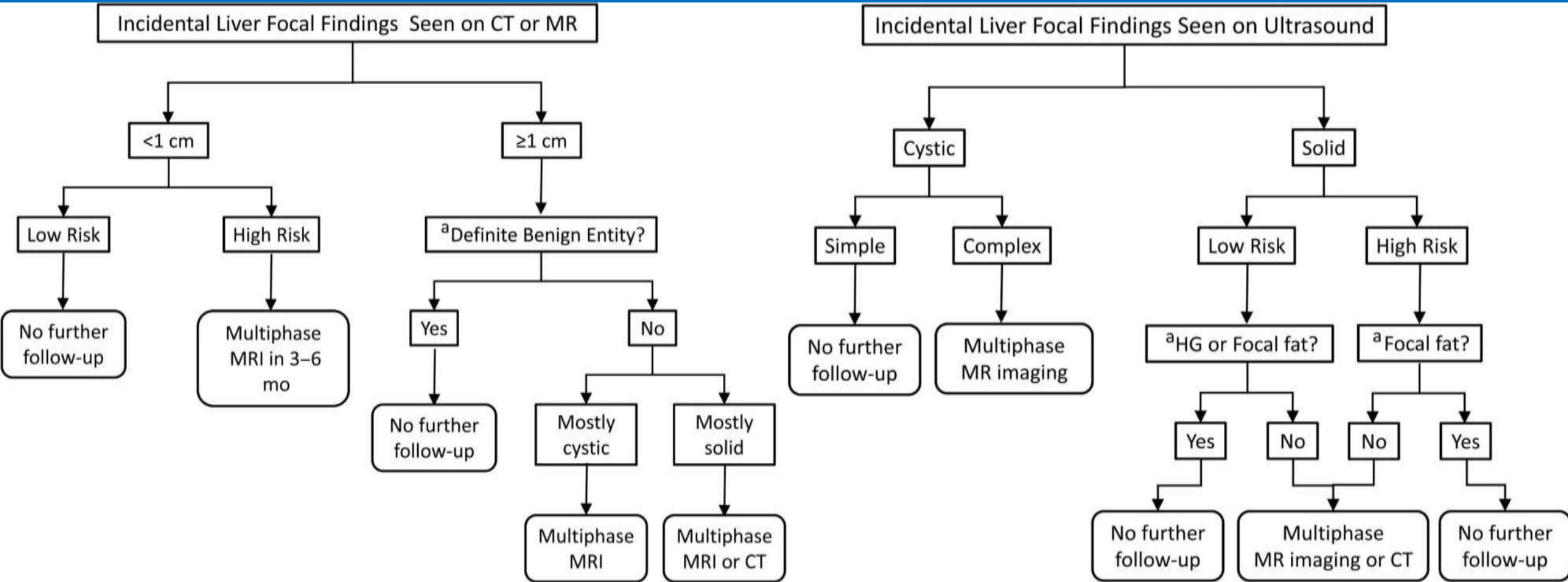
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graph TD; A[INCIDENTALOM] --> B[CIRHÓZA]; A --> C[ONKOLOGICKÝ PACIENT]; A --> D[PACIENT BEZ ONKOLOGICKÉ ANAMNÉZY]
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CIRHÓZA

**ONKOLOGICKÝ
PACIENT**

**PACIENT BEZ
ONKOLOGICKÉ
ANAMNÉZY**

Radiology Clinics of North America



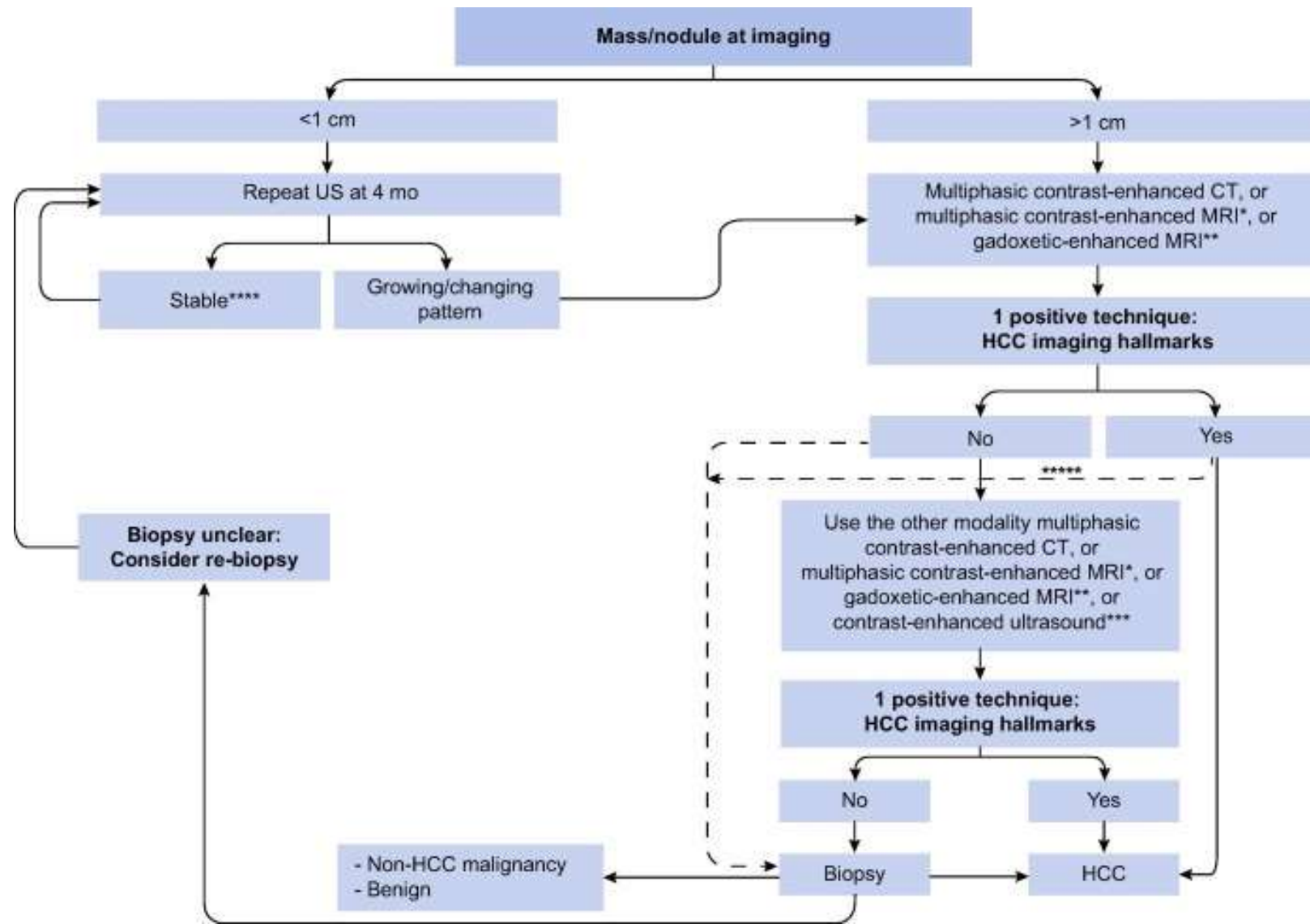
Searleman A.C., Aganovic L., Santillan C.S. Incidental Liver Findings on Cross-sectional Imaging. *Radiol Clin N Am.* 2021;59(4):569-590.

doi:[10.1016/j.rcl.2021.03.007](https://doi.org/10.1016/j.rcl.2021.03.007)

Ložisko v cirhotických játrech

EASL-EORTC Clinical Practice Guidelines: Management of hepatocellular carcinoma

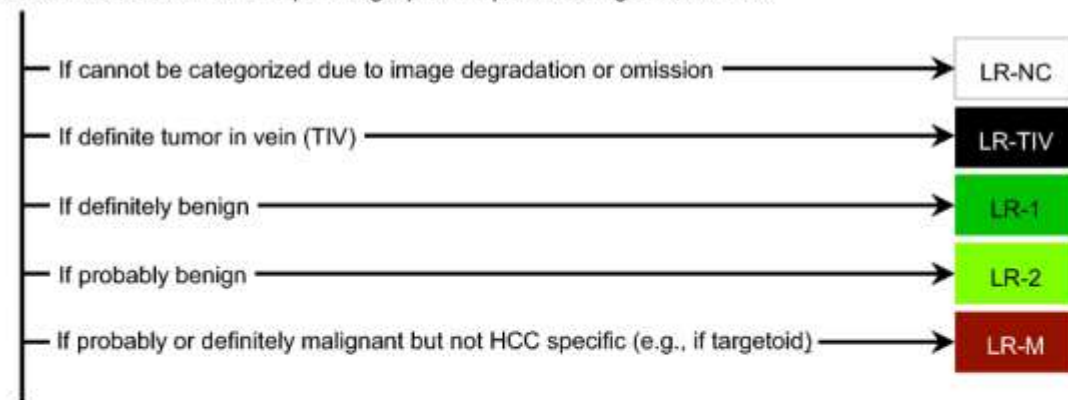
European Association for the Study of the Liver*,
European Organisation for Research and Treatment of Cancer



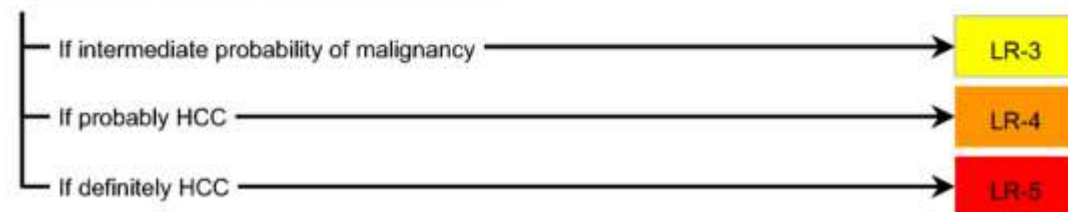
LI-RADS

- pravděpodobnost HCC podle CT/MRI
- u pacientů s cirhózou/chronickou hepatitidou B

Untreated observation without pathologic proof in patient at high risk for HCC



Otherwise, use CT/MRI diagnostic table below



CT/MRI Diagnostic Table

Arterial phase hyperenhancement (APHE)		No APHE		APHE (not rim)		
Observation size (mm)		< 20	≥20	< 10	10-19	≥20
Count major features: • "Washout" (not peripheral) • Enhancing "capsule" • Threshold growth	None	LR-3	LR-3	LR-3	LR-3	LR-4
	One	LR-3	LR-4	LR-4		LR-5
	≥Two	LR-4	LR-4	LR-4	LR-5	LR-5

Observations in this cell are categorized LR-4, except:

- LR-5g, if ≥50% diameter increase in < 6 months (equivalent to OPTN 5A-g)
- LR-5us, if "washout" and visibility at screening ultrasound (per AASLD HCC criteria)

ZDRAVÝ vs ONKOLOGICKÝ

- **Léze do 15mm** – obvyčně 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

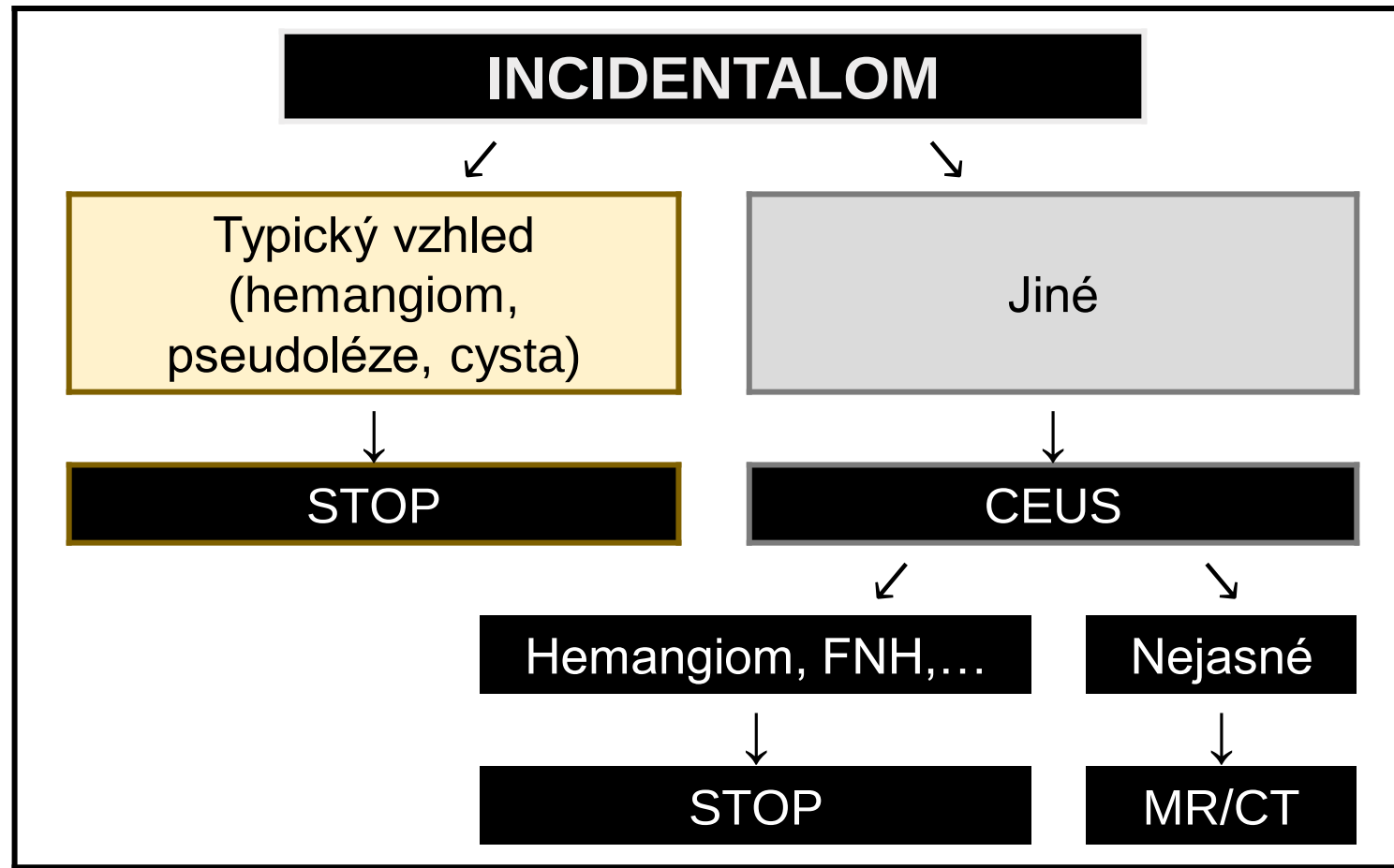
- Ca prsu – vícečetné malé léze
- CRC – solitární nebo nečetné větší ložiska

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.

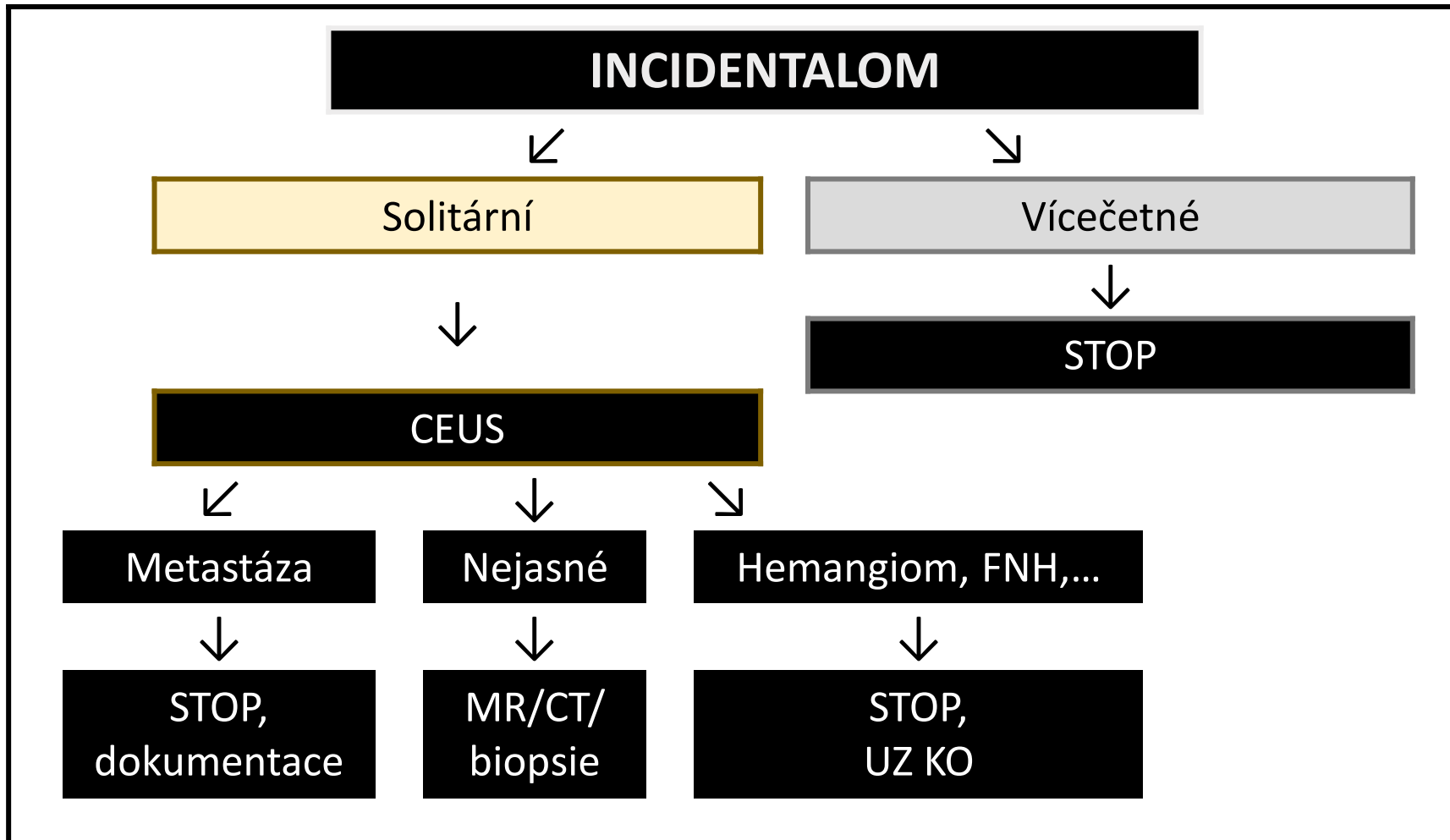
2 Schwarz LH et al: Prevalence and Importance of Small Hepatic Lesions Found at CT in Patients with Cancer. Radiology 1999;210:71-74.

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.

WJG World Journal of Gastroenterology

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ORIGINAL ARTICLE

Prospective Study

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

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

Miriana Smajerova, Hana Petrasova, Jirina Little, Tomas Andrasina, Vlastimil Valek, Eva Nemcova, Barbora Miklosova, Department of Radiology, University Hospital Brno, 60200 Brno, Czech Republic

Petra Ovesna, Institute of Biostatistics and Analytics, Masaryk University, 60200 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 analyzed 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. MUNA/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.

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Manuscript source: Invited manuscript

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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

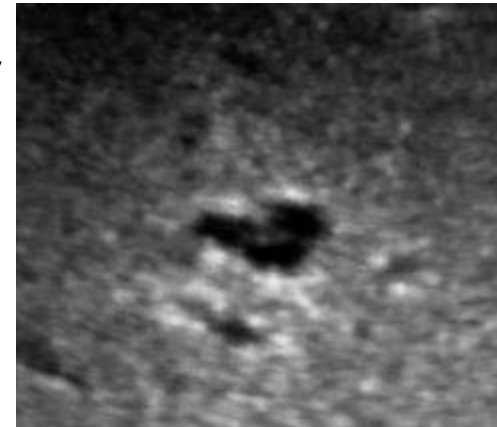
Abstract

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).

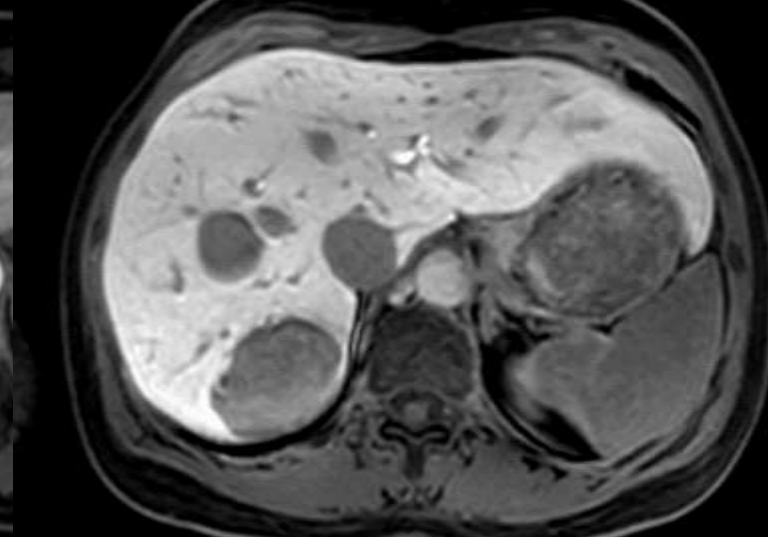
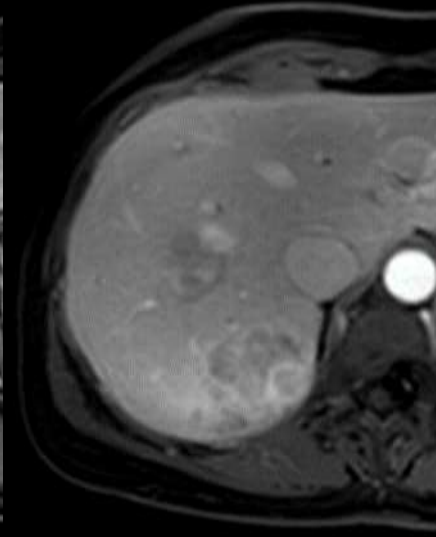
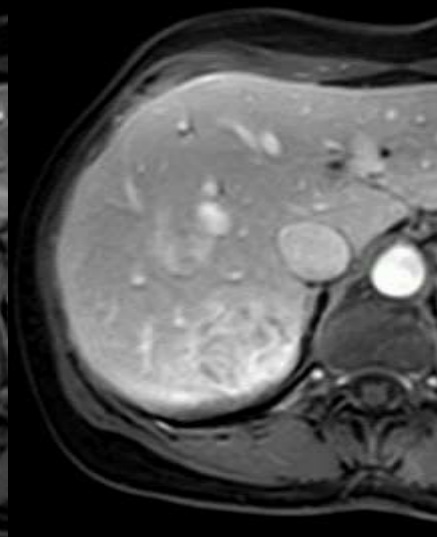
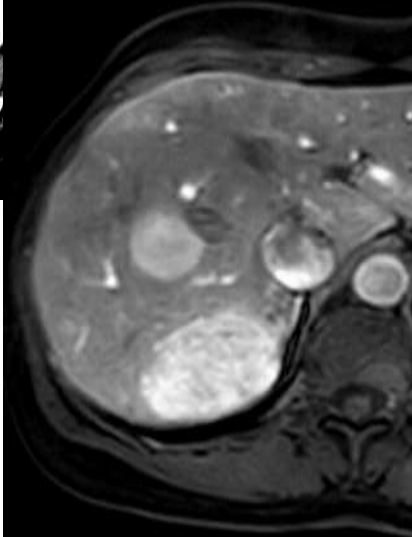
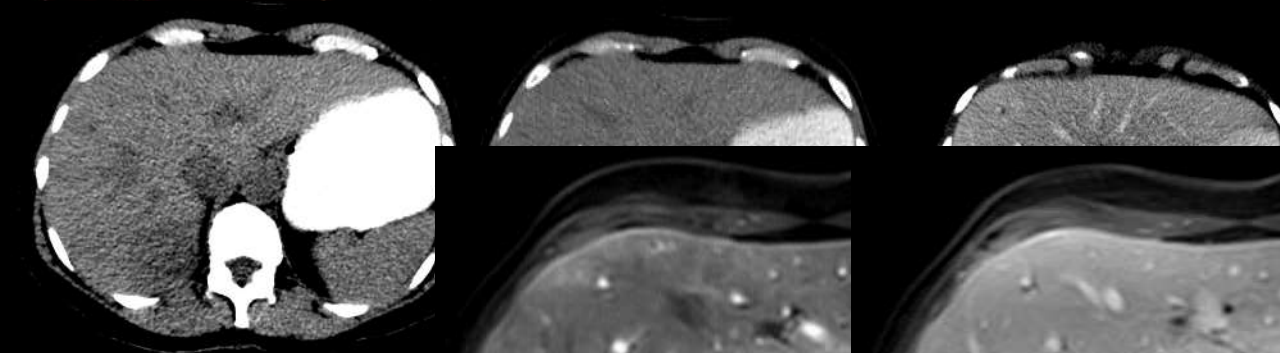
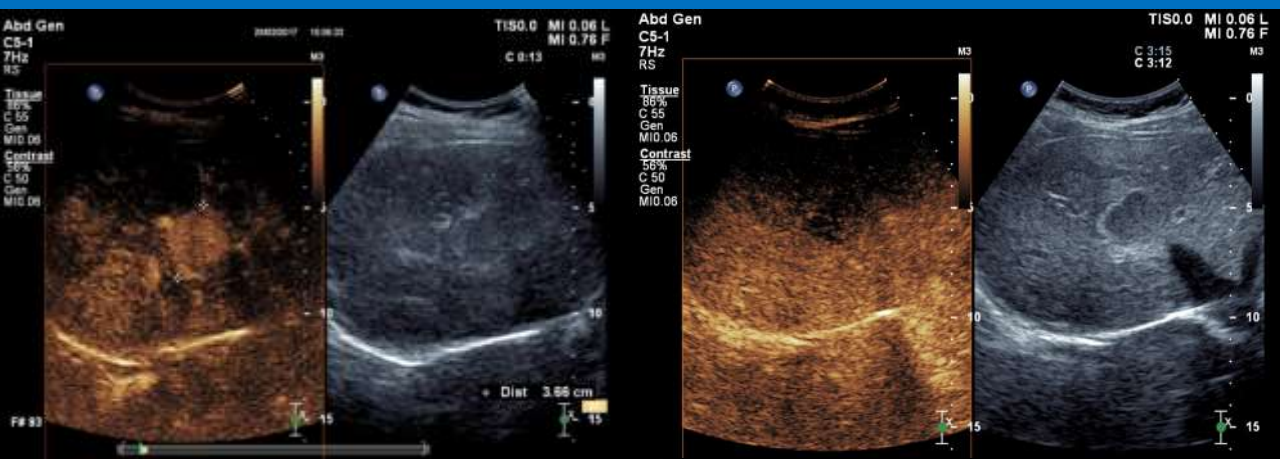
METHODS
Between 2010 and 2015, our prospective study enrolled 459 patients with incidentally found FLLs. The biological nature of FLLs was assessed by CEUS in all patients. CT or MRI examinations were added in unclear cases. The sensitivity and specificity of CEUS were calculated. The total costs of 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

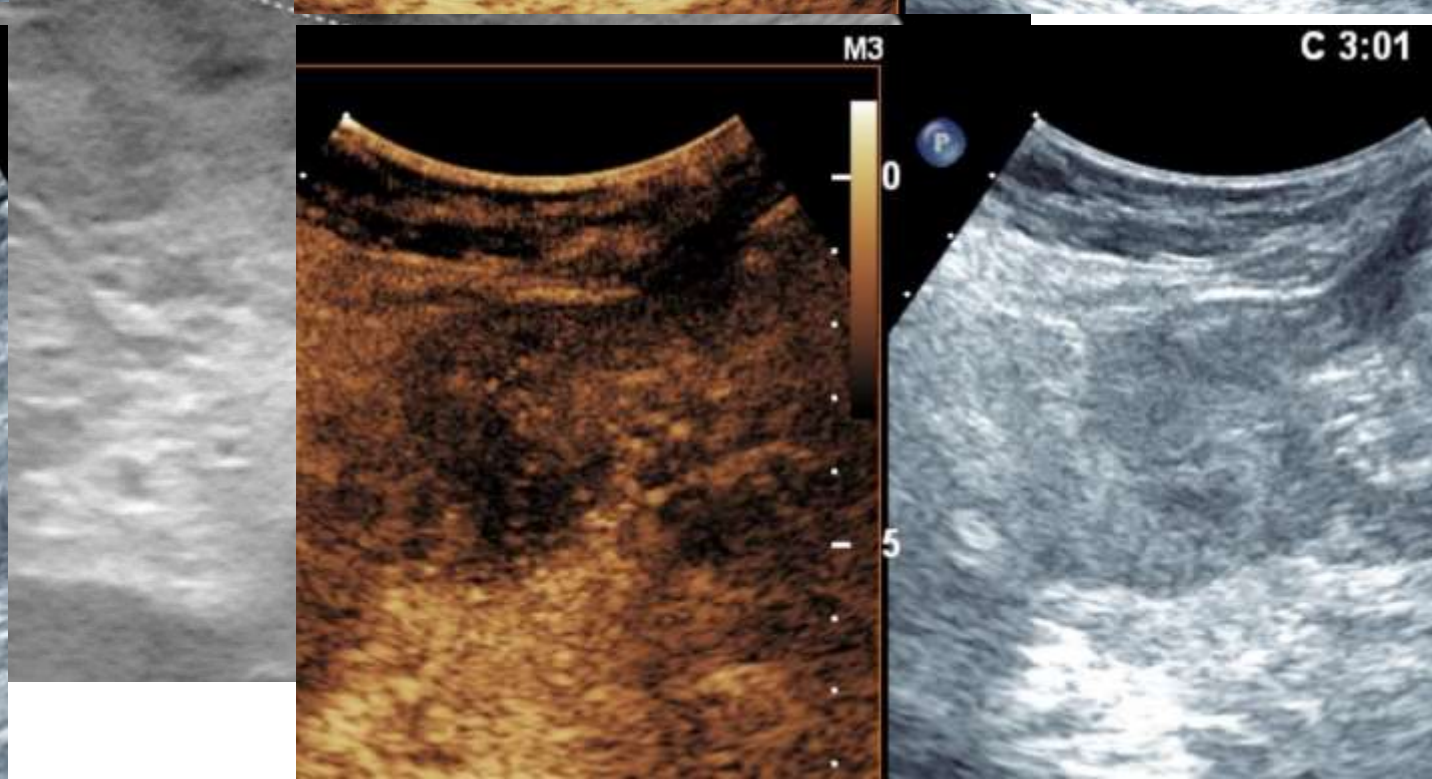
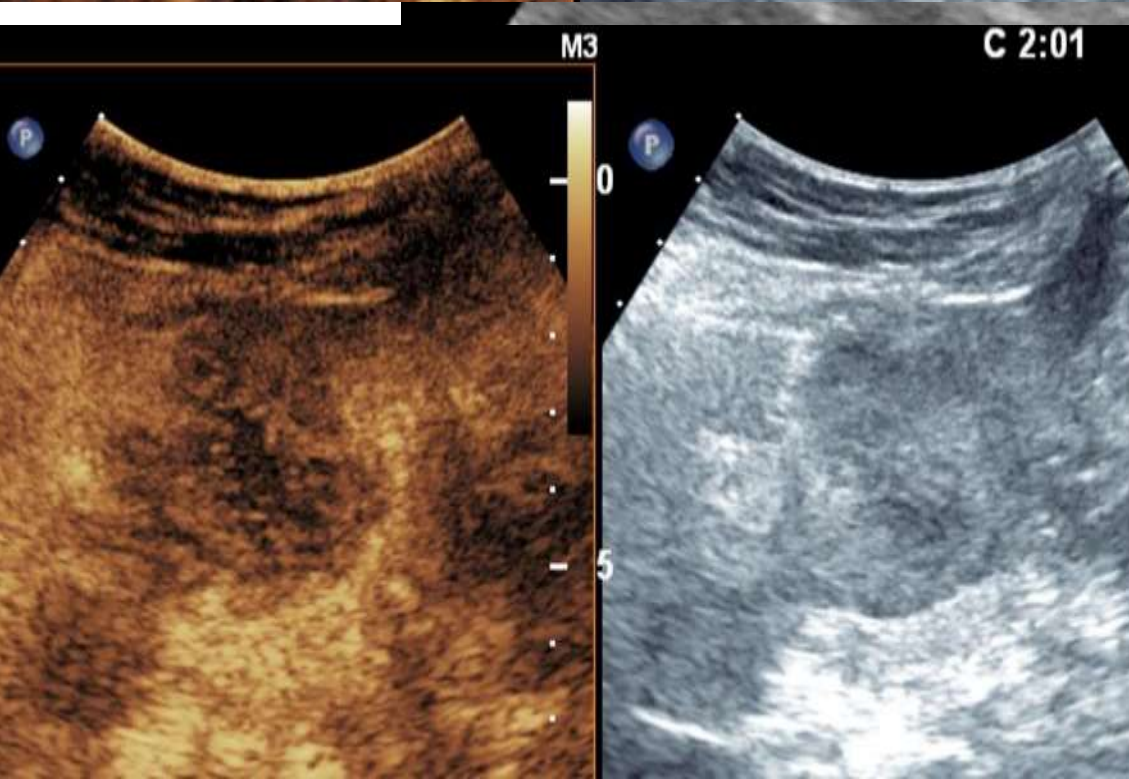
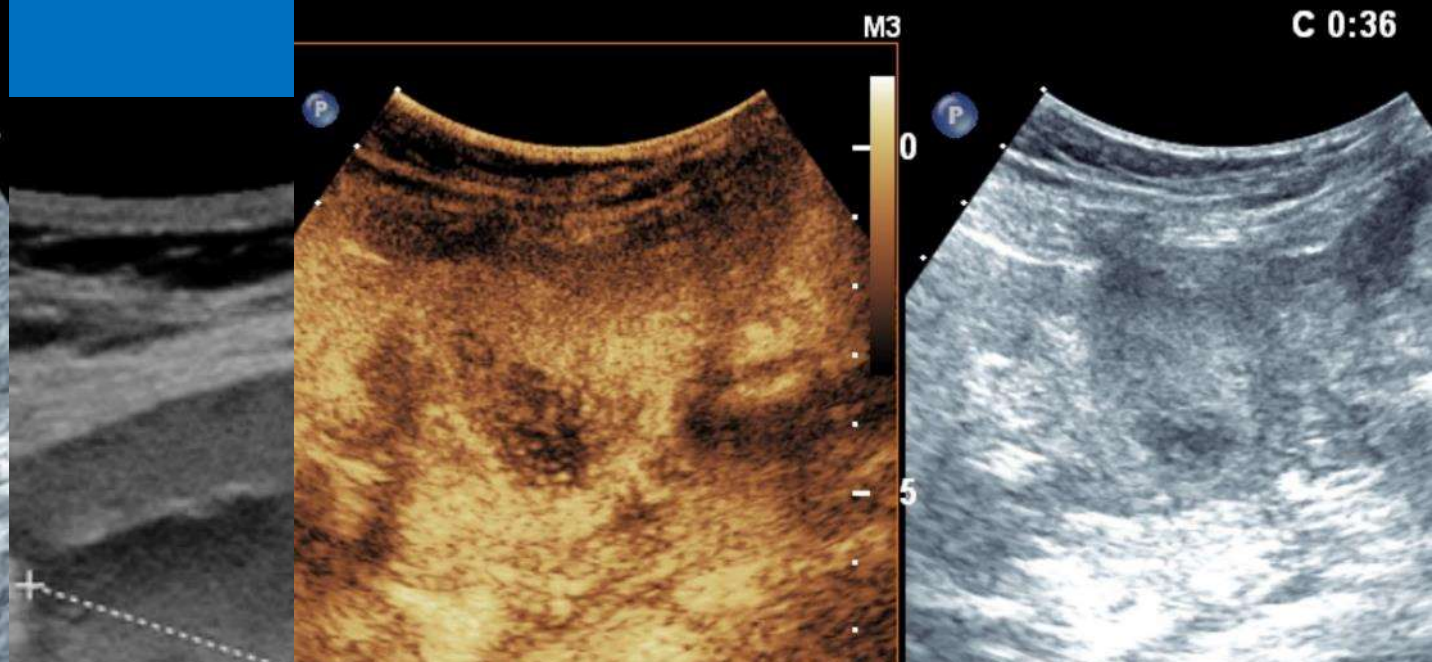
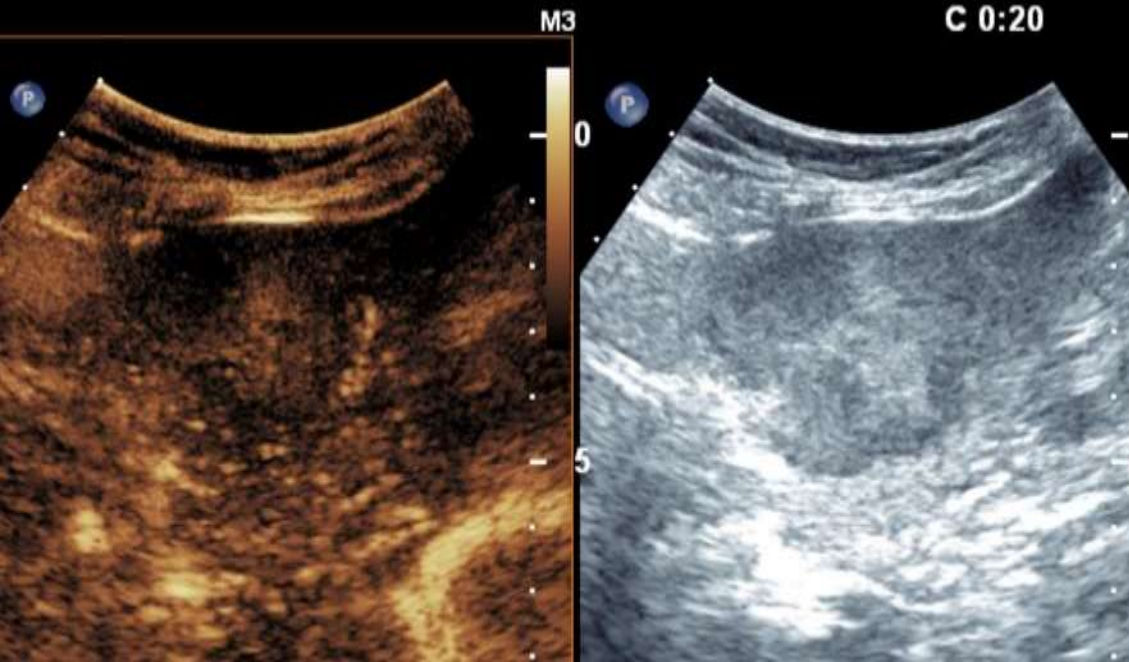
TAKE HOME MESSAGE

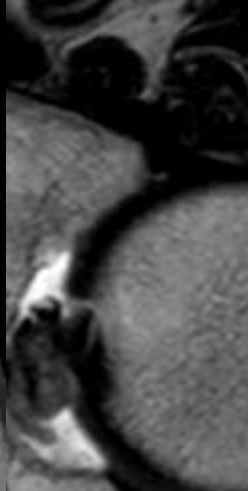
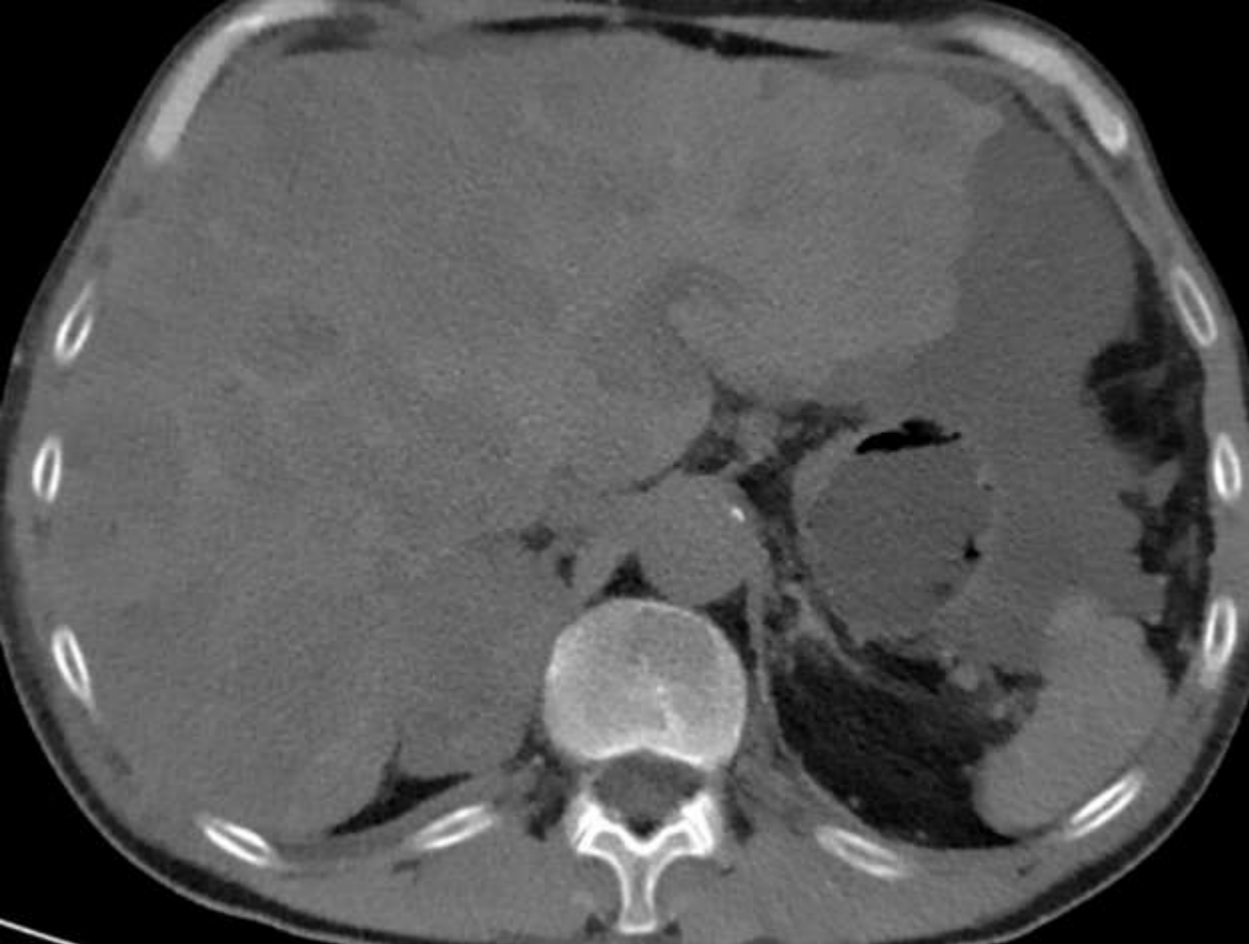
- Strategie došetřování dle typů pacienta:
 - Cirhóza
 - Onkologická anamnéze
 - Bez onkologické anamnézy



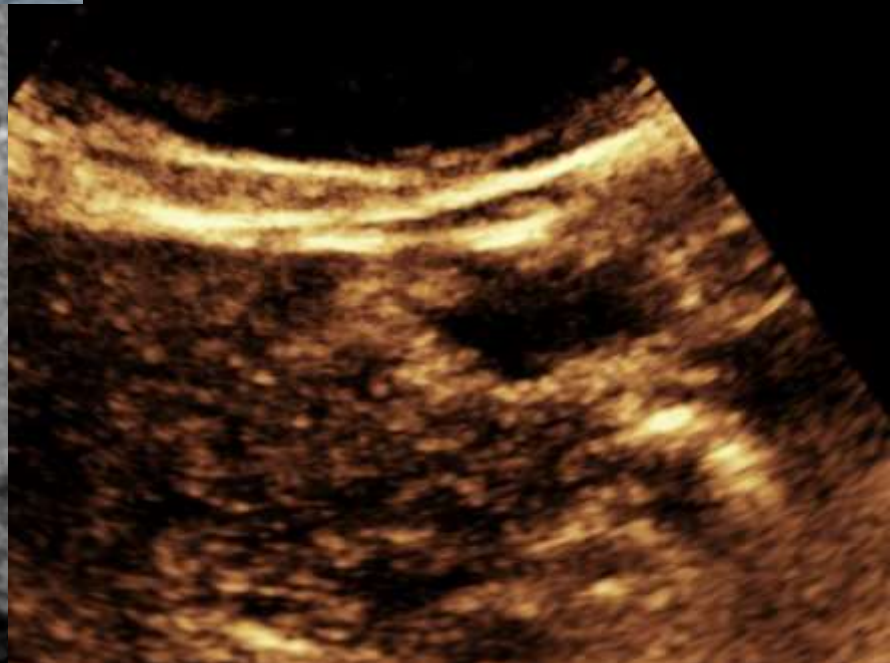
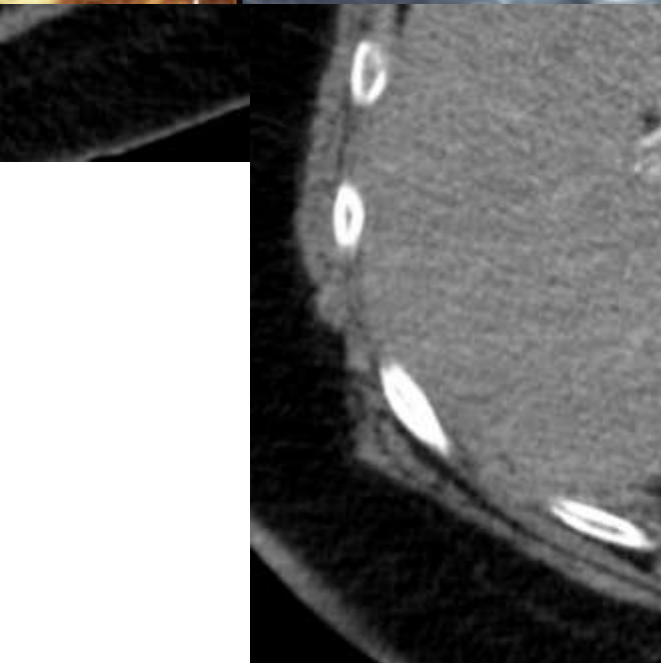
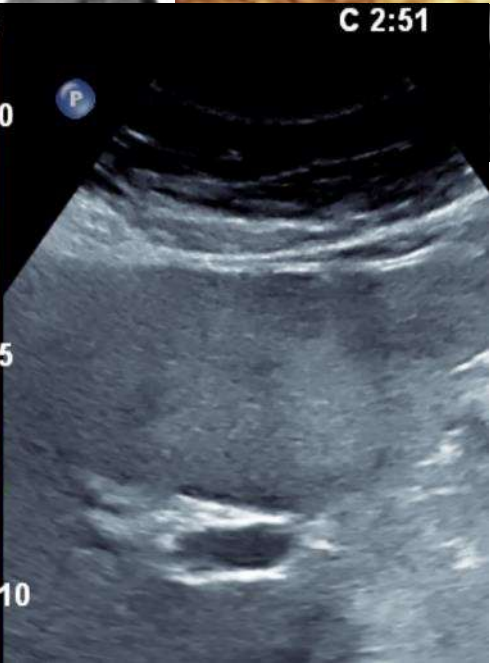
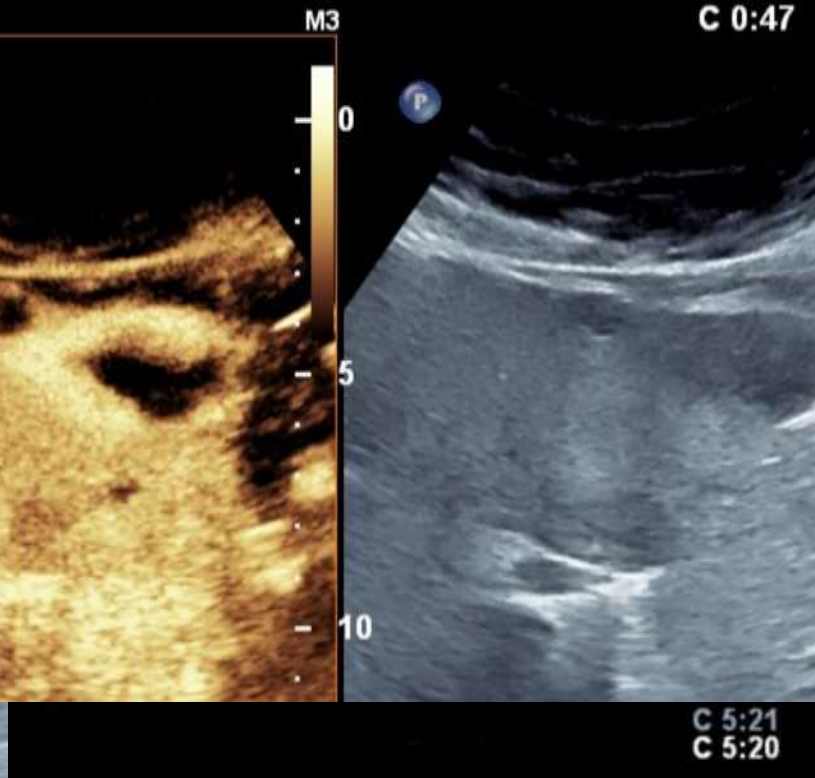
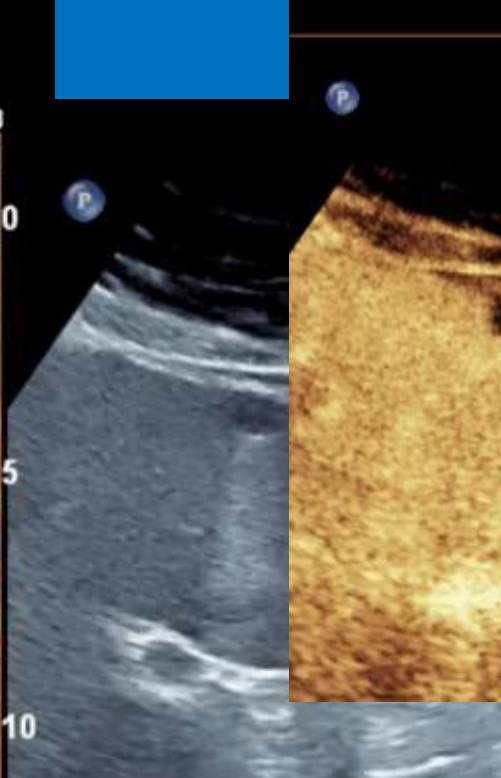
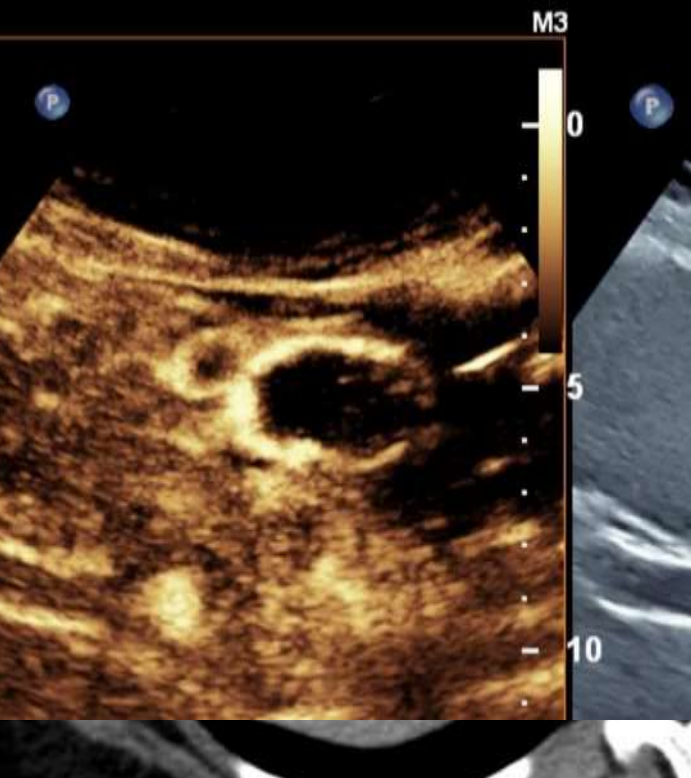
Angiomyolipom







Děkuji
za pozornost

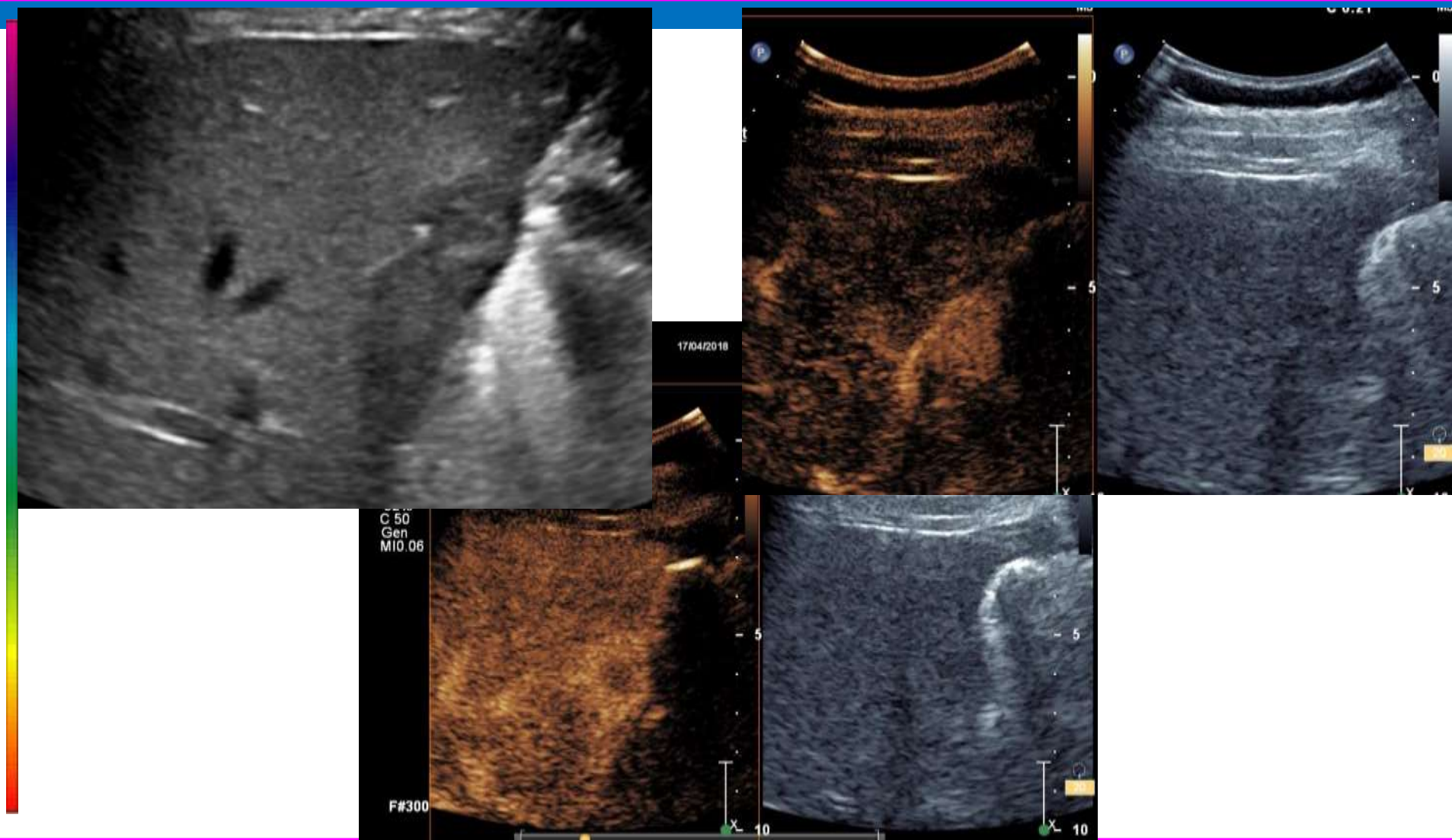


Zdroje

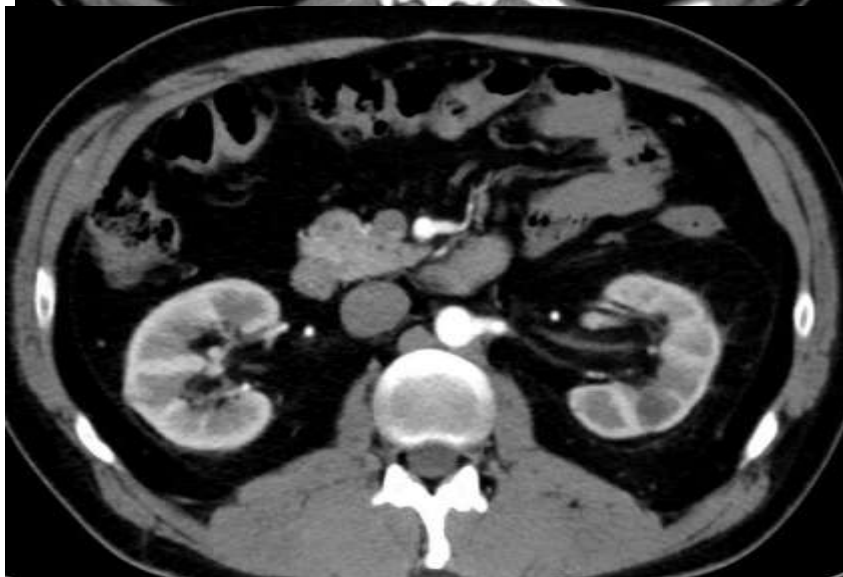
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- <https://link.springer.com/article/10.1007/s00261-018-1730-x>
- [https://www.journal-of-hepatology.eu/article/S0168-8278\(16\)30101-5/pdf](https://www.journal-of-hepatology.eu/article/S0168-8278(16)30101-5/pdf)
- <https://pubs.rsna.org/doi/full/10.1148/rg.2017170034>
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kazuistiky

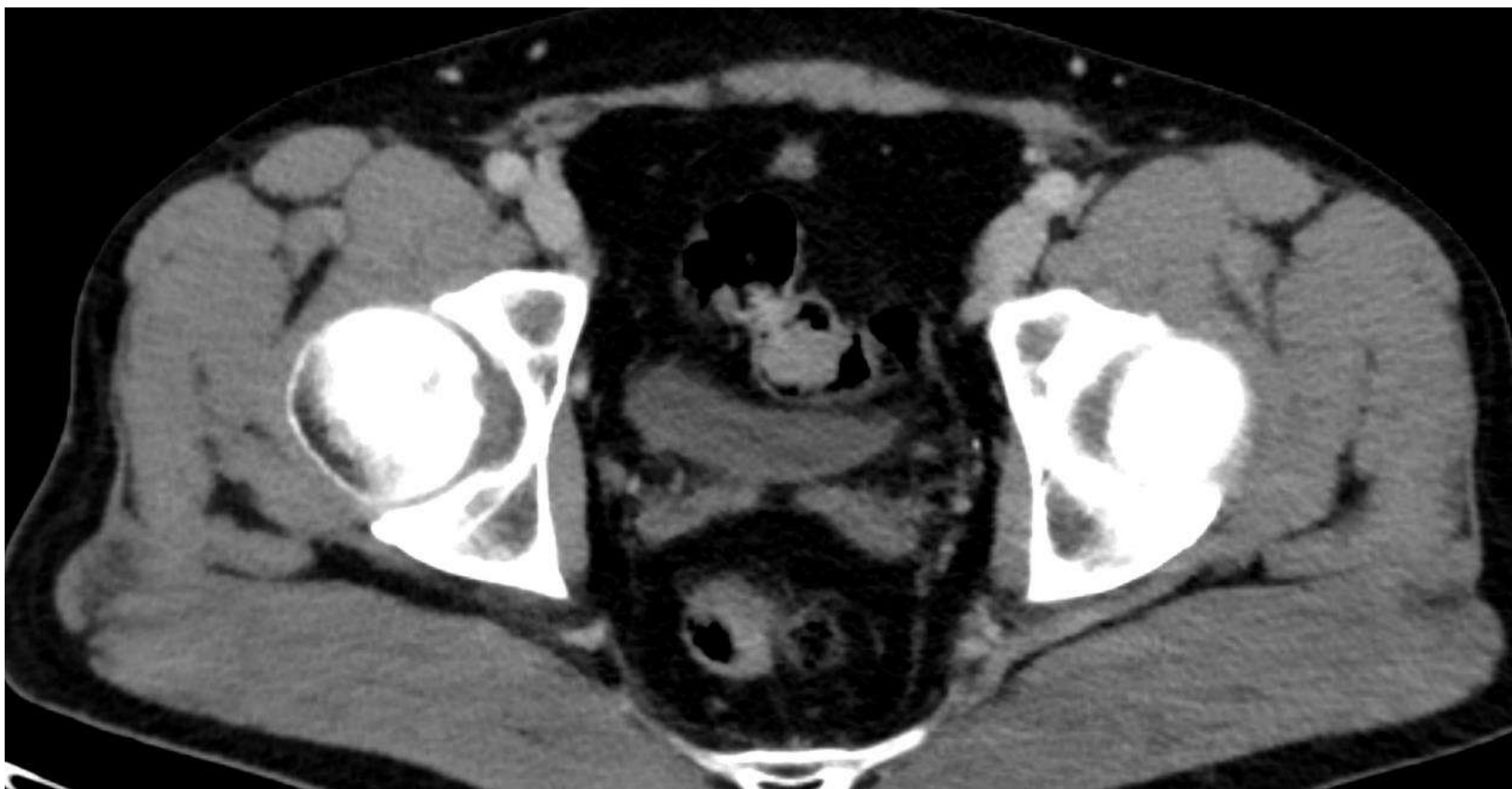
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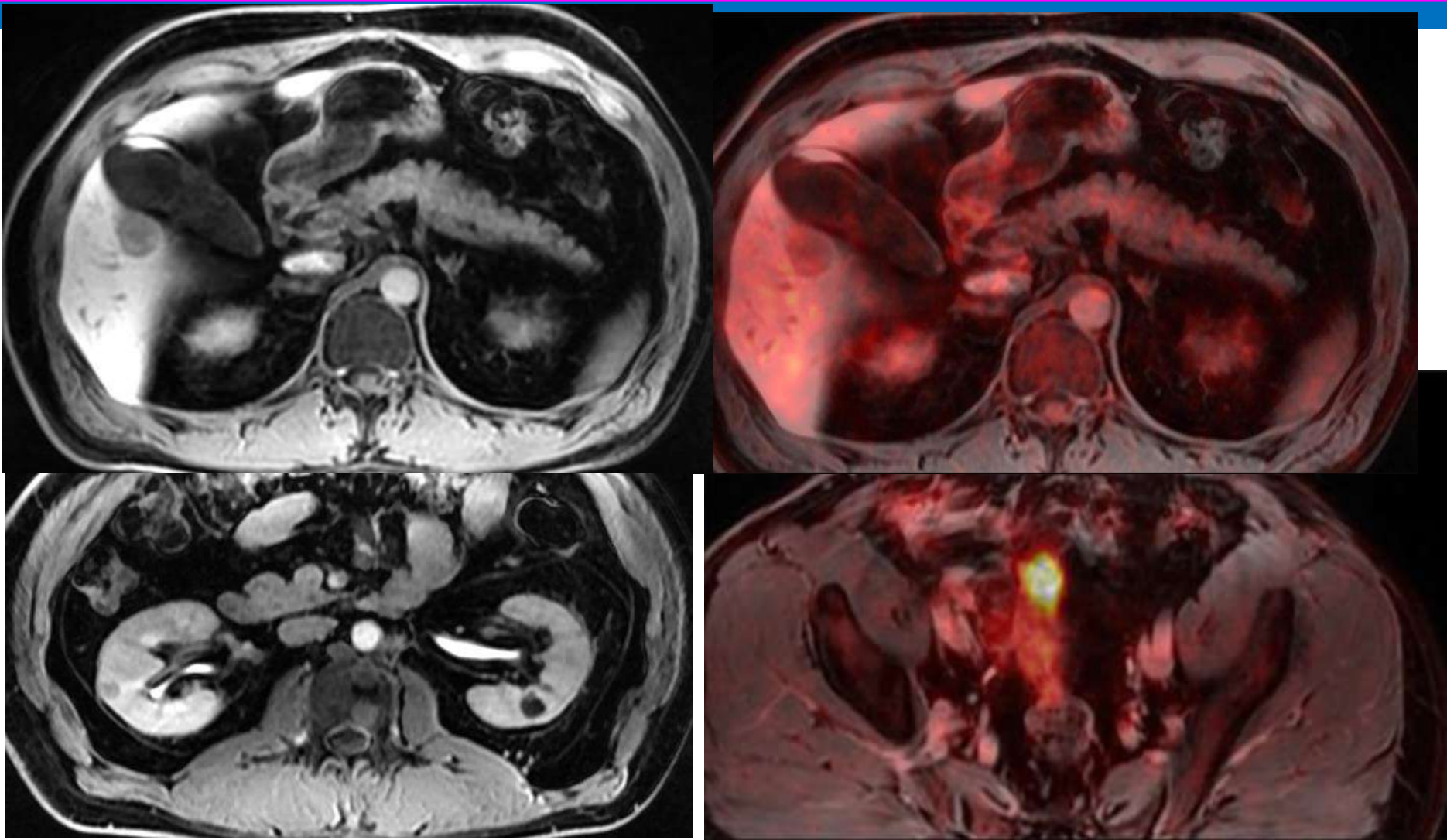
CT vyšetření břicha, muž 1973, dyspeptické potíže seminom, ložisko játra, ledvina



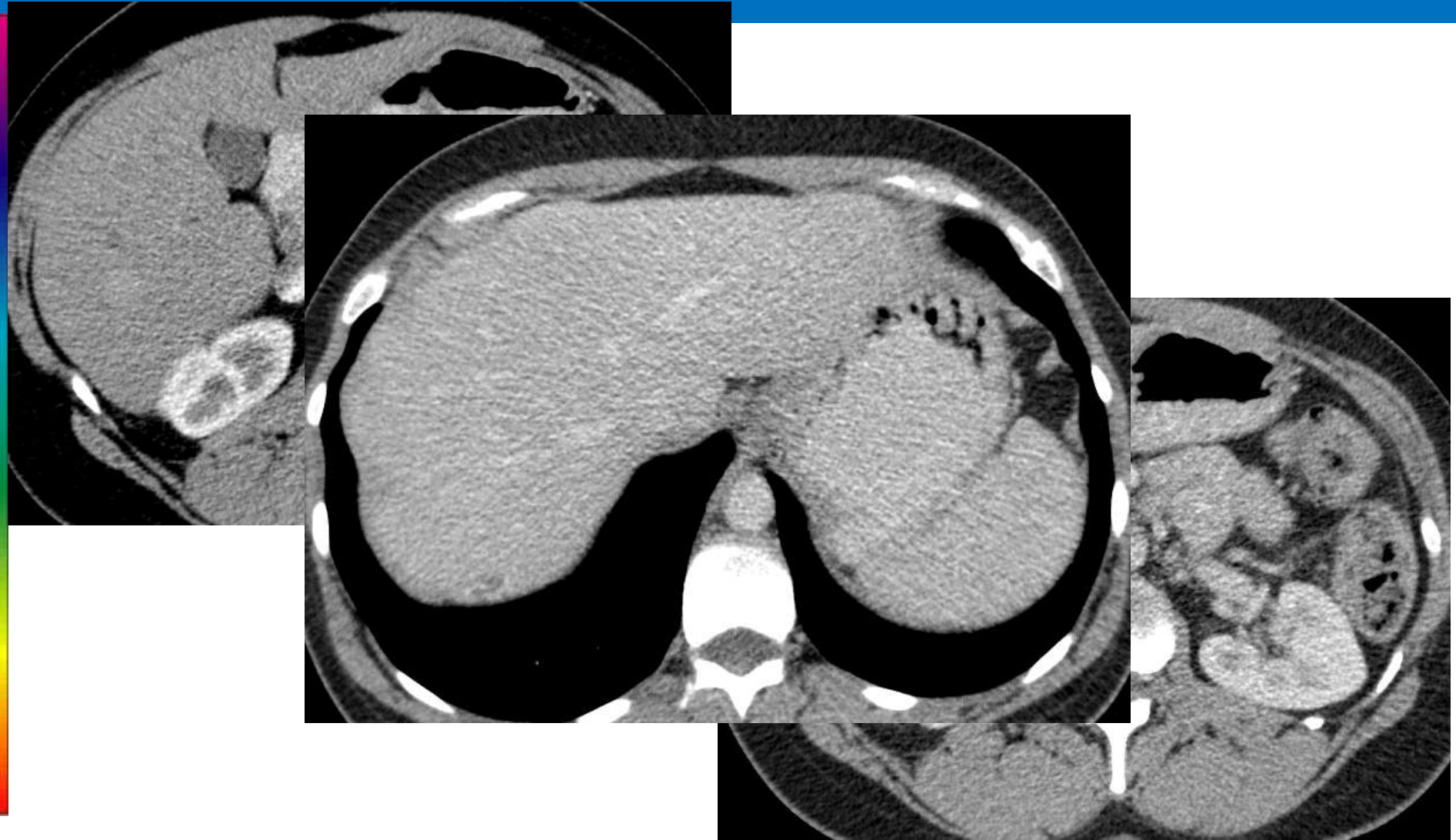
CT vyšetření břicha, muž 1973, dyspeptické potíže seminom, ložisko játra, tumor sigmoidu



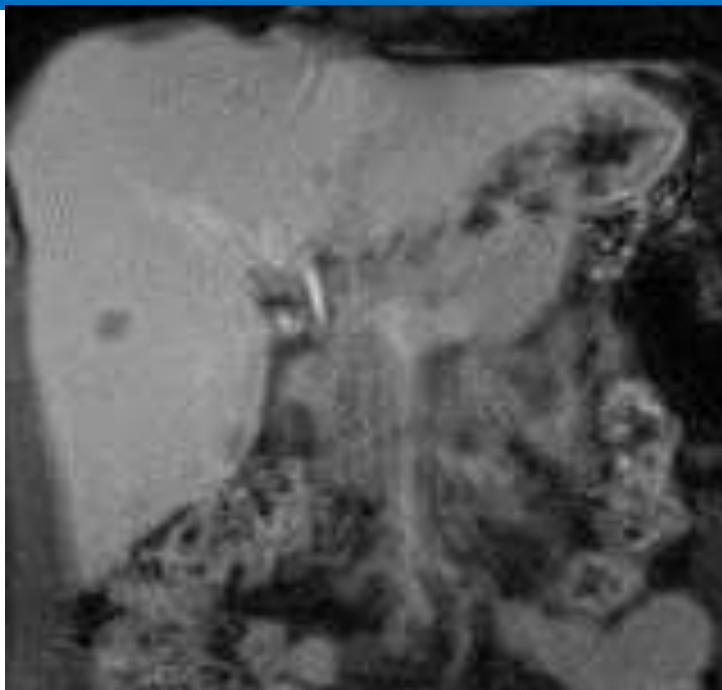
CT vyšetření břicha, muž 1973, dyspeptické potíže PET-MR



2010, UZ, hemangiom, CT nepopsané



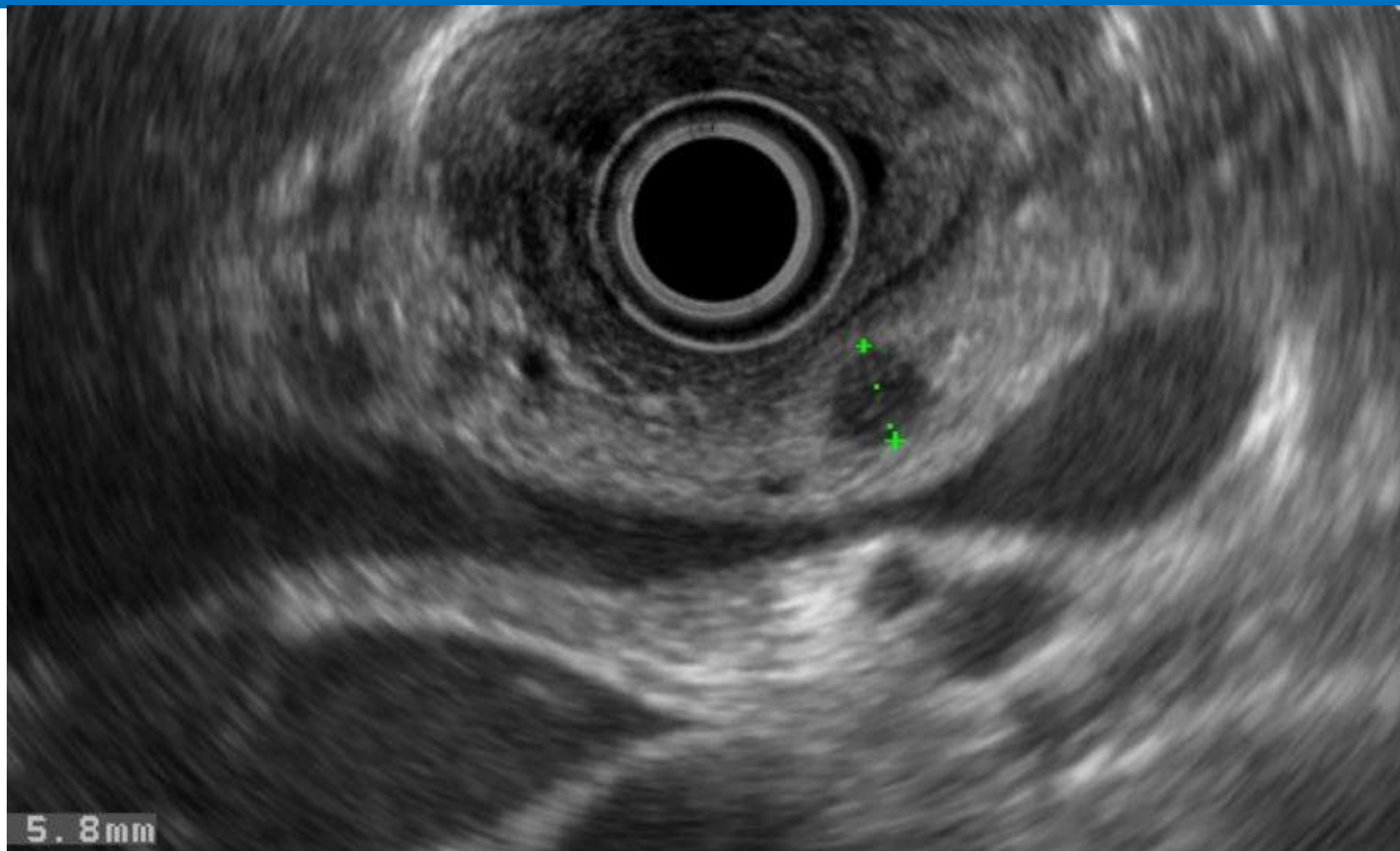
2010-2011



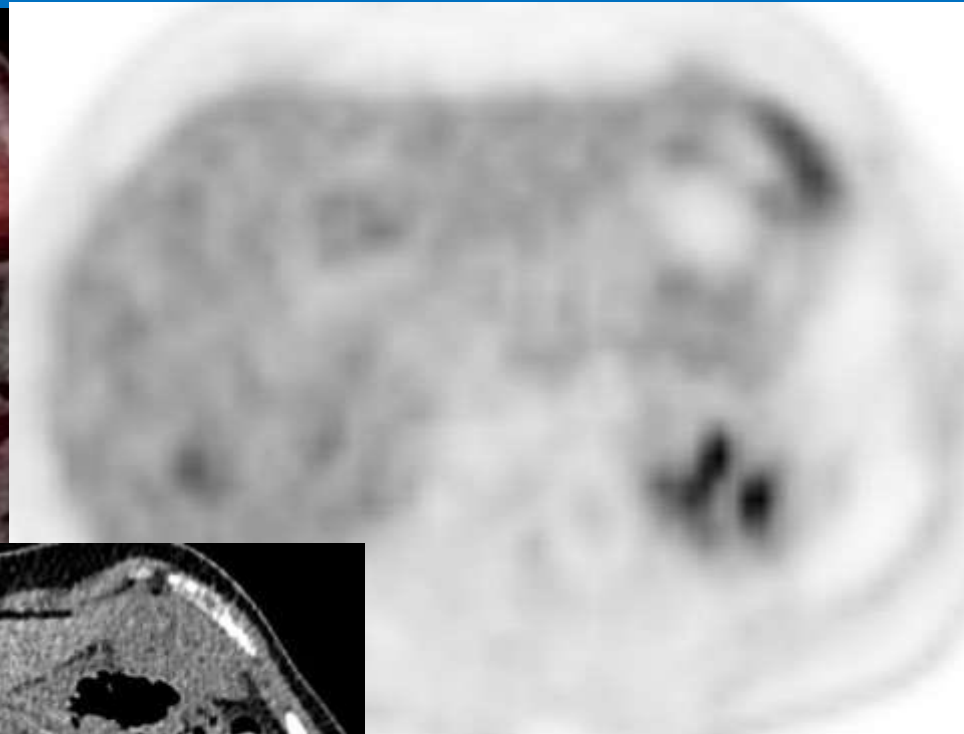
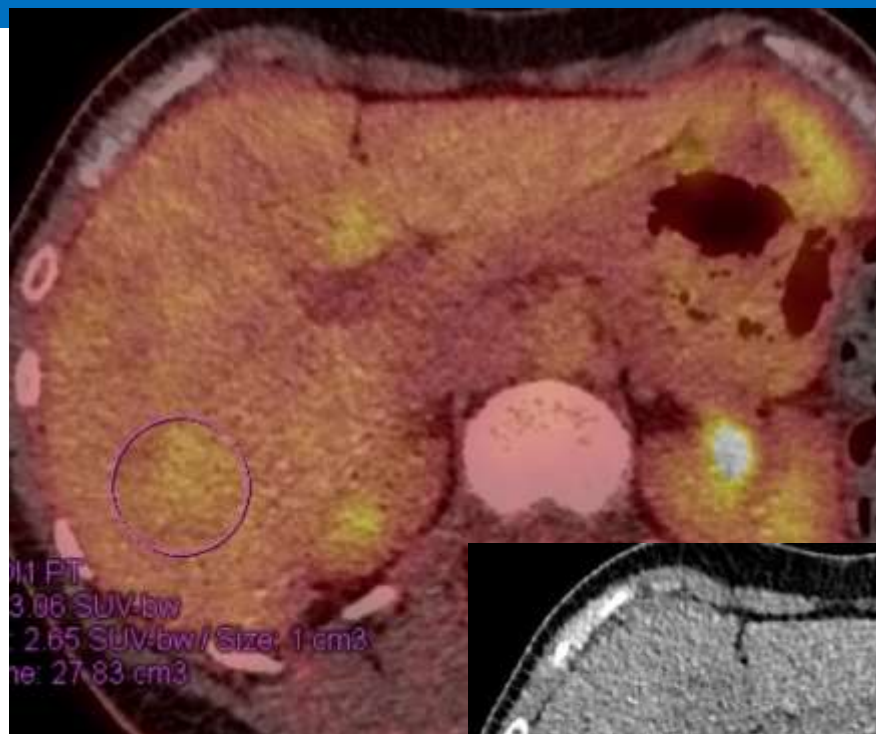
2012



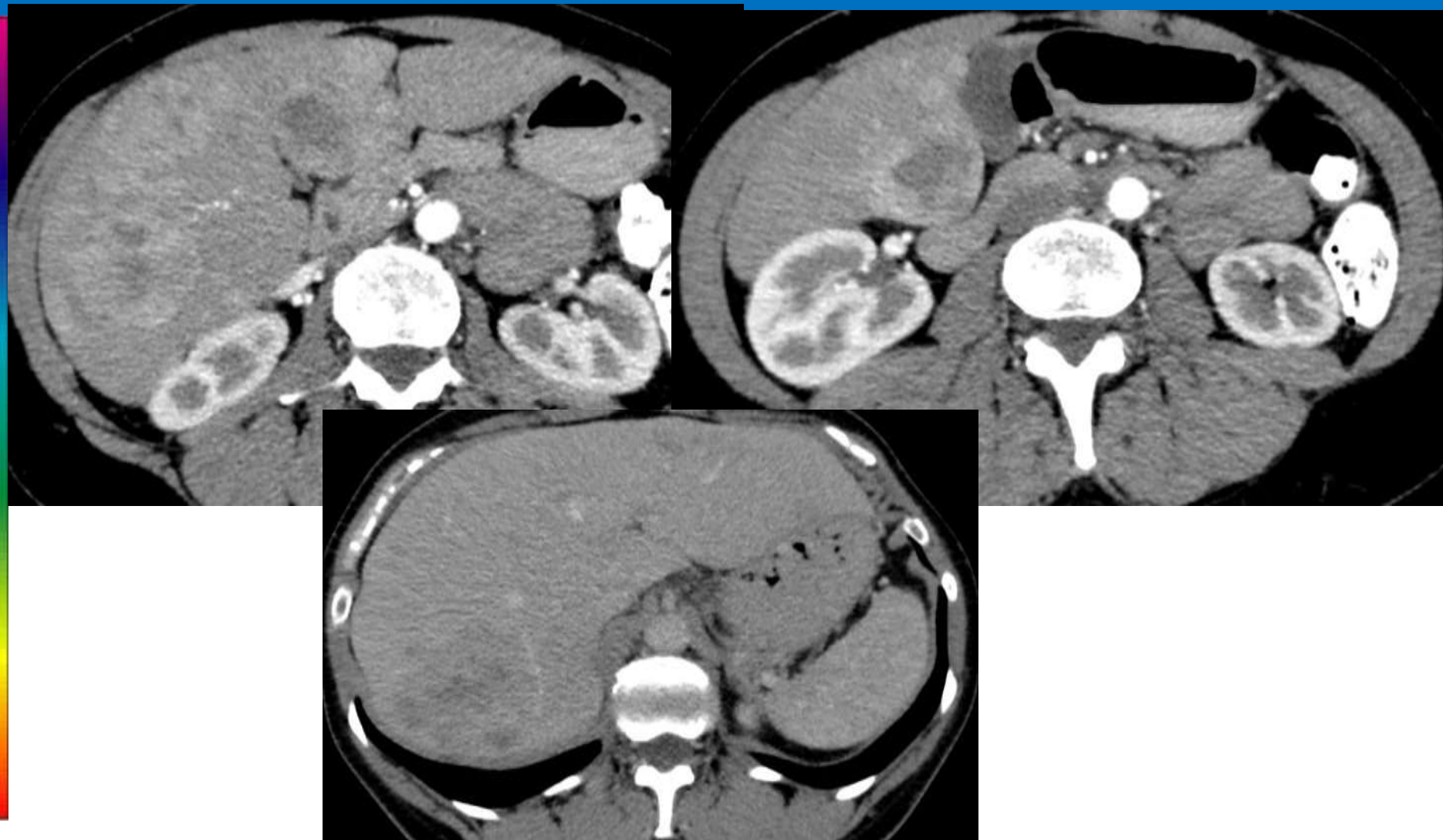
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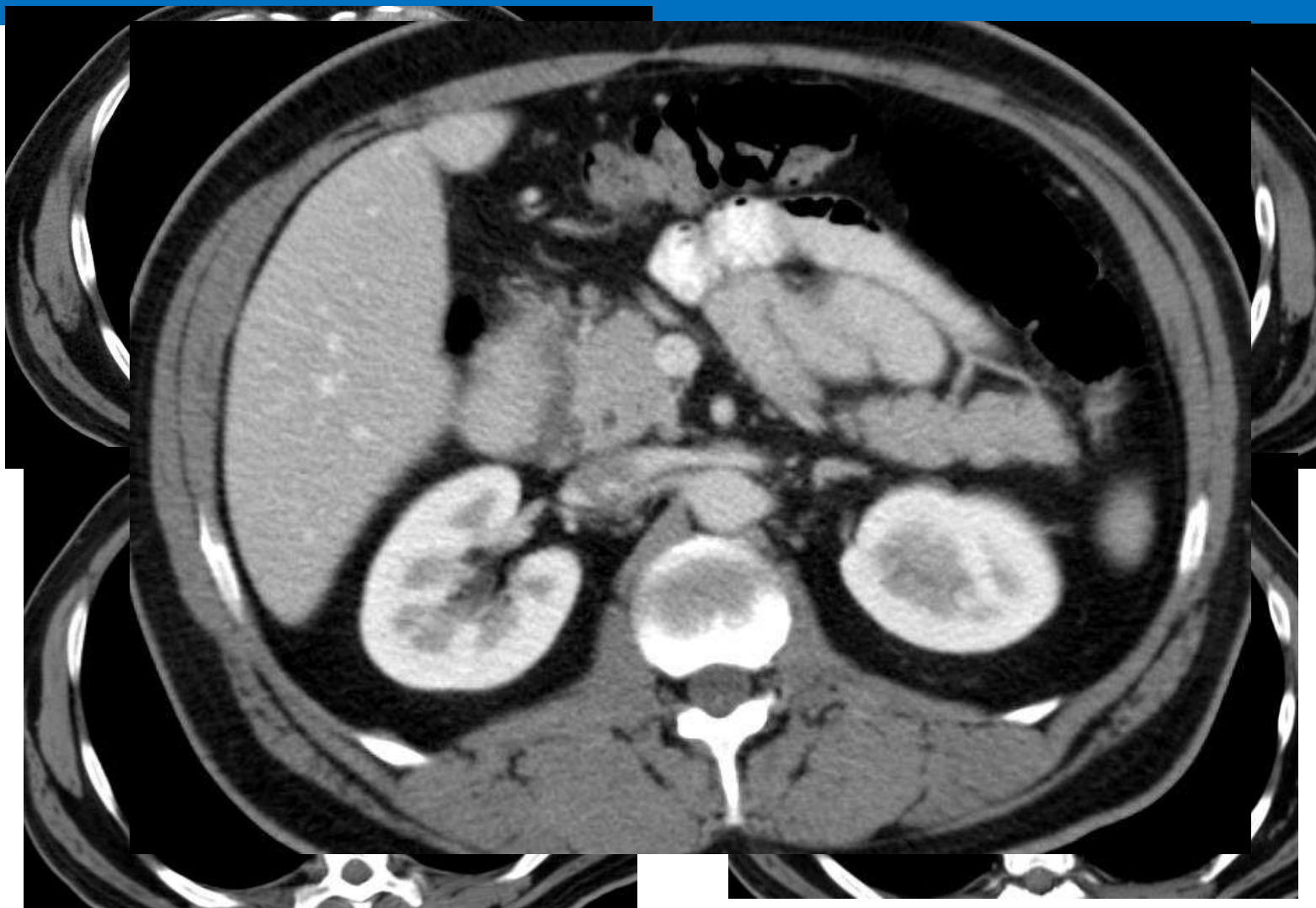
2016



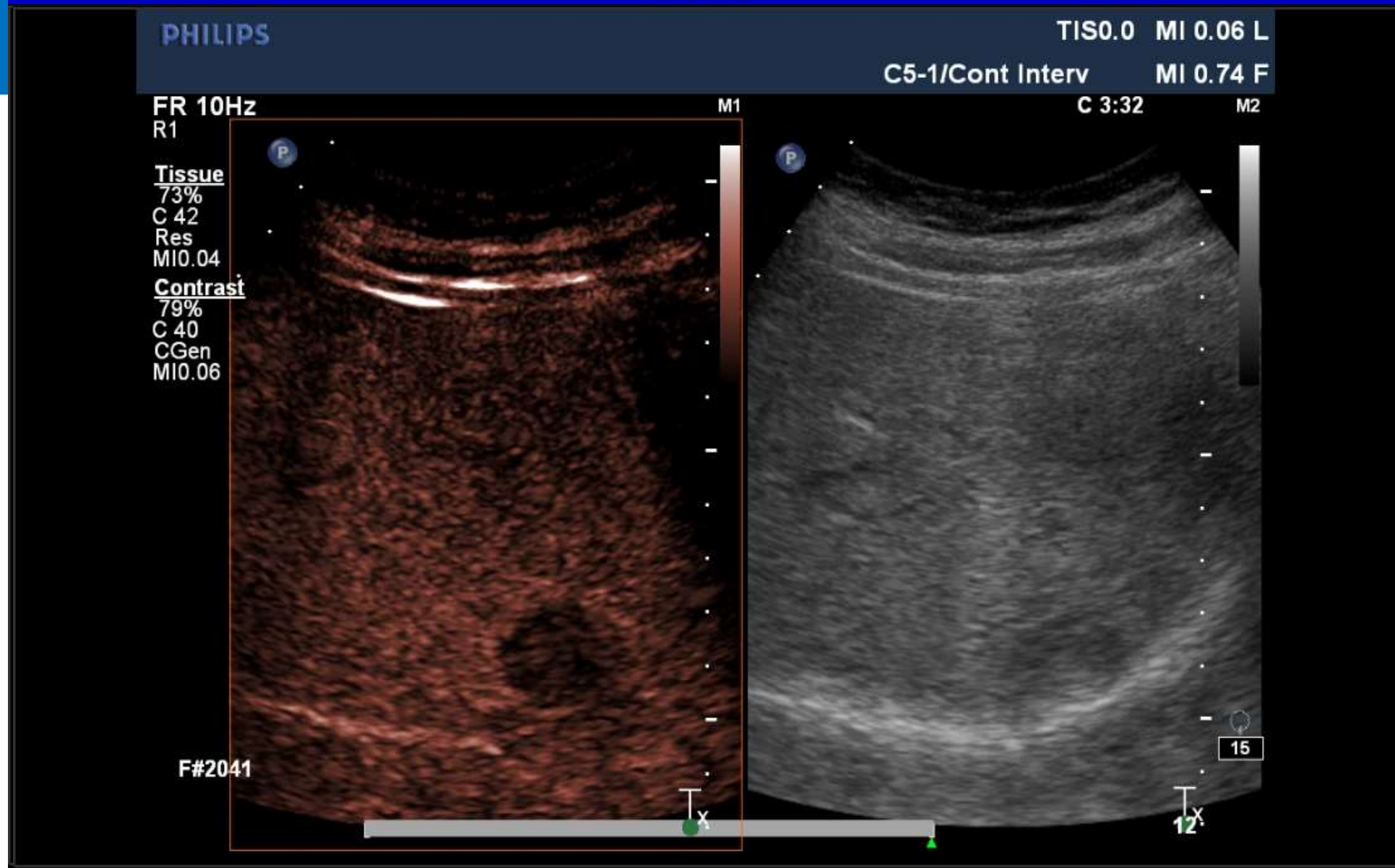
2018



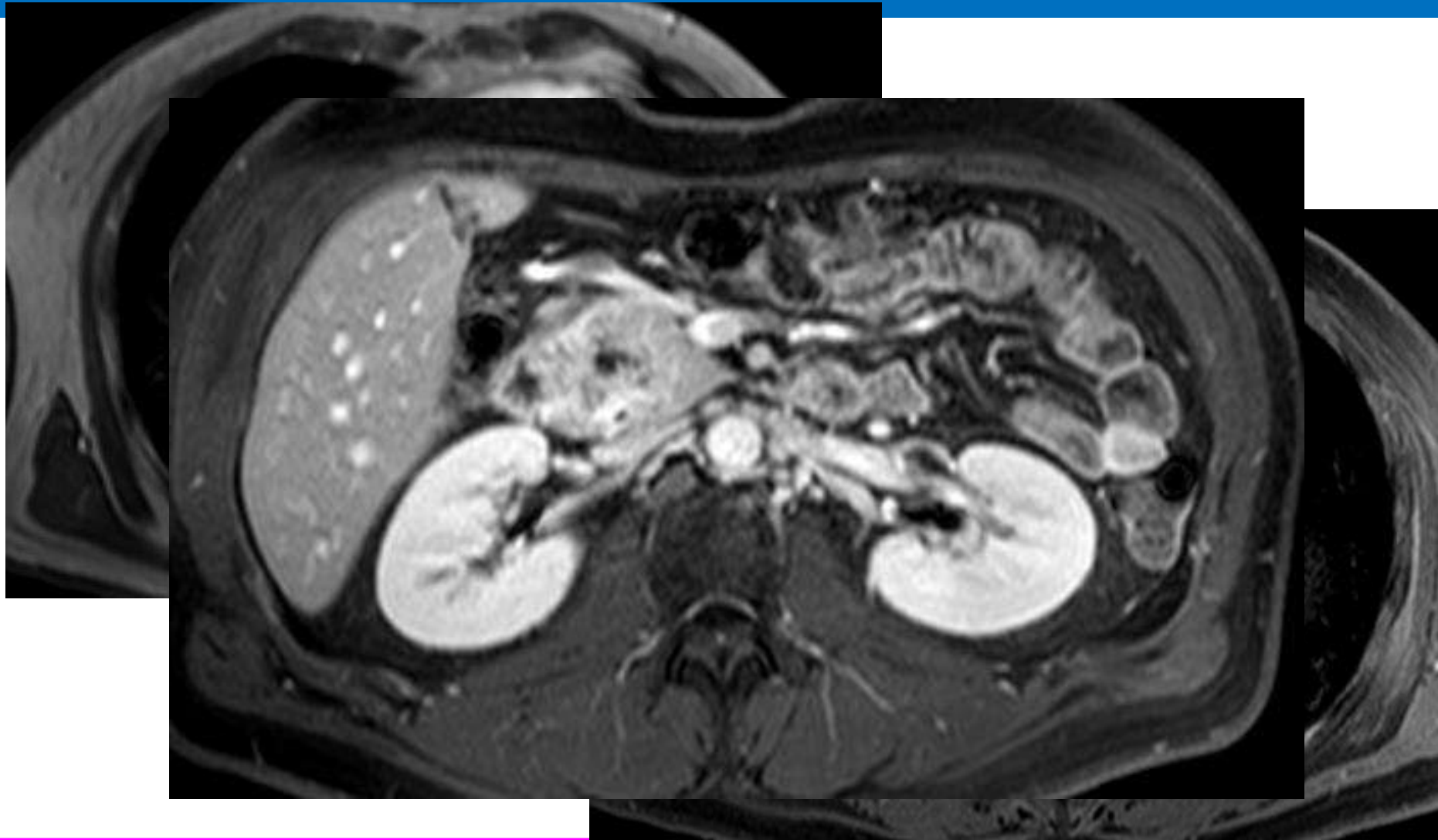
2013



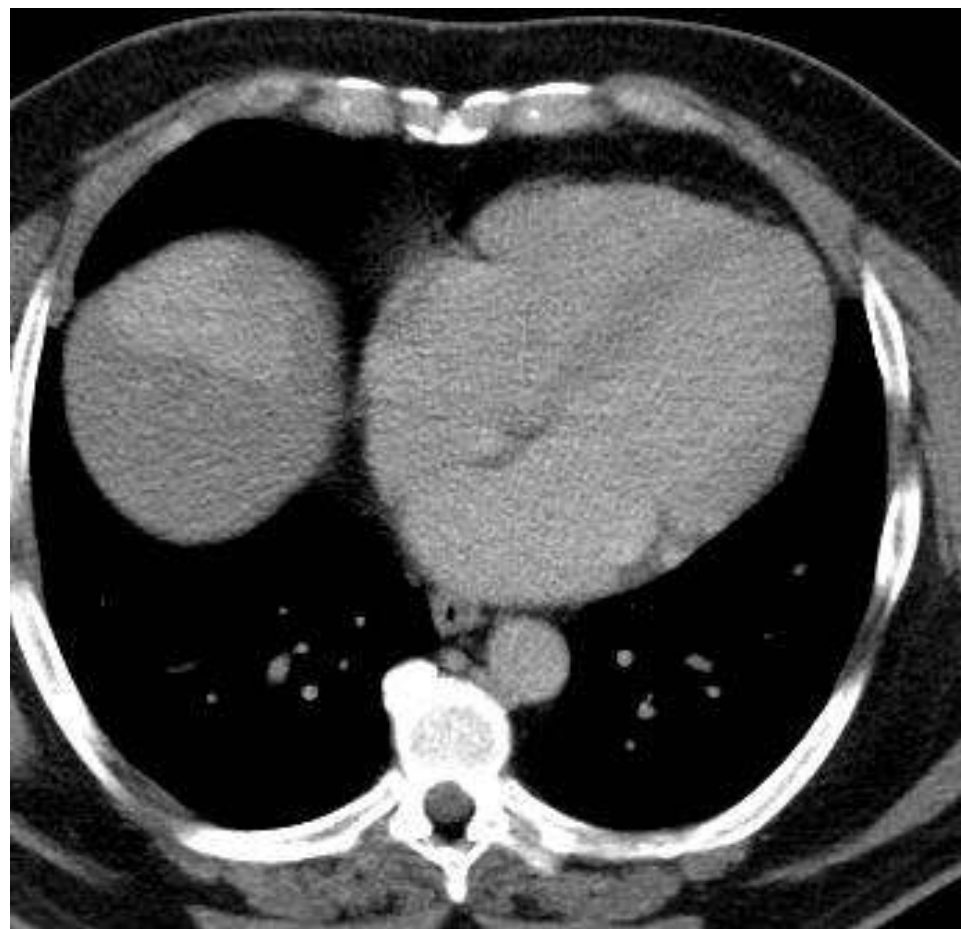
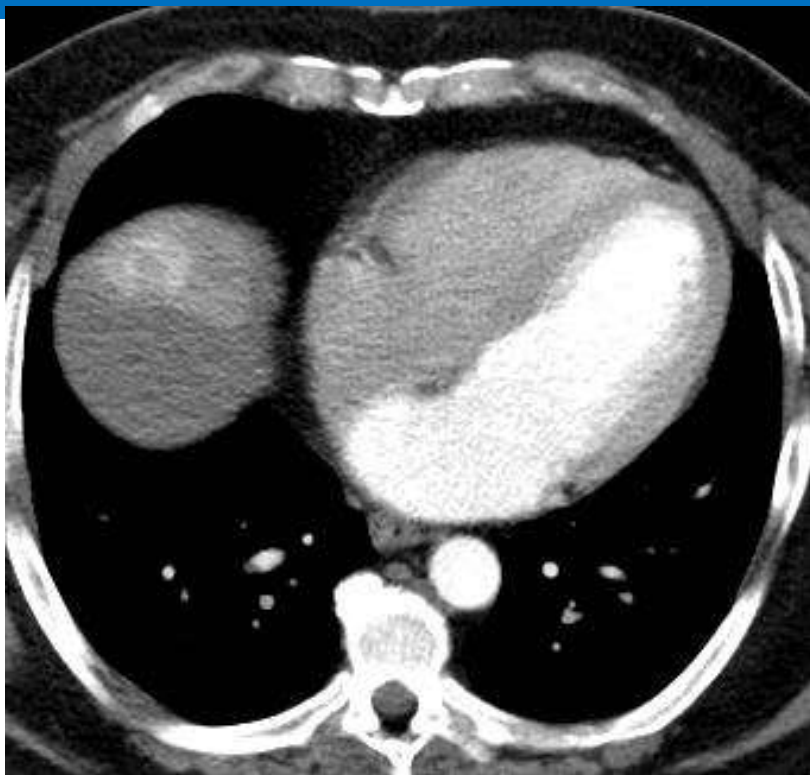
2013



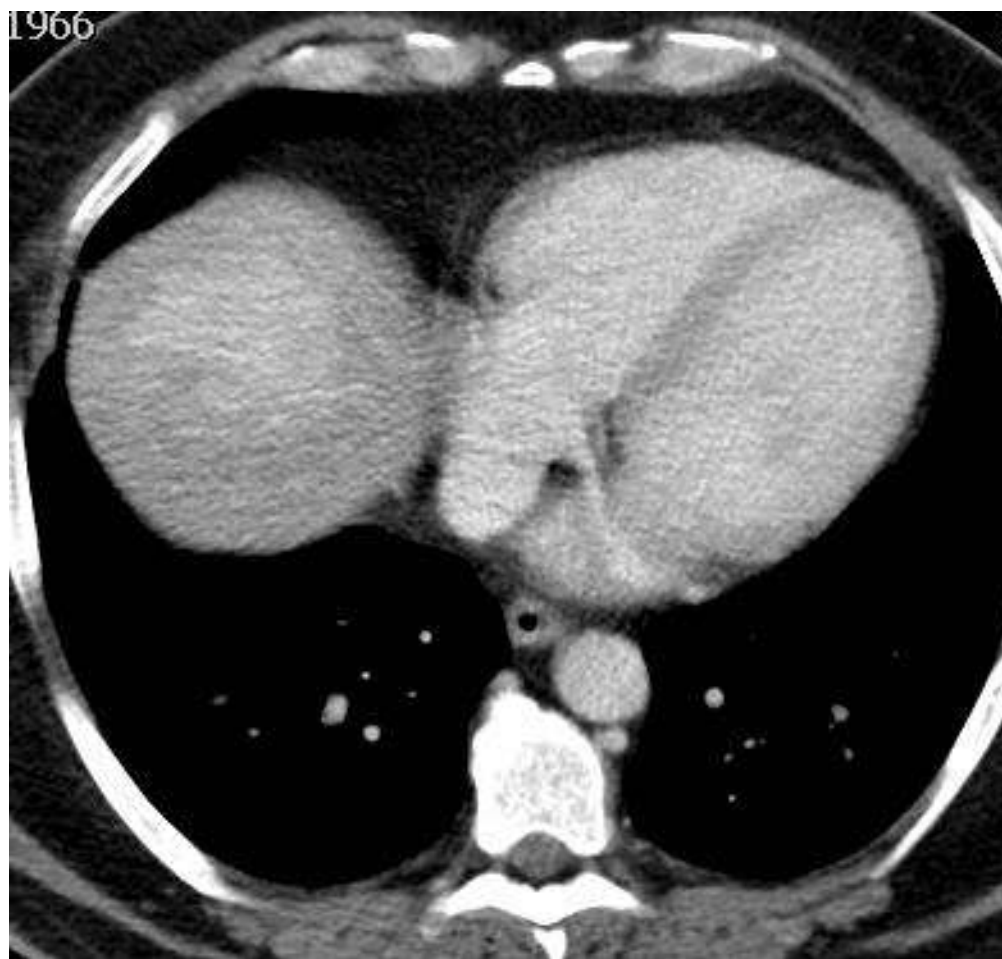
2013



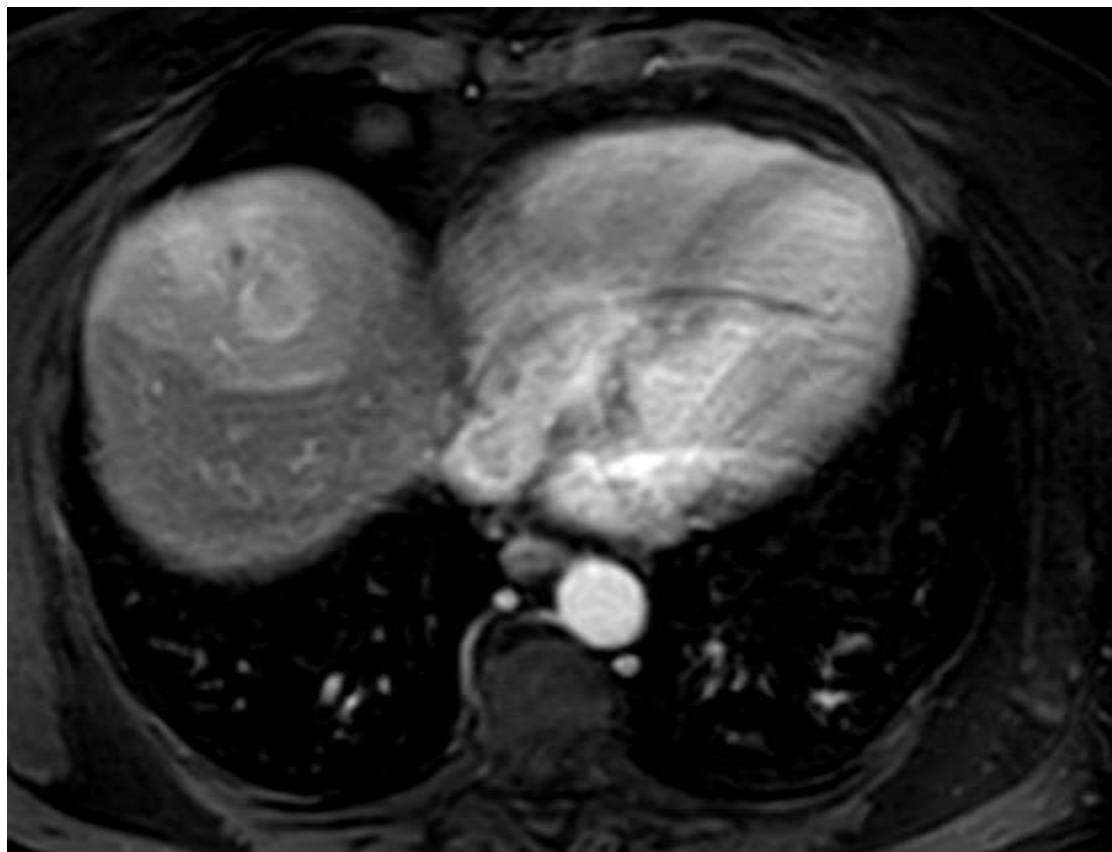
2015



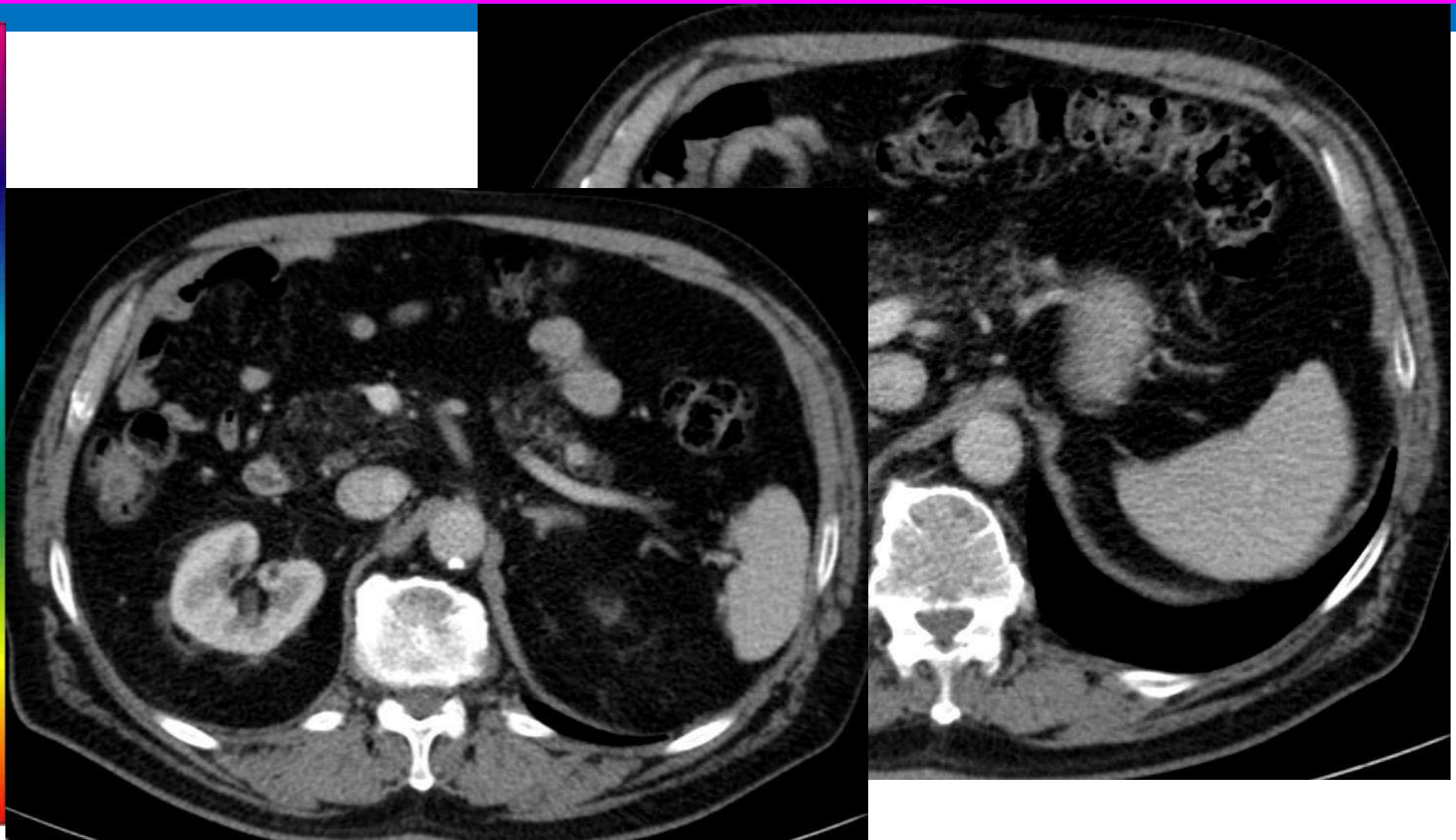
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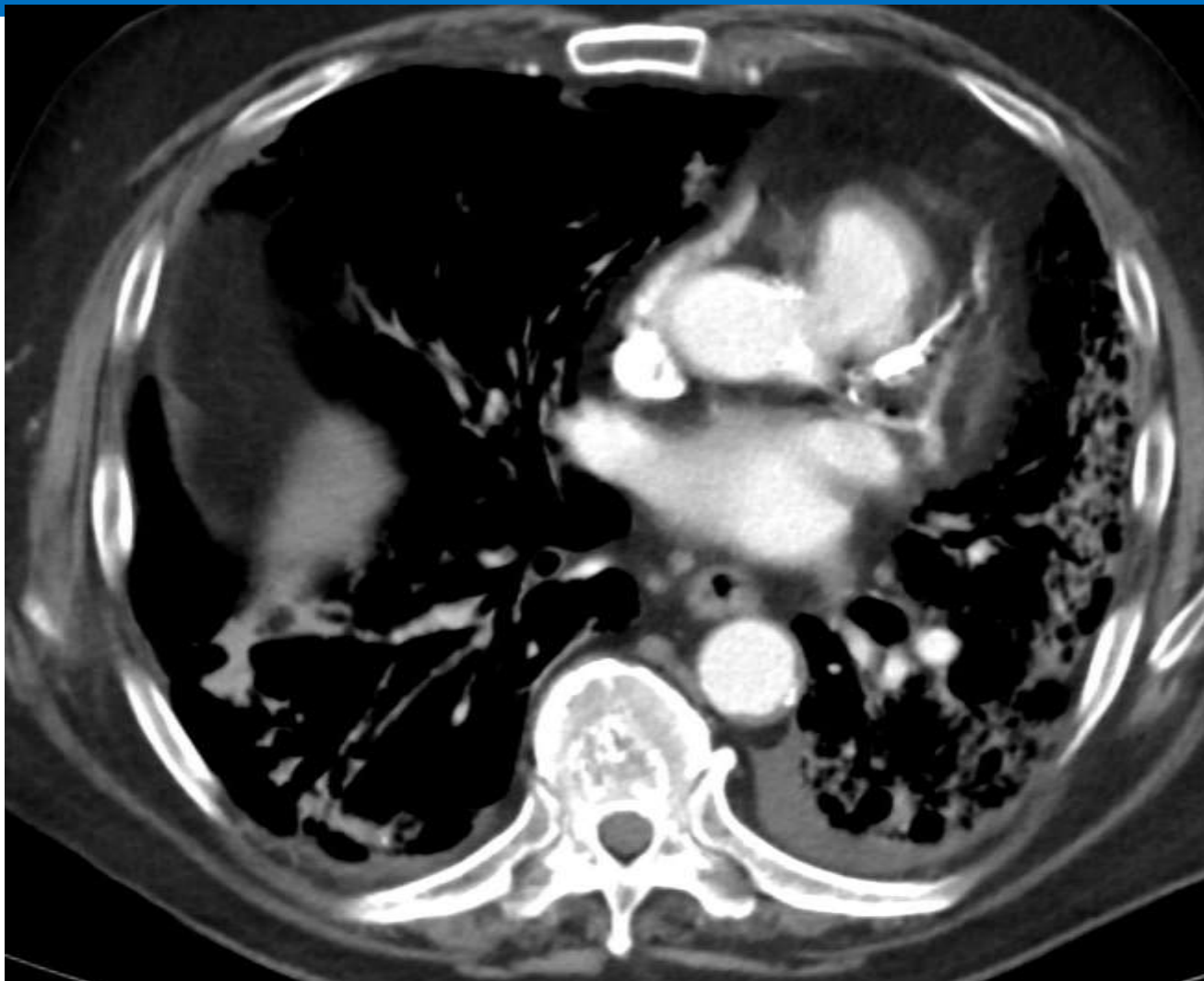
2018



Ledvina – pankreas 2013



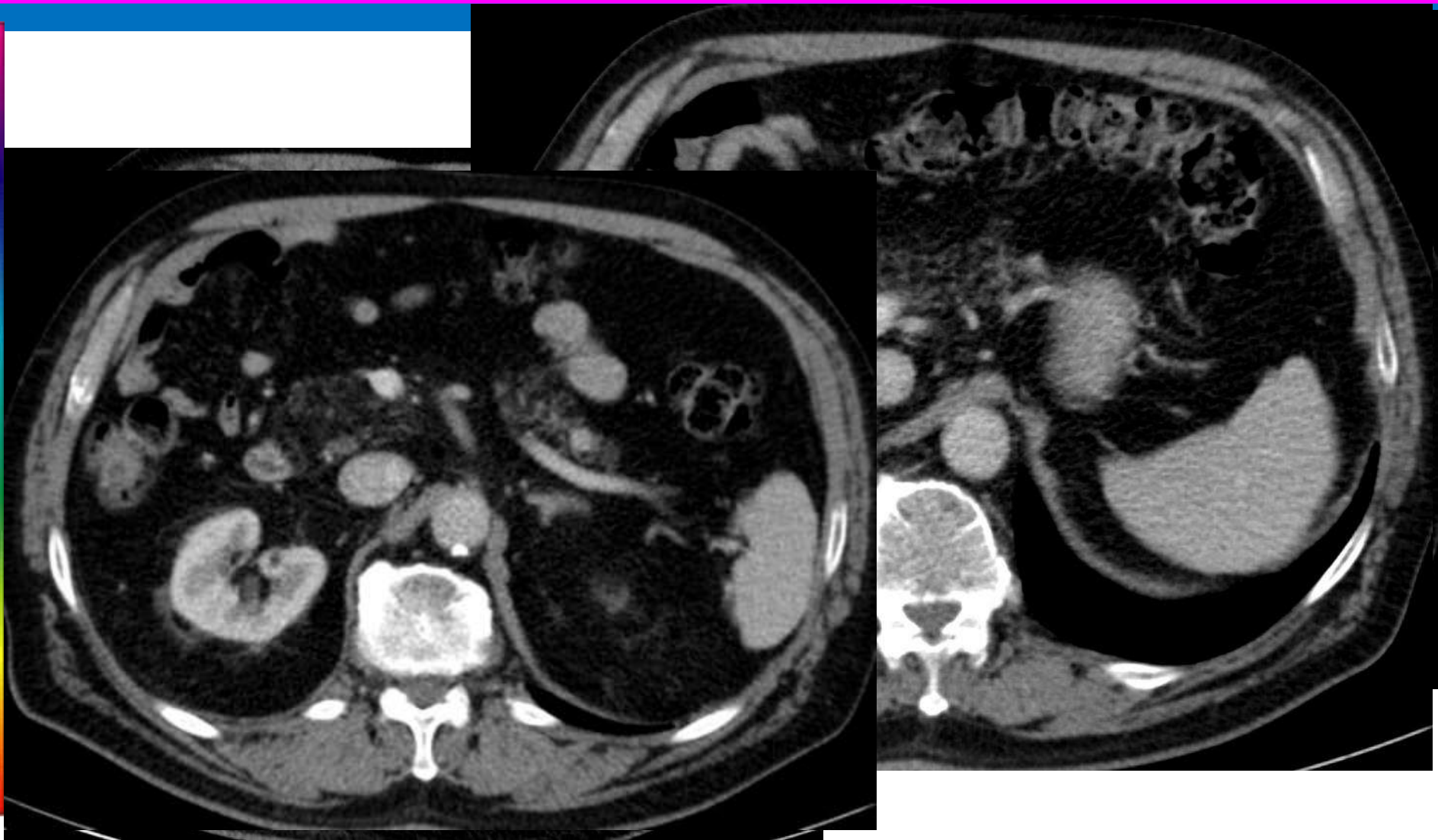
Ledvina – pankreas 2021



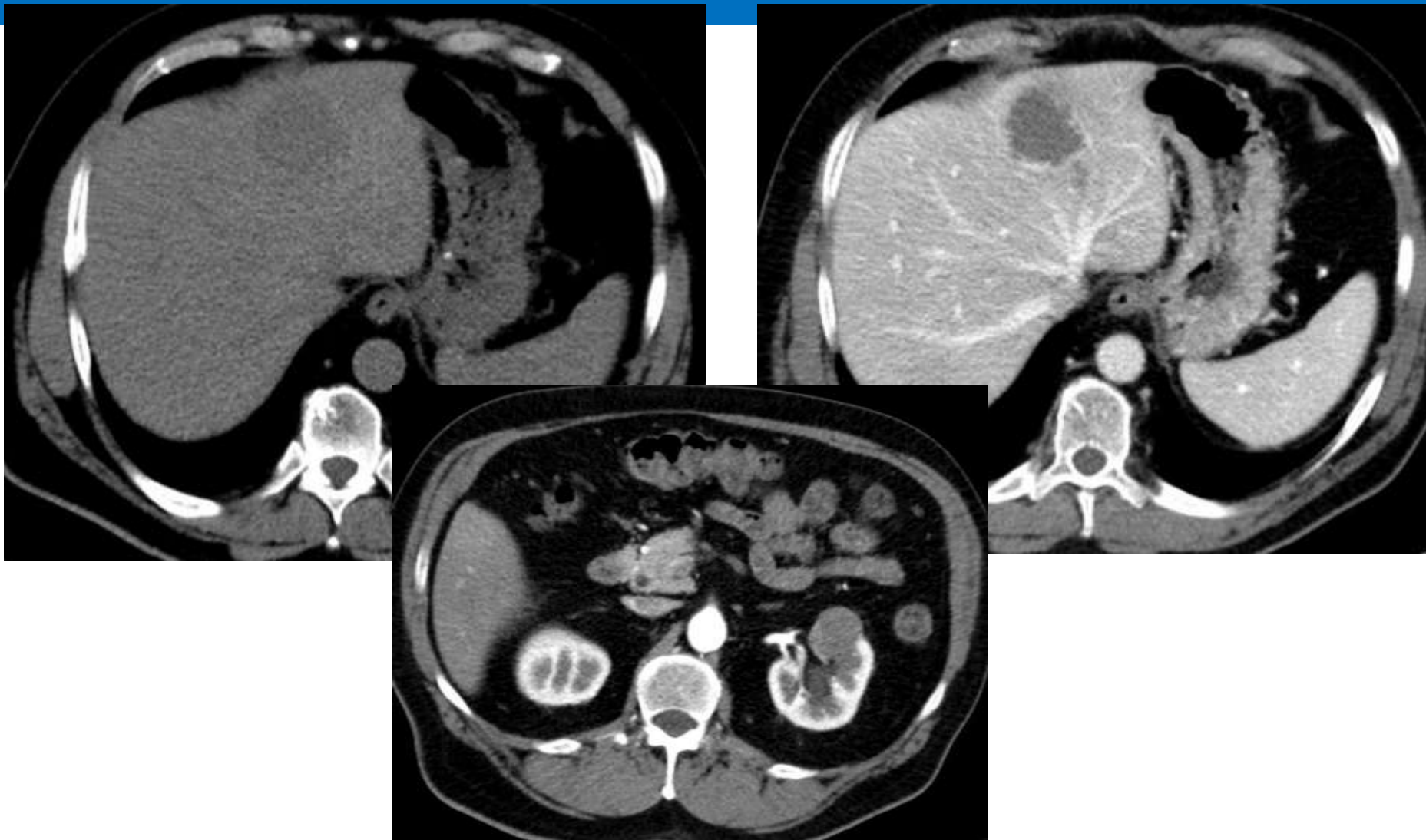
Ledvina – pankreas 2021



Ledvina – pankreas 2021



Játra - ledvin



Játra - ledvin

