Canon

Clinical evidence

Aplio

2022 (vol. 2) Edition

Glossary

ATI – Attenuation Imaging
CEUS – Contrast-Enhanced Ultrasound
CVI – Contrast Vector Imaging
GLS – Global Longitudinal Strain
MPI – Myocardial Performance Index
MVA – Mitral Valve Analysis
NLV – Normalized Local Variance
SMI – Superb Micro-vascular Imaging
SWD – Shear Wave Dispersion
SWE – Shear Wave Elastography
WMT – Wall Motion Tracking

Content

Gastrointestinal imaging

Review article **Liver** *SWE, SWD, ATI, NLV*

Quantification of Liver Fat Content with Ultrasound: A WFUMB Position Paper

Ferraioli G, Berzigotti A, Barr RG, Choi BI, Cui XW, Dong Y, Gilja OH, Lee JY, Lee DH, Moriyasu F, Piscaglia F, Sugimoto K, Wong GL, Wong VW, Dietrich CF

Ultrasound Med Biol. 2021;47(10):2803-2820

DOI: 10.1016/j.ultrasmedbio.2021.06.002 | **PMID:** 34284932

Original paper **Liver** *SWE, SWD, ATI*

Diagnostic Performance of 2-D Shear-Wave Elastography with Propagation Maps and Attenuation Imaging in Patients with Non-Alcoholic Fatty Liver Disease

Podrug K, Sporea I, Lupusoru R, Pastrovic F, Mustapic S, Bâldea V, Bozin T, Bokun T, Salkic N, Şirli R, Popescu A, Puljiz Z, Grgurevic I

Ultrasound Med Biol. 2021;47(8):2128-2137

DOI: 10.1016/j.ultrasmedbio.2021.03.025 | **PMID:** 33985827

Original paper **Liver** *SWE, SWD, ATI*

Comprehensive Viscoelastic Characterization of Tissues and the Inter-relationship of Shear Wave (Group and Phase) Velocity, Attenuation and Dispersion

Ormachea J, Parker KJ

Ultras Med Biol. 2020;46(12):3448-3459

DOI: 10.1016/j.ultrasmedbio.2020.08.023 | **PMID:** 32988669

Original paper **Liver** *SWE, SWD, ATI*

Multiparametric US for Identifying Patients with High-Risk NASH: A Derivation and Validation Study

Sugimoto K, Lee DH, Lee JY, Yu SJ, Moriyasu F, Sakamaki K, Oshiro H, Takahashi H, Kakegawa T, Tomita Y, Abe M, Yoshimasu Y, Takeuchi H, Choi BI, Itoi T

Radiology. 2021;301(3):625-634

DOI: 10.1148/radiol.2021210046 | **PMID:** 34519576

Review article **Liver** *SWE, SWD, ATI*

Quantitative Evaluation of Hepatic Steatosis Using Advanced Imaging Techniques: Focusing on New Quantitative Ultrasound Techniques

Park J, Lee JM, Lee G, Jeon SK, Joo I

Korean J Radiol. 2022;23(1):13-29

DOI: 10.3348/kjr.2021.0112 | **PMID:** 34983091 | **PMCID:** PMC8743150

Original paper **Liver** *SWE, SWD, ATI*

Shear wave elastography and shear wave dispersion imaging in primary biliary cholangitis - a pilot study

Schulz M, Wilde AB, Demir M, Müller T, Tacke F, Wree A

Quant Imaging Med Surg. 2022;12(2):1235-1242

DOI: 10.21037/qims-21-657 | **PMID:** 35111619 | **PMCID:** PMC8739107

Original paper **Liver** *SWE, SWD, ATI*

Post-COVID-19 Liver Injury: Comprehensive Imaging With Multiparametric Ultrasound

Radzina M, Putrins DS, Micena A, Vanaga I, Kolesova O, Platkajis A, Viksna L

J Ultrasound Med. 2022;41(4):935-949

DOI: 10.1002/jum.15778 | **PMID:** 34241914 | **PMCID:** PMC8427044

Original paper **Liver** *SWE, SWD, ATI*

Reduction of Shear Wave Elastography but Not Shear Wave Dispersion After Successful Hepatitis C Treatment With Direct-Acting Antiviral Agents

Su PY, Su WW, Wu LS, Hsu PK, Huang SP, Hsu YC

J Ultrasound Med. 2021;40(9):1919-1926

DOI: 10.1002/jum.15576 | **PMID:** 33400288

Original paper **Liver** *SWE, SWD, ATI*

Shear Wave Elastography and Shear Wave Dispersion Imaging in the Assessment of Liver Disease in Alpha1-Antitrypsin Deficiency

Schulz M, Kleinjans M, Strnad P, Demir M, Holtmann TM, Tacke F, Wree A
Diagnostics. 2021;11(4):629

DOI: 10.3390/diagnostics11040629 | **PMID:** 33807358 | **PMCID:** PMC8066059

Original paper **Liver** *SWE, SWD, ATI*

Assessment of chronic liver disease by multiparametric ultrasound: results from a private practice outpatient facility

Aitharaju V, De Silvestri A, Barr RG
Abdom Radiol. 2021;46(11):5152-5161

DOI: 10.1007/s00261-021-03225-2 | **PMID:** 34304291

Original paper **Liver** *SWE, SWD, ATI*

The Role of Multiparametric US of the Liver for the Evaluation of Nonalcoholic Steatohepatitis

Sugimoto K, Moriyasu F, Oshiro H, Takeuchi H, Abe M, Yoshimasu Y, Kasai Y, Sakamaki K, Hara T, Itoi T
Radiology. 2020;296(3):532-540

DOI: 10.1148/radiol.2020192665 | **PMID:** 32573385

Original paper **Liver** *SWE, SWD, ATI*

Reliability of Performing Multiparametric Ultrasound in Adult Livers

Gao J, Lee R, Trujillo M
J Ultrasound Med. 2022;41(3):699-711

DOI: 10.1002/jum.15751 | **PMID:** 33982805

Original paper **Liver** *SWE, SWD, ATI*

Accuracy of Two-Dimensional Shear Wave Elastography and Attenuation Imaging for Evaluation of Patients with Nonalcoholic Steatohepatitis

Lee DH, Cho EJ, Bae JS, Lee JY, Yu SJ, Kim H, Lee KB, Han JK, Choi BI
Clin Hepatol Gastroenterol. 2021;19(4):797-805.e7

DOI: 10.1016/j.cgh.2020.05.034 | **PMID:** 32450363

Original paper **Liver** *SWE, SWD*

Shear-Wave Dispersion Slope from US Shear-Wave Elastography: Detection of Allograft Damage after Liver Transplantation

Lee DH, Lee JY, Bae JS, Yi NJ, Lee KW, Suh KS, Kim H, Lee KB, Han JK
Radiology. 2019;293(2):327-333

DOI: 10.1148/radiol.2019190064 | **PMID:** 31502939

Original paper **Liver** *SWE, SWD*

Shear-Wave Dispersion Slope of the Liver: Effect of Study Protocol and Ascites on the Measurement Applicability

Zhang XQ, Zeng J, Jin JY, Wang JF, Chi YY, Zheng RQ
Ultrasound Med Biol. 2022;48(1):59-67

DOI: 10.1016/j.ultrasmedbio.2021.09.012 | **PMID:** 34702641

Original paper **Liver (Phantom)** *SWE, SWD*

Sources of Variability in Shear Wave Speed and Dispersion Quantification with Ultrasound Elastography: A Phantom Study

Korta Martiartu N, Nambiar S, Nascimento Kirchner I, Paverd C, Cester D, Frauenfelder T, Ruby L, Rominger MB
Ultrasound Med Biol. 2021;47(12):3529-3542

DOI: 10.1016/j.ultrasmedbio.2021.08.013 | **PMID:** 34548187

Original paper **Liver** *SWE, SWD*

Shear Wave Dispersion Imaging for the Characterization of Focal Liver Lesions - A Pilot study

Jesper D, Fiedler S, Klett D, Waldner MJ, Schellhaas B, Zundler S, Neurath MF, Pfeifer L

Ultraschall Med. 2021. online ahead of print

DOI: 10.1055/a-1610-9171 | **PMID:** 34614516

Original paper **Liver** *SWE, SWD*

Ultrasound Shear Wave Elastography and Doppler Sonography to Assess the Effect of Hydration on Human Kidneys: A Preliminary Observation

Gao J, Thai A, Lee J, Fowlkes JB

Ultrasound Med Biol. 2020;46(5):1179-1188

DOI: 10.1016/j.ultrasmedbio.2020.01.011 | **PMID:** 32081585

Original paper **Liver (animal model)** *SWE, SWD*

Can Viscoelasticity Measurements Obtained Through Shear-Wave US Elastography be used to Monitor Hepatic Ischemia-Reperfusion Injury and Treatment Response? An Animal Study

Tang Y, Kong W, Zhao J, Chen Y, Liu L, Zhang G

Ultrasound Med Biol. 2020;46(9):2464-2471

DOI: 10.1016/j.ultrasmedbio.2020.04.021 | **PMID:** 32553529

Original paper **Liver** *SWE, SWD*

Performance and cutoffs for liver fibrosis staging of a two-dimensional shear wave elastography technique

Ferraioli G, Maiocchi L, Dellafiore C, Tinelli C, Above E, Filice C

Eur J Gastroenterol Hepatol. 2021;33(1):89-95

DOI: 10.1097/meg.0000000000001702 | **PMID:** 32118850

Original paper **Liver** *SWE, SWD*

Liver Shear Wave Speed and Other Quantitative Ultrasound Measures of Liver Parenchyma: Prospective Evaluation in Healthy Children and Adults

Trout AT, Xanthakos SA, Bennett PS, Dillman JR

Am J Roentgenol. 2020;214(3):557-565

DOI: 10.2214/ajr.19.21796 | **PMID:** 31913070

Original paper **Liver** *SWE, SWD*

Shear-Wave Dispersion Slope from US Shear-Wave Elastography: Detection of Allograft Damage after Liver Transplantation

Lee DH, Lee JY, Bae JS, Yi NJ, Lee KW, Suh KS, Kim H, Lee KB, Han JK

Radiology. 2019;293(2):327-333

DOI: 10.1148/radiol.2019190064 | **PMID:** 31502939

Review article **Liver** *SWE, SWD*

Clinical utilization of shear wave dispersion imaging in diffuse liver disease

Sugimoto K, Moriyasu F, Oshiro H, Takeuchi H, Yoshimasu Y, Kasai Y, Itoi T

Ultrasonography. 2020;39(1):3-10

DOI: 10.14366/usg.19031 | **PMID:** 31645092 | **PMCID:** PMC6920618

Original paper **Liver** *SWE, SWD*

Added value of 2D shear wave imaging of the gallbladder bed of the liver for acute cholecystitis

Ko A, Lee ES, Park HJ, Park SB, Kim HS, Choi BI

Ultrasonography. 2020;39(4):384-393

DOI: 10.14366/usg.19060 | **PMID:** 32962334 | **PMCID:** PMC7515659

Original paper **Liver** *SWE, ATI*

Efficacy of shear wave elastography for assessment of liver function in patients with heart failure

Nakayama R, Takaya Y, Nakamura K, Toh N, Ito H
ESC Heart Fail. 2021;8(3):1751-1758.

DOI: 10.1002/ehf2.13318 | **PMID:** 33760377 | **PMCID:** PMC8120356

Original paper **Liver** *SWE, ATI*

The effect of water intake on ultrasound tissue characteristics and hemodynamics of adult livers

Lee J, Lee R, Erpelding T, Siddoway RL, Gao J
Clin Exp Hepatol. 2021;7(2):223-230

DOI: 10.5114/ceh.2021.107068 | **PMID:** 34295991 | **PMCID:** PMC8284166

Original paper **Liver** *SWE, ATI*

Quantification of Steatosis and Fibrosis using a new system implemented in an ultrasound machine

Sporea I, Bâldea V, Lupușoru R, Bende F, Mare R, Lazăr A, Popescu A, Șirli R
Med Ultrason. 2020;22(3):265-271

DOI: 10.11152/mu-2495 | **PMID:** 32399537

Original paper **Liver** *SWE, ATI*

Comparison of liver stiffness assessment by transient elastography and shear wave elastography using six ultrasound devices

Iijima H, Tada T, Kumada T, Kobayashi N, Yoshida M, Aoki T, Nishimura T, Nakano C, Ishii A, Takashima T, Sakai Y, Aizawa N, Nishikawa H, Ikeda N, Iwata Y, Enomoto H, Ide Y, Hirota S, Fujimoto J, Nishiguchi S
Hepatol Res. 2019;49(6):676– 686

DOI: 10.1111/hepr.13319 | **PMID:** 30680865

Original paper **Liver** *ATI*

Assessment of the inter-platform reproducibility of ultrasound attenuation examination in nonalcoholic fatty liver disease

Jeon SK, Lee JM, Joo I, Yoon JH

Ultrasonography. 2022;41(2):355-364

DOI: 10.14366/usg.21167 | **PMID:** 34933319

Original paper **Liver** *ATI*

A Pre-Release Algorithm With a Confidence Map for Estimating the Attenuation Coefficient for Liver Fat Quantification

Barr RG, Cestone A, De Silvestri A

J Ultrasound Med. 2021; online ahead of print

DOI: 10.1002/jum.15870 | **PMID:** 34730847

Original paper **Liver** *ATI*

Focal fatty sparing as an indicator of higher-grade fatty liver assessed by attenuation imaging: a prospective clinical study in NAFLD population

Miller E, Schmidberger J, Kratzer W

Z Gastroenterol. 2021. online ahead of print

DOI: 10.1055/a-1695-3637 | **PMID:** 34905800

Review article **Liver** *ATI*

Quantitative assessment of fatty liver using ultrasound attenuation imaging

Lee DH

J Med Ultrason. 2021;48(4):465-470

DOI: 10.1007/s10396-021-01132-z | **PMID:** 34453237

Original paper **Liver** *ATI*

Noninvasive assessment of hepatic steatosis using a pathologic reference standard: comparison of CT, MRI, and US-based techniques

Bae JS, Lee DH, Suh KS, Kim H, Lee KB, Lee JY, Han JK
Ultrasonography. 2022;41(2):344-354

DOI: 10.14366/usg.21150 | **PMID:** 34852424

Original paper **Liver** *ATI*

Diagnostic performance of ultrasound attenuation imaging for assessing low-grade hepatic steatosis

Jang JK, Kim SY, Yoo IW, Cho YB, Kang HJ, Lee DH
Eur Radiol. 2022;32(3):2070-2077

DOI: 10.1007/s00330-021-08269-y | **PMID:** 34549325

Original paper **Liver** *ATI*

The most appropriate region-of-interest position for attenuation coefficient measurement in the evaluation of liver steatosis

Sugimoto K, Abe M, Oshiro H, Takahashi H, Kakegawa T, Tomita Y, Yoshimasu Y, Takeuchi H, Itoi T
J Med Ultrason. 2021;48(4):615-621

DOI: 10.1007/s10396-021-01124-z | **PMID:** 34453648

Review article **Liver** *ATI*

US Attenuation for Liver Fat Quantification: An AIUM-RSNA QIBA Pulse-Echo Quantitative Ultrasound Initiative

Ferraioli G, Kumar V, Ozturk A, Nam K, de Korte CL, Barr RG
Radiology. 2022;302(3):495-506

DOI: 10.1148/radiol.210736 | **PMID:** 35076304

Meta-analysis **Liver** *ATI*

Accuracy of the ultrasound attenuation coefficient for the evaluation of hepatic steatosis: a systematic review and meta-analysis of prospective studies

Jang JK, Choi SH, Lee JS, Kim SY, Lee SS, Kim KW

Ultrasonography. 2022;41(1):83-92

DOI: 10.14366/usg.21076 | **PMID:** 34399043 | **PMCID:** PMC8696131

Original paper **Liver** *ATI*

Usefulness of US attenuation imaging for the detection and severity grading of hepatic steatosis in routine abdominal ultrasonography

Kwon EY, Kim YR, Kang DM, Yoon KH, Lee YH

Clin Imaging. 2021;76:53-59

DOI: 10.1016/j.clinimag.2021.01.034 | **PMID:** 33549920

Original paper **Liver** *ATI*

Performance of the Attenuation Imaging Technology in the Detection of Liver Steatosis

Ferraioli G, Maiocchi L, Savietto G, Tinelli C, Nichetti M, Rondanelli M, Calliada F, Preda L, Filice C

J Ultrasound Med. 2021;40(7):1325-1332

DOI: 10.1002/jum.15512 | **PMID:** 32960457 | **PMCID:** PMC8246860

Original paper **Liver** *ATI*

Reproducibility of ultrasound attenuation imaging for the noninvasive evaluation of hepatic steatosis

Yoo J, Lee JM, Joo I, Lee DH, Yoon JH, Kang HJ, Ahn SJ

Ultrasonography. 2020;39(2):121-129

DOI: 10.14366/usg.19034 | **PMID:** 31693842 | **PMCID:** PMC7065988

Original paper **Liver** *ATI*

Attenuation Imaging with Ultrasound as a Novel Evaluation Method for Liver Steatosis

Hsu PK, Wu LS, Yen HH, Huang HP, Chen YY, Su PY, Su WW
J Clin Med. 2021;10(5):965

DOI: 10.3390/jcm10050965 | **PMID:** 33801163 | **PMCID:** PMC7957732

Original paper **Liver** *ATI*

Ultrasound-Based Attenuation Imaging for the Non-Invasive Quantification of Liver Fat – A Pilot Study on Feasibility and Inter-Observer Variability

Jesper D, Klett D, Schellhaas B, Pfeifer L, Leppkes M, Waldner M, Neurath MF, Strobel D
IEEE J Transl Eng Health Med. 2020;8:1800409

DOI: 10.1109/JTEHM.2020.3001488 | **PMID:** 32617199 | **PMCID:** PMC7326151

Original paper **Liver** *ATI*

Quantification of hepatic steatosis with ultrasound: promising role of attenuation imaging coefficient in a biopsy-proven cohort

Dioguardi Burgio M, Ronot M, Reizine E, Rautou PE, Castera L, Paradis V, Garteiser P, Van Beers B, Vilgrain V
Eur Radiol. 2020;30(4):2293–2301

DOI: 10.1007/s00330-019-06480-6 | **PMID:** 31822978

Original paper **Liver** *ATI*

Detection of Liver Steatosis with a Novel Ultrasound-Based Technique: A Pilot Study Using MRI-Derived Proton Density Fat Fraction as the Gold Standard

Ferraioli G, Maiocchi L, Raciti MV, Tinelli C, De Silvestri A, Nichetti M, De Cata P, Rondanelli M, Chiovato L, Calliada F, Filice C
Clin Transl Gastroenterol. 2019;10(10):e00081

DOI: 10.14309/ctg.0000000000000081 | **PMID:** 31609745 | **PMCID:** PMC6884349

Review article **Liver** *ATI*

Ultrasound-based techniques for the diagnosis of liver steatosis

Ferraioli G, Soares Monteiro LB

World J Gastroenterol. 2019;25(40):6053-6062

DOI: 10.3748/wjg.v25.i40.6053 | **PMID:** 31686762 | **PMCID:** PMC6824276

Original paper **Liver** *ATI*

Usefulness of Attenuation Imaging with an Ultrasound Scanner for the Evaluation of Hepatic Steatosis

Tada T, Iijima H, Kobayashi N, Yoshida M, Nishimura T, Kumada T, Kondo R, Yano H, Kage M, Nakano C, Aoki T, Aizawa N, Ikeda N, Takashima T, Yuri Y, Ishii N, Hasegawa K, Takata R, Yoh K, Sakai Y, Nishikawa H, Iwata Y, Enomoto H, Hirota S, Fujimoto J, Nishiguchi S

Ultrasound Med Biol. 2019;45(10):2679-2687.

DOI: 10.1016/j.ultrasmedbio.2019.05.033 | **PMID:** 31277922

Original paper **Liver** *ATI*

Assessment of hepatic steatosis by using attenuation imaging: a quantitative, easy-to-perform ultrasound technique

Bae JS, Lee DH, Lee JY, Kim H, Yu SJ, Lee JH, Cho EJ, Lee YB, Han JK, Choi BI

Eur Radiol. 2019;29(12):6499–6507

DOI: 10.1007/s00330-019-06272-y | **PMID:** 31175413

Original paper **Liver** *ATI*

Prospective Evaluation of Hepatic Steatosis Using Ultrasound Attenuation Imaging in Patients with Chronic Liver Disease with Magnetic Resonance Imaging Proton Density Fat Fraction as the Reference Standard

Jeon SK, Lee JM, Joo I, Yoon JH, Lee DH, Lee JY, Han JK

Ultrasound Med Biol. 2019;45(6):1407-1416

DOI: 10.1016/j.ultrasmedbio.2019.02.008 | **PMID:** 30975533

Original paper **Liver** *ATI*

Hepatic steatosis: Ultrasound assessment using attenuation imaging (ATI) with liver biopsy correlation

Welman CJ, Saunders J, Zelesco M, Abbott S, Boardman G, Ayonrinde OT
J Med Imaging Radiat Oncol. 2022;:online ahead of print

DOI: 10.1111/1754-9485.13412 | **PMID:** 35466506

Original paper **Liver** *SWE*

Clinical relevance of Shear Wave Elastography compared with Transient Elastography and other markers of liver fibrosis

Ayonrinde OT, Zelesco M, Welman CJ, Abbott S, Adris N
Intern Med J. 2021. online ahead of print

DOI: 10.1111/imj.15603 | **PMID:** 34726820

Original paper **Liver** *SWE*

Methodological Study to Investigate the Potential of Ultrasound-Based Elastography and Texture as Biomarkers to Monitor Liver Tumors

Moalla S, Girot C, Franchi-Abella S, Ammari S, Balleyguier C, Lassau N, Pitre-Champagnat S
Diagnostics. 2020;10(10):811

DOI: 10.3390/diagnostics10100811 | **PMID:** 33066135 | **PMCID:** PMC7602000

Review article **Liver** *SWE*

Advances in ultrasound elastography for nonalcoholic fatty liver disease

Yoneda, M, Honda, Y, Nogami, A, Imajo K, Nakajima A
J Med Ultrason. 2020;47(4):521-533

DOI: 10.1007/s10396-020-01040-8 | **PMID:** 32748075

Original paper **Liver** *SWE*

Risk stratification of patients with nonalcoholic fatty liver disease using a case identification pathway in primary care: a cross-sectional study

Shaheen AA, Riazi K, Medellin A, Bhayana D, Kaplan GG, Jiang J, Park R, Schaufert W, Burak KW, Sargious M, Swain MG

CMAJ Open. 2020;8(2):E370-E376

DOI: 10.9778/cmajo.20200009 | **PMID:** 32414883 | **PMCID:** PMC7239637

Original paper **Liver (animal model)** *SWE*

Two-dimensional Shear Wave Elastography with Propagation Maps for the Assessment of Liver Fibrosis and Clinically Significant Portal Hypertension in Patients with Chronic Liver Disease: A Prospective Study

Jeon SK, Lee JM, Joo I, Yoon JH, Lee DH, Han JK

Acad Radiol. 2020;27(6):798-806

DOI: 10.1016/j.acra.2019.08.006 | **PMID:** 31494001

Original paper **Liver** *SWE*

Clinical Implications of Hepatic Hemodynamic Evaluation by Abdominal Ultrasonographic Imaging in Patients With Heart Failure

Yoshihisa A, Ishibashi S, Matsuda M, Yamadera Y, Ichijo Y, Sato Y, Yokokawa T, Misaka T, Oikawa M, Kobayashi A, Yamaki T, Kunii H, Takeishi Y

J Am Heart Assoc. 2020;9(15):e016689

DOI: 10.1161/JAHA.120.016689 | **PMID:** 32750309 | **PMCID:** PMC7792279

Book chapter **Liver** *SWE*

Ultrasound Imaging for the Diagnosis of Liver Cirrhosis

Iijima H

The Evolving Landscape of Liver Cirrhosis Management. Springer, Singapore, 2019

DOI: 10.1007/978-981-13-7979-6_3

Multicenter study **Liver** *SWE*

Comparison of liver stiffness measurements by a 2D-shear wave technique and transient elastography: results from a European prospective multi-centre study

Ronot M, Ferraioli G, Müller HP, Friedrich-Rust M, Filice C, Vilgrain V, Cosgrove D, Lim AK

Eur Radiol. 2021;31:1578–1587

DOI: 10.1007/s00330-020-07212-x | **PMID:** 32902745

Original paper **Liver** *SWE*

Repeatability and Agreement of Shear Wave Speed Measurements in Phantoms and Human Livers Across 6 Ultrasound 2-Dimensional Shear Wave Elastography Systems

Gilligan LA, Trout AT, Bennett P, Dillman JR

Invest Radiol. 2020;55(4):191-199

DOI: 10.1097/rli.0000000000000627 | **PMID:** 31977604

Review article **Liver** *SWE*

Non-invasive imaging biomarkers to assess nonalcoholic fatty liver disease: A review

Trujillo MJ, Chen J, Rubin JM, Gao J

Clin Imaging. 2021;78:22-34

DOI: 10.1016/j.clinimag.2021.02.039 | **PMID:** 33721575

Original paper **Liver** *SWE*

Intra-System Reliability Assessment of 2-Dimensional Shear Wave Elastography

Edwards C, Cavanagh E, Kumar S, Clifton V, Fontanarosa D

Appl Sci. 2021;11(7):2992

DOI: 10.3390/app11072992

Original paper **Liver** *SWE*

2D shear wave elastography is better than transient elastography in predicting post-hepatectomy complication after resection

Lee DH, Lee ES, Bae JS, Lee JY, Han JK, Yi NJ, Lee KW, Suh KS, Kim H, Lee KB, Choi BI

Eur Radiol. 2021;31:5802–5811

DOI: 10.1007/s00330-020-07662-3 | **PMID:** 33459859

Original paper **Liver (animal model)** *SWE*

Test-retest repeatability of ultrasonographic shear wave elastography in a rat liver fibrosis model: toward a quantitative biomarker for preclinical trials

Shin Y, Huh J, Ham SJ, Cho YC, Choi Y, Woo DC, Lee J, Kim KW

Ultrasonography. 2021;40(1):126-135

DOI: 10.14366/usg.19088 | **PMID:** 32580267 | **PMCID:** PMC7758098

Original paper **Liver** *SWE*

Two-Dimensional-Shear Wave Elastography with a Propagation Map: Prospective Evaluation of Liver Fibrosis Using Histopathology as the Reference Standard

Lee DH, Lee ES, Lee JY, Bae JS, Kim H, Lee KB, Yu SJ, Cho EJ, Lee JH, Cho YY, Han JK, Choi BI

Korean J Radiol. 2020;21(12):1317-1325

DOI: 10.3348/kjr.2019.0978 | **PMID:** 32729274 | **PMCID:** PMC7689142

Original paper **Liver** *SWD*

Preliminary Clinical Experience with Shear Wave Dispersion Imaging for Liver Viscosity in Preoperative Diagnosis of Focal Liver Lesions

Dong Y, Qiu Y, Zhang Q, Yang D, Yu L, Wang WP, Dietrich CF

Z Gastroenterol. 2020;58(9):847-854

DOI: 10.1055/a-1217-7465 | **PMID:** 32947630

Original paper **Liver** *SWD*

Shear Wave Dispersion Predicts Liver Fibrosis and Adverse Outcomes in Patients with Heart Failure

Ohara H, Yoshihisa A, Ishibashi S, Matsuda M, Yamadera Y, Sugawara Y, Ichijo Y, Hotsuki Y, Watanabe K, Anzai F, Sato Y, Kimishima Y, Yokokawa T, Misaka T, Sato T, Oikawa M, Kobayashi A, Takeishi Y

J Clin Med. 2020;9(12):3953

DOI: 10.3390/jcm9123953 | **PMID:** 33291248 | **PMCID:** PMC7762121

Original paper **Liver** *SWD*

Prospective Validation of Repeatability of Shear Wave Dispersion Imaging for Evaluation of Non-alcoholic Fatty Liver Disease

Yoo J, Lee JM, Joo I, Lee DH, Yoon JH, Kang HJ, Ahn SJ

Ultrasound Med Biol. 2019;45(10):2688-2696

DOI: 10.1016/j.ultrasmedbio.2019.06.411 | **PMID:** 31320150

Original paper **Liver** *SMI*

Superb microvascular imaging technology of ultrasound examinations for the evaluation of tumor vascularity in hepatic hemangiomas

Jeon SK, Lee JY, Han JK

Ultrasonography. 2021;40(4):538-545

DOI: 10.14366/usg.20177 | **PMID:** 33866773 | **PMCID:** PMC8446495

Original paper **Liver** *SMI*

The Value of Superb Microvascular Imaging in Detecting Hepatic Artery Occlusion in Liver Transplantation: A Preliminary Study

Güven F, Karaca L, Ogul H, Sade R, Öztürk G, Kantarci M

Ultrasound Q. 2019;35(4):325-329

DOI: 10.1097/ruq.0000000000000416 | **PMID:** 30601438

Original paper **Liver** *SMI*

Comparison of superb microvascular imaging to conventional color Doppler ultrasonography in depicting renal cortical microvasculature

Jing G, Thai A, Erpelding T

Clin Imaging. 2019;58:90-95

DOI: 10.1016/j.clinimag.2019.06.011 | **PMID:** 31284178

Original paper **Liver** *SMI, CEUS*

Comparison of Super-Resolution US and Contrast Material-enhanced US in Detection of the Spoke Wheel Sign in Patients with Focal Nodular Hyperplasia

Kang TW, Jeong WK, Kim YY, Min JH, Kim YK, Kim SH, Sinn DH, Kim K

Radiology. 2021;298(1):82-90

DOI: 10.1148/radiol.2020200885 | **PMID:** 33107798

Original paper **Liver** *CEUS, CVI*

Diagnostic Value of High Frame Rate Contrast-enhanced Ultrasonography and Post-processing Contrast Vector Imaging for Evaluation of Focal Liver Lesions: A Feasibility Study

Yoo J, Lee JM

Ultrasound Med Biol. 2020;46(9):2254-2264

DOI: 10.1016/j.ultrasmedbio.2020.05.001 | **PMID:** 32546409

Original paper **Liver** *CEUS, Intervention*

Evaluation of the use of intraoperative real-time virtual sonography with Sonazoid enhancement for detecting small liver metastatic lesions after chemotherapy in hepatic resection

Araki K, Harimoto N, Muranushi R, Hoshino K, Hagiwara K, Yamanaka T, Ishii N, Tsukagoshi M, Igarashi T, Watanabe A, Kubo N, Shirabe K

J Med Invest. 2019;66(3.4):319-323

DOI: 10.2152/jmi.66.319 | **PMID:** 31656297

Original paper **Liver** *CEUS*

Usefulness of Modified CEUS LI-RADS for the Diagnosis of Hepatocellular Carcinoma Using Sonazoid

Sugimoto K, Kakegawa T, Takahashi H, Tomita Y, Abe M, Yoshimasu Y, Takeuchi H, Kasai Y, Itoi T

Diagnostics. 2020;10(10):828.

DOI: 10.3390/diagnostics10100828 | **PMID:** 33076435 | **PMCID:** PMC7602639

Original paper **Liver** *CEUS*

Contrast-enhanced ultrasound can guide the therapeutic strategy by improving the detection of colorectal liver metastases

Sawatzki M, Güller U, Güsewell S, Husarik DB, Semela D, Brand S

J Hepatol. 2021;74(2):419-427

DOI: 10.1016/j.jhep.2020.09.036 | **PMID:** 33065168

Original paper **Liver** *CEUS*

Value of contrast-enhanced ultrasound (CEUS) in Focal Liver Lesions (FLL) with inconclusive findings on cross-sectional imaging

Auer TA, Fischer T, Garcia SRM, Penzkofer T, Jung EM, Hamm B, Lerchbaumer MH

Clin Hemorheol Microcirc. 2020;74(3):327-339

DOI: 10.3233/CH-190718 | **PMID:** 31658052

Original paper **Liver** *NLV*

Quantitative Assessment of Fatty Liver using Ultrasound with Normalized Local Variance Technique

Bae JS, Lee DH, Lee JY, Kim H, Yu SJ, Lee JH, Cho EJ, Lee YB, Han JK, Choi BI

Ultraschall Med. 2021;42(6):599-606

DOI: 10.1055/a-1143-3091 | **PMID:** 32323278

Original paper **Liver (animal model)** *NLV*

Quantitative Evaluation of Hepatic Steatosis Using Normalized Local Variance in a Rat Model: Comparison with Histopathology as the Reference Standard

Bae JS, Lee JY, Lee DH, Kim H, Lee Y, Han JK

Korean J Radiol. 2019;20(9):1399-1407

DOI: 10.3348/kjr.2019.0068 | **PMID:** 31464118 | **PMCID:** PMC6715566

Original paper **Liver** *Intervention*

Impact of an ultrasound-guided radiofrequency ablation training program on the outcomes in patients with hepatocellular carcinoma

Takamatsu RT, Okano A, Yamakawa G, Mizukoshi K, Obayashi H, Ohana M

Diagn Interv Imaging. 2019;100(12):771-780

DOI: 10.1016/j.diii.2019.08.004 | **PMID:** 31477516

Original paper **Spleen (animal model)** *SWE, SWD*

Elucidation of spleen elasticity and viscosity in a carbon tetrachloride rat model of liver cirrhosis using a new ultrasound elastography

Furuichi Y, Sugimoto K, Oshiro H, Abe M, Takeuchi H, Yoshimasu Y, Itoi T

J Med Ultrason. 2021;48(4):431-437

DOI: 10.1007/s10396-021-01110-5 | **PMID:** 34185192

Original paper **Spleen** *CEUS*

Vascular pattern and diagnostic accuracy of contrast-enhanced ultrasound (CEUS) in spleen alterations

Lerchbaumer MH, Kleemann T, Jung EM, Nagel S, Hamm B, Fischer T

Clin Hemorheol Microcirc. 2020;75(2):177-188

DOI: 10.3233/ch-190758 | **PMID:** 31929153

Original paper **Pancreas** *SWE, SWD*

An initial trial of quantitative evaluation of autoimmune pancreatitis using shear wave elastography and shear wave dispersion in transabdominal ultrasound

Suzuki H, Ishikawa T, Ohno E, Iida T, Uetsuki K, Yashika J, Yamada K, Yoshikawa M, Furukawa K, Nakamura M, Honda T, Ishigami M, Kawashima H, Fujishiro M

Pancreatology. 2021;21(4):682-687

DOI: 10.1016/j.pan.2021.02.014 | **PMID:** 33648879

Original paper **Pancreas** *SWE, SWD*

What is the role of measuring shear wave dispersion using shear wave elastography in pancreatic parenchyma?

Suzuki H, Kawashima H, Ohno E, Ishikawa T, Hashimoto S, Nakamura M, Miyahara R, Ishigami M, Hirooka Y, Fujishiro M

J Med Ultrason. 2020;47:575–581

DOI: 10.1007/s10396-020-01033-7 | **PMID:** 32602019

Case report **Pancreas** *Miscellaneous*

Mucinous cystic neoplasm of the pancreas assessed with a real-time three-dimensional imaging using a transesophageal echocardiography probe

Ishikawa T, Hirooka Y, Kawashima H, Ohno E, Fujishiro M

Clin J Gastroenterol. 2019;12(5):479–483

DOI: 10.1007/s12328-019-00975-x | **PMID:** 30941638

Original paper **Bowel** *Miscellaneous*

Validation of US evaluation of ulcerative colitis activity

Omotehara S, Nishida M, Kinoshita K, Onishi R, Onodera A, Suya M, Hasegawa T, Mitsumori D, Katsurada T, Teshima T

Ultrasound Med Biol. 2019;45(7):1537-1544

DOI: 10.1016/j.ultrasmedbio.2019.02.018 | **PMID:** 30987912

Original paper **Bowel** *SWE, SWD*

Evaluation of ulcerative colitis activity using transabdominal ultrasound shear wave elastography

Yamada K, Ishikawa T, Kawashima H, Ohno E, Iida T, Ishikawa E, Mizutani Y, Sawada T, Maeda K, Yamamura T, Kakushima N, Furukawa K, Nakamura M, Ishigami M, Fujishiro M

Quant Imaging Med Surg. 2022;12(1):618-626

DOI: 10.21037/qims-21-403 | **PMID:** 34993106 | **PMCID:** PMC8666736

Genitourinary imaging

Multicenter study **Renal** *CEUS*

Contrast-enhanced ultrasound (CEUS) of cystic renal lesions in comparison to CT and MRI in a multicenter setting

Lerchbaumer MH, Putz FJ, Rübenthaler J, Rogasch J, Jung EM, Clevert DA, Hamm B, Makowski M, Fischer T

Clin Hemorheol Microcirc. 2020;75(4):419-429

DOI: 10.3233/CH-190764 | **PMID:** 32039837

Original paper **Renal** *CEUS*

Contrast-enhanced ultrasound (CEUS) reliably rules out neoplasm in developmental renal pseudotumor

Spiesecke P, Fischer T, Maxeiner A, Hamm B, Lerchbaumer MH

Acta Radiol. 2021;62(6):821-829

DOI: 10.1177/0284185120939291 | **PMID:** 32631079

Original paper **Renal** *SMI*

Superb Microvascular Imaging Improves Detection of Vascularity in Indeterminate Renal Masses

Leong JY, Wessner CE, Kramer MR, Forsberg F, Halpern EJ, Lyshchik A, Torkzaban M, Morris A, Byrne K, VanMeter M, Trabulsi EJ, Lallas CD, Eisenbrey JR

J Ultrasound Med. 2020;39(10):1947-1955

DOI: 10.1002/jum.15299 | **PMID:** 32309889

Original paper **Urethal** *SWE, CEUS*

Contrast-Enhanced Ultrasound and Shear Wave Elastography: Novel Methods for the Evaluation of Urethral Stricture Disease

Chung PH, Leong JY, Machado P, Wessner CE, Trabulsi EJ, Halpern EJ, Eisenbrey JR, Forsberg F

J Urol. 2022;207(1):152-160

DOI: 10.1097/JU.0000000000002146 | **PMID:** 34428090

Original paper **Prostatic** *SMI, SWE, Intervention*

Impact of a novel ultrasound microvascular imaging and elastography on prostate cancer classification

Shen TT, Xue JL

Transl Androl Urol. 2019;8(6):696-702

DOI: 10.21037/tau.2019.11.15 | **PMID:** 32038966 | **PMCID:** PMC6987601

Topic paper **Prostatic** *SMI, Intervention*

Advanced ultrasound in the diagnosis of prostate cancer

Correas JM, Halpern EJ, Barr RG, Ghai S, Walz J, Bodard S, Dariane C, de la Rosette J

World J Urol. 2021;39(3):661–676

DOI: 10.1007/s00345-020-03193-0 | **PMID:** 32306060

Original paper **Prostatic** *Intervention*

Additive Value of Transrectal Systematic Ventral Biopsies in Combination with Magnet Resonance Imaging/Ultrasound Fusion-Guided Biopsy in Patients with 3 or More Negative Prostate Biopsies

Maxeiner A, Nest AM, Stephan C, Cash H, Baur ADJ, Fischer T, Kilic E, Piper SK, Nowak CP, Busch J, Miller K, Mang J

Urol Int. 2020;104(3-4):205-213

DOI: 10.1159/000504266 | **PMID:** 31801153

Original paper **Scrotal** *CEUS*

Diagnostic performance of contrast-enhanced ultrasound (CEUS) in testicular pathologies: Single-center results

Lerchbaumer MH, Auer TA, Marticorena GS, Stephan C, Hamm B, Jung EM, Fischer T

Clin Hemorheol Microcirc. 2019;73(2):347-357

DOI: 10.3233/CH-190579 | **PMID:** 31156146

General imaging - Other

Original paper **Lymphatic** *33 MHz*

Evaluation of lymphatic vessel diameters in healthy people using lymphatic ultrasound examination

Hara H, Mihara M

J Vasc Surg Venous Lymphat Disord. 2021;online ahead of print.

DOI: 10.1016/j.jvsv.2021.09.007 | **PMID:** 34597838

Original paper **Lymphatic** *33 MHz*

The use of 33 MHz ultra-high-frequency ultrasonography for the evaluation of sweat glands in the axilla with osmidrosis

Shinaoka A, Nakahara R, Saeki M

PLoS One. 2021;16(5):e0251600.

DOI: 10.1371/journal.pone.0251600 | **PMID:** 33984036 | **PMCID:** PMC8118561

Case Report **Lymphatic** *33 MHz*

Comparison of Various Kinds of Probes for Lymphedematous Limbs

Hara H, Mihara M

Plast Reconstr Surg Glob Open. 2021;9(3):e3490

DOI: 10.1097/GOX.0000000000003490 | **PMID:** 33968554 | **PMCID:** PMC8099413

Original paper **Lymphatic** *SWE*

Usefulness of 2-D shear wave elastography for the diagnosis of inguinal lymph node metastasis of malignant melanoma and squamous cell carcinoma

Kawahara Y, Togawa Y, Yamamoto Y, Wakabayashi S, Matsue H, Inafuku K

J. Dermatol. 2020;47(11):1312-1316

DOI: 10.1111/1346-8138.15545 | **PMID:** 32794264 | **PMCID:** PMC7689841

Original paper **Lymphatic** *CEUS*

Real-Time Visualization of Lymphatic Flow to Sentinel Lymph Nodes by Contrast-Enhanced Ultrasonography with Sonazoid in Patients with Breast Cancer

Shimazu K, Miyake T, Tanei T, Naoi Y, Shimoda M, Kagara N, Kim SJ, Noguchi S

Ultrasound Med Biol. 2019;45(10):2634-2640

DOI: 10.1016/j.ultrasmedbio.2019.07.005 | **PMID:** 31371127

Original paper **Lymphatic** *CEUS*

Hookwire-guided Sentinel Lymph Node Biopsy Using Contrast-enhanced Ultrasonography Followed by a One-step Nucleic Acid Amplification (OSNA) Assay for Breast Cancer

Miyake T, Shimazu K, Tanei T, Naoi Y, Kagara N, Shimoda M, Kim SJ, Noguchi S

Anticancer Res. 2019;39(11):6183-6192

DOI: 10.21873/anticanres.13826 | **PMID:** 31704846

Original paper **Lymphatic** *Intervention*

Exclusive use of ultrasound for locating optimal LVA sites – A descriptive data analysis

Czedik-Eysenberg M, Steinbacher J, Obermayer B, Yoshimatsu H, Hara H, Mihara M, Tzou CHJ, Meng S

J Surg Oncol. 2020;121(1):51– 56

DOI: 10.1002/jso.25728 | **PMID:** 31612513

Review article **Multiple** *SMI*

Clinical Applications of Superb Microvascular Imaging in the Liver, Breast, Thyroid, Skeletal Muscle, and Carotid Plaques

Jiang ZZ, Huang YH, Shen HL, Liu XT

J Ultrasound Med. 2019;38(11):2811-2820

DOI: 10.1002/jum.15008 | **PMID:** 30953387

Original paper **Salivary glands** *SMI*

Quantitative Assessment of Salivary Gland Parenchymal Vascularization Using Power Doppler Ultrasound and Superb Microvascular Imaging: A Potential Tool in the Diagnosis of Sjögren's Syndrome

Ustabasioglu FE, Korkmaz S, Ilgen U, Solak S, Kula O, Turan S, Emmungil H

Balkan Med J. 2020;37(4):203-207

DOI: 10.4274/balkanmedj.galenos.2020.2019.11.91 | **PMID:** 32270946

Original paper **Salivary glands** *SMI*

Diagnostic Value of Superb Microvascular Imaging in Parotid Tumors

Zhao L, Mu J, Mao Y, Xin X

Med Sci Monit. 2020;26:e921813

DOI: 10.12659/MSM.921813 | **PMID:** 32507848 | **PMCID:** PMC7297036

Pediatric imaging

Original paper **Liver** *SWE*

Two-dimensional ultrasound shear wave elastography for identifying and staging liver fibrosis in pediatric patients with known or suspected liver disease: a clinical effectiveness study

Alhashmi GH, Gupta A, Trout AT, Dillman JR
Pediatr Radiol. 2020;50(9):1255–1262

DOI: 10.1007/s00247-020-04720-2 | **PMID:** 32588095

Original paper **Liver** *SWE*

Frequency of technical success of two-dimensional ultrasound shear wave elastography in a large pediatric and young adult cohort: a clinical effectiveness study

Northern NA, Dillman JR, Trout AT
Pediatr Radiol. 2019;49(8):1025–1031

DOI: 10.1007/s00247-019-04396-3 | **PMID:** 30949727

Original paper **Liver** *SWE, ATI*

Liver shear wave elastography and attenuation imaging coefficient measures: prospective evaluation in healthy children

Cailloce R, Tavernier E, Brunereau L, Fievet A, Falip C, Dujardin F, Willot S, Patat F, Morel B
Abdom Radiol. 2021;46(10):4629–4636

DOI: 10.1007/s00261-021-02960-w | **PMID:** 34100966

Original paper **Liver** *SWE*

Ultrasound Shear Wave Elastography, Shear Wave Dispersion and Attenuation Imaging of Pediatric Liver Disease with Histological Correlation

Cetinic I, de Lange C, Simrén Y, Ekvall N, Östling M, Stén L, Boström H, Lagerstrand K, Hebelka H
Children 2022; 9(5):692

DOI: 10.3390/children9050692

Report **Liver** *SWE*

Shear Wave Elastography in the Differentiation of Nonfibrotic Versus Fibrotic Liver Disease in Children: A Prospective Study With Histological Correlation

Hebelka H, de Lange C, Boström H, Ekvall N, Lagerstrand K
JPGN Reports. 2022;3(1):e156

DOI: 10.1097/PG9.0000000000000156

Review article **Gastrointestinal** *CEUS*

Advanced Ultrasound Techniques for Pediatric Imaging

Hwang M, Piskunowicz M, Darge K
Pediatrics. 2019;143(3):e20182609

DOI: 10.1542/peds.2018-2609 | **PMID:** 30808770 | **PMCID:** PMC6398363

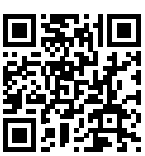
Original paper **Pancreas** *SWE*

Pancreas ultrasound two-dimensional shear wave elastography in healthy children

Qiu L, Trout AT, Bennett PS, Dillman JR
Pediatr Radiol. 2021;51(3):403–409

DOI: 10.1007/s00247-020-04863-2 | **PMID:** 33156431

Original paper **Spleen** *SWE*



Spleen stiffness by 2-D shear wave elastography is the most accurate predictor of high-risk esophagogastric varices in children with biliary atresia

Yokoyama S, Ishigami M, Honda T, Kuzuya T, Ishizu Y, Ito T, Hirooka Y, Tanaka Y, Tainaka T, Shirota C, Chiba K, Uchida H, Fujishiro M
Hepatol Res. 2019;49(10):1162– 1168

DOI: 10.1111/hepr.13381 | **PMID:** 31132304

Original paper **Nerve imaging** *Miscellaneous*

Change in cross-sectional area of the median nerve with age in neonates, infants and children analyzed by high-resolution ultrasound imaging

Jenny C, Lütschg J, Broser PJ

Eur J Paediatr Neurol. 2020;29:137-143

DOI: 10.1016/j.ejpn.2020.07.017 | **PMID:** 32826155

Original paper **UVC placement** *Miscellaneous*

Inadvertent Migration of Umbilical Venous Catheters Often Leads to Malposition

Dubbink-Verheij GH, Visser R, Tan RNGB, Roest AAW, Lopriore E, Te Pas AB

Neonatology. 2019;115(3):205-210

DOI: 10.1159/000494369 | **PMID:** 30645997 | **PMCID:** PMC6518856

Original paper **Thyroid** *SMI*

Superb Microvascular Imaging in the Evaluation of Pediatric Graves Disease and Hashimoto Thyroiditis

Bayramoglu Z, Kandemirli SG, Sari Akyol ZN, Kardelen AD, Poyrazoglu S, Bas F, Darendeliler F, Adaletli I

J Ultrasound Med. 2019;39(5):901-909

DOI: 10.1002/jum.15171 | **PMID:** 31705696

Original paper **Scrotal** *SMI*

Seeing the Unseen: Evaluating Testicular Vascularity in Neonates by Using the Superb Microvascular Imaging Ultrasound Technique

Ayaz E, Ayaz M, Önal C, Yikilmaz A

J Ultrasound Med. 2019;38(7):1847-1854

DOI: 10.1002/jum.14882 | **PMID:** 30548880

Original paper **Neurovascular** *SMI*

Microvessel ultrasound of neonatal brain parenchyma: feasibility, reproducibility, and normal imaging features by superb microvascular imaging (SMI)

Goeral K, Hojreh A, Kasprian G, Klebermass Schrehof K, Weber M, Mitter C, Berger A, Prayer D, Brugger PC, Vergesslich-Rothschild K, Patsch JM

Eur Radiol. 2019;29(4):2127–2136

DOI: 10.1007/s00330-018-5743-1 | **PMID:** 30315420 | **PMCID:** PMC6420458

Original paper **Upper airways** *Miscellaneous*

Pilot Study to Assess the Use of Ultrasound in Evaluating the Abnormal Pediatric Airway

Bell JR, Cohen AP, Graff JT, Fleck RJ, O'Hara S, de Alarcon A, Hart CK

Otolaryngol Head Neck Surg. 2020;162(6):950-953

DOI: 10.1177/0194599820912034 | **PMID:** 32204669

Musculoskeletal ultrasound

Original paper **Upper limb** *SMI*

Characterization of Carpal Tunnel Syndrome using High Frequency Ultrasound Imaging: A Comparison of Ultrasonic Features in the Median Nerve

Nam K, Peterson SM, Wessner CE, Machado P, Forsberg F
IEEE Int Ultrasonics Symp. 2019;:433-1436

DOI: 10.1109/ULTSYM.2019.8926247

Original paper **Upper limb** *SMI*

Carpal tunnel ultrasound: is the "safe zone" on the ulnar side of the median nerve really avascular?

Sergeant AC, Badr S, Saab M, Demondion X, Cotten A, Jacques T
Eur Radiol. 2020;30(2):887-894

DOI: 10.1007/s00330-019-06416-0 | **PMID:** 31468160

Original paper **Upper limb** *SMI*

Comparison of three ultrasonographic examinations on the synovial membrane vascularity of RA patients

Jin X, Li F, Liu H, Wang H, Du J
Phys Eng Sci Med. 2020;43(2):617–622

DOI: 10.1007/s13246-020-00862-7 | **PMID:** 32358664

Original paper **Upper limb** *SMI*

The superb microvascular imaging is more sensitive than conventional power Doppler imaging in detection of active synovitis in patients with rheumatoid arthritis

Lee GY, Kim S, Choi ST, Song JS
Clin Rheumatol. 2019;38(9):2613–2620

DOI: 10.1007/s10067-019-04550-0 | **PMID:** 31030360

Original paper **Upper limb (animal model)** *SMI*

Detection of Increased Vascular Signal in Arthritis-Prone Rats Without Joint Swelling Using Superb Microvascular Imaging Ultrasonography

Horie T, Nishida M, Tanimura S, Kamishima T, Tamai E, Morimura Y, Nishibata Y, Masuda S, Nakazawa D, Tomaru U, Atsumi T, Ishizu A
Ultrasound Med Biol. 2019;45(8):2086-93

DOI: 10.1016/j.ultrasmedbio.2019.04.002 | **PMID:** 31085028

Original paper **Upper limb** *SMI*

Ultrasound Microflow Imaging Technology for Diagnosis of Adhesive Capsulitis of the Shoulder

Kim DH, Choi YH, Oh S, Kim HJ Chai JW
J Ultrasound Med. 2019;39(5):967-976

DOI: 10.1002/jum.15181 | **PMID:** 31782541

Review article **Upper limb** SMI

The prevalence of neovascularity in rotator cuff tendinopathy: comparing conventional Doppler with superb microvascular imaging

Ooi CC, Wong SK, Ma VC, Tan GM, Teng KQ, Mohamed SN, Png MA
Clin Radiol 2022;77(6):e442-e448

DOI: 10.1016/j.crad.2022.03.003 | **PMID:** 35428470

Original paper **Upper limb** *SMI, SWE*

Diagnosis of Carpal Tunnel Syndrome using Shear Wave Elastography and High-frequency Ultrasound Imaging

Nam K, Peterson SM, Wessner CE, Machado P, Forsberg F
Acad Radiol. 2021;28(9):e278-e287

DOI: 10.1016/j.acra.2020.08.011 | **PMID:** 32928634

Original paper **Upper limb** *SWE*

Diagnostic Performance of Shear Wave Elastography for Carpal Tunnel Syndrome Combined with High Frequency Ultrasound Imaging

Nam K, Peterson SM, Wessner CE, Machado P, Forsberg F
2020 IEEE International Ultrasonics Symposium (IUS). 2020;:1-4

DOI: 10.1109/IUS46767.2020.9251485

Original paper **Upper limb** *SWE*

Role of shear wave elastography in the evaluation of the treatment and prognosis of supraspinatus tendinitis

Zhou J, Yang DB, Wang J, Li HZ, Wang YC
World J Clin Cases. 2020;8(14):2977-2987

DOI: 10.12998/wjcc.v8.i14.2977 | **PMID:** 32775379 | **PMCID:** PMC7385596

Original paper **Upper limb** *SWE*

Shear-wave elastography of the ulnar collateral ligament of the elbow in healthy volunteers: a pilot study

Gupta N, Labis JS, Harris J, Trakhtenbroit MA, Peterson LE, Jack RA, McCulloch PC
Skeletal Radiol. 2019;48(8):1241–1249

DOI: 10.1007/s00256-019-3162-2 | **PMID:** 30706109

Original paper **Upper limb** *SWE*

Correlation of glenohumeral internal rotation deficit with shear wave ultrasound elastography findings for the posterior inferior shoulder capsule in college baseball players

Park HJ, Jeon JH, Suh DK, Lee CS, Lee JH, Jeong WK
J Shoulder Elbow Surg. 2021;30(7):1588-1595

DOI: 10.1016/j.jse.2020.09.036 | **PMID:** 33144224

Original paper **Upper limb** *Miscellaneous*

Longer Tendon-Bone Distances of the A2 and A4 Annular Pulleys in Experienced High-Level Sport Climbers: Injury or Adaptation?

Iruretagoiena X, De la Fuente J, Rodríguez-López ES, Davila F, Dorronsoro A, Goenaga L, Blasi M
Wilderness Environ Med. 2021;32(4):450-456

DOI: 10.1016/j.wem.2021.07.008 | **PMID:** 34538713

Review article **Upper limb** *Miscellaneous*

Sonographic evaluation of uncommonly assessed upper extremity peripheral nerves: anatomy, technique, and clinical syndromes

Youngner JM, Matsuo K, Grant T, Garg A, Samet J, Omar IM
Skeletal Radiol. 2019;48(1):57–74

DOI: 10.1007/s00256-018-3028-z | **PMID:** 30033506

Letter **Upper limb** *Miscellaneous*

Nerve Fascicle Depiction at MR Microscopy and High-Frequency US with Anatomic Verification

Snoj Z, Sersa I, Maticic U, Cvetko E, Omejec G
Radiology. 2020;297(3):672-674

DOI: 10.1148/radiol.2020201910 | **PMID:** 33048035

Original paper **Lower limb** *SMI*

Reliability and Validity of Ultrasonography for Measurement of Hamstring Muscle and Tendon Cross-Sectional Area

Kositsky A, Gonçalves BA, Stenroth L, Barrett RS, Diamond LE, Saxby DJ
Ultras Med Biol. 2020;46(1):55-63

DOI: 10.1016/j.ultrasmedbio.2019.09.013 | **PMID:** 31668942

Original paper **Lower limb** *SWE*

Evaluation of plantar fasciopathy shear wave elastography: a comparison between patients and healthy subjects

Schillizzi G, Alviti F, D'Ercole C, Elia D, Agostini F, Mangone M, Paoloni M, Bernetti A, Pacini P, Polti G, Minafra P, Cantisani V

J Ultrasound. 2021;24(4):417-422

DOI: 10.1007/s40477-020-00474-7 | **PMID:** 32418168 | **PMCID:** PMC8572281

Original paper **Lower limb** *SWE*

Influence of pennation angle on measurement of shear wave elastography: in vivo observation of shear wave propagation in human pennate muscle

Chino K, Takahashi H

Physiol Meas. 2018;39(11):115003

DOI: 10.1088/1361-6579/aae7e2 | **PMID:** 30398162

Original paper **Lower limb (animal model)** *SWD*

Quantification of Nerve Viscosity Using Shear Wave Dispersion Imaging in Diabetic Rats: A Novel Technique for Evaluating Diabetic Neuropathy

Liu F, Li D, Xin Y, Liu F, Li W, Zhu J

Korean J Radiol. 2022;23(2):237-245

DOI: 10.3348/kjr.2021.0603 | **PMID:** 35029080 | **PMCID:** PMC8814712

Review article **Miscellaneous** *SMI*

Superb microvascular imaging (SMI) in the evaluation of musculoskeletal disorders: a systematic review

Gitto S, Messina C, Chianca V, Tuscano B, Lazzara A, Corazza A, Pedone L, Albano D, Sconfienza LM

Radiol Med. 2020;125(5)481–490

DOI: 10.1007/s11547-020-01141-x | **PMID:** 32020529

Original paper **Miscellaneous** *SWE*

Limitations of Muscle Ultrasound Shear Wave Elastography for Clinical Routine—Positioning and Muscle Selection

Romano A, Staber D, Grimm A, Kronlage C, Marquetand J
Sensors. 2021;21(24):8490

DOI: 10.3390/s21248490 | **PMID:** 34960581 | **PMCID:** PMC8706081

Original paper **Miscellaneous** *SWE*

Muscle Ultrasound Shear Wave Elastography as a Non-Invasive Biomarker in Myotonia

Kronlage C, Grimm A, Romano A, Stahl JH, Martin P, Winter N, Marquetand J
Diagnostics. 2021;11(2):163

DOI: 10.3390/diagnostics11020163 | **PMID:** 33498617 | **PMCID:** PMC7911703

Original paper **Miscellaneous (animal model)** *SWE, SWD*

Developing an in-vivo physiological porcine model of inducing acute atraumatic compartment syndrome towards a non-invasive diagnosis using shear wave elastography

Kang JW, Park JW, Lim TH, Kim KT, Lee SJ
Sci Rep. 2021;11(1):21891

DOI: 10.1038/s41598-021-01405-0 | **PMID:** 34750470 | **PMCID:** PMC8576040

Original paper **Miscellaneous** *Interventional*

Application of ultrasound fusion imaging technique for unilateral percutaneous vertebroplasty in treatment of osteoporotic thoracolumbar compression fracture

Li S, Mi S, Guo R, Ma X, Han M
J Xray Sci Technol. 2020;28(1):171-183

DOI: 10.3233/XST-190563 | **PMID:** 31815726

Clinical utility and potential of ultrasound in osteoarthritis

Okano T, Mamoto K, Di Carlo M, Salaffi F

Radiol Med. 2019;124(11):1101–11

DOI: 10.1007/s11547-019-01013-z | **PMID:** 30828773

Women's Health imaging

Original paper **Breast** *SWE, SMI*

Combination of Quantitative Parameters of Shear Wave Elastography and Superb Microvascular Imaging to Evaluate Breast Masses

Lee EJ, Chang YW
Korean J Radiol. 2020;21(9):1045-54

DOI: 10.3348/kjr.2019.0765 | **PMID:** 32691540 | **PMCID:** PMC7371619

Original paper **Breast** *SWE, SMI*

Combined use of strain elastography and superb microvascular imaging with grayscale ultrasound according to the BI-RADS classification for differentiating benign from malignant solid breast masses

Liang M, Ou B, Wu J, Xiao X, Ruan J, Tian J, Xu X, Wang B, Yang H, Luo B
Clin Hemorheol Microcirc 2020;74(4):391-403

DOI: 10.3233/ch-190693 | **PMID:** 31683470

Original paper **Breast** *SMI, CEUS*

A Prospective Study on the Value of Ultrasound Microflow Assessment to Distinguish Malignant from Benign Solid Breast Masses: Association between Ultrasound Parameters and Histologic Microvessel Densities

Park AY, Kwon M, Woo OH, Cho KR, Park EK, Cha SH, Song SE, Lee JH, Cha J, Son GS, Seo BK
Korean J Radiol. 2019;20(5):759-772

DOI: 10.3348/kjr.2018.0515 | **PMID:** 30993927 | **PMCID:** PMC6470080

Original paper **Breast** *SMI, CEUS*

Radiogenomic Analysis of Breast Cancer by Using B-Mode and Vascular US and RNA Sequencing

Park AY, Han MR, Park KH, Kim JS, Son GS, Lee HY, Chang YW, Park EK, Cha SH, Cho Y, Hong H, Cho KR, Song SE, Woo OH, Lee JH, Cha J, Seo BK
Radiology. 2020;295(1):24-34

DOI: 10.1148/radiol.2020191368 | **PMID:** 32013793

Original paper **Breast** *SWE*

What shear wave elastography parameter best differentiates breast cancer and predicts its histologic aggressiveness?

Kim H, Lee J, Kang BJ, Kim SH

Ultrasonography. 2021;40(2):265-273

DOI: 10.14366/usg.20007 | **PMID:** 32660207 | **PMCID:** PMC7994732

Original paper **Breast** *SWE*

Tumor stiffness measured by shear wave elastography correlates with tumor hypoxia as well as histologic biomarkers in breast cancer

Yoo J, Seo BK, Park EK, Kwon M, Jeong H, Cho KR, Woo OH, Song SE, Cha J

Cancer Imaging. 2020;20(1):85

DOI: 10.1186/s40644-020-00362-7 | **PMID:** 33256820 | **PMCID:** PMC7706221

Original paper **Breast** *SWE*

US-Elastography for Breast Lesion Characterization: Prospective Comparison of US BIRADS, Strain Elastography and Shear wave Elastography

Cantisani V, David E, Barr RG, Radzina M, de Soccio V, Elia D, De Felice C, Pediconi F, Gigli S, Occhiato R, Messineo D, Fresilli D, Ballesio L, D'Ambrosio F

Ultraschall Med. 2021;42(05):533-540

DOI: 10.1055/a-1134-4937 | **PMID:** 32330993

Original paper **Breast** *SWE*

Can strain US-elastography with strain ratio (SRE) improve the diagnostic accuracy in the assessment of breast lesions?

Elia D, Fresilli D, Pacini P, Cardaccio S, Polti G, Guiban O, Celletti I, Kutrolli E, De Felice C, Occhiato R, De Vito C, Amabile MI, De Luca A, D'Andrea V, Vergine M, Pediconi F, D'Ambrosio F, Cantisani V

J Ultrasound. 2021;24(2):157–163

DOI: 10.1007/s40477-020-00505-3 | **PMID:** 32651770 | **PMCID:** PMC8137748

Letter **Breast** *SMI*

A comparative study on superb microvascular imaging and conventional ultrasonography in differentiating BI-RADS 4 breast lesions

Zhu YC, Zu DM, Zhang Y, Shan J, Shi XR, Deng SH, Jiang Q
Oncol Lett. 2019;18(3):3202-3210

DOI: 10.3892/ol.2019.10603 | **PMID:** 31452797 | **PMCID:** PMC6676576

Original paper **Breast** *SMI*

Evaluation of plasma cell mastitis with superb microvascular imaging

Zhu YC, Zhang Y, Deng SH, Jiang Q, Sh XR, Feng LL
Clin Hemorheol Microcirc. 2019;72(2):129-138

DOI: 10.3233/ch-180468 | **PMID:** 30636730

Original paper **Breast** *SMI*

The Vascular Index of Superb Microvascular Imaging Can Improve the Diagnostic Accuracy for Breast Imaging Reporting and Data System Category 4 Breast Lesions

Cai SM, Wang HY, Zhang XY, Zhang L, Zhu QL, Li JC, Sun Q, Jiang YX
Cancer Manag Res. 2020;12:1819-1826

DOI: 10.2147/CMAR.S242101 | **PMID:** 32210624 | **PMCID:** PMC7073432

Original paper **Breast** *SMI*

Added Value of the Vascular Index on Superb Microvascular Imaging for the Evaluation of Breast Masses: Comparison With Grayscale Ultrasound

Chae EY, Yoon GY, Cha JH, Shin HJ, Choi WJ, Kim HH
J Ultras Med. 2021;40(4):715-723

DOI: 10.1002/jum.15441 | **PMID:** 32815564

Original paper **Breast** *SMI*

Reproducibility and diagnostic performance of the vascular index of superb microvascular imaging in real-time breast ultrasonography for evaluating breast masses

Lee EJ, Chang YW, Oh E, Hwang J, Kim HJ, Hong SS
Ultrasonography. 2021;40(3):398-406

DOI: 10.14366/usg.20153 | **PMID:** 33455154 | **PMCID:** PMC8217793

Review article **Breast** *SMI*

Breast Ultrasound Microvascular Imaging and Radiogenomics

Park AY, Seo BK, Han MR
Korean J Radiol. 2021;22(5):677-687

DOI: 10.3348/kjr.2020.1166 | **PMID:** 33569931 | **PMCID:** PMC8076833

Original paper **Breast** *Miscellaneous*

Usefulness of second-look ultrasonography using anatomical breast structures as indicators for magnetic resonance imaging-detected breast abnormalities

Izumori A, Kokubu Y, Sato K, Gomi N, Morizono H, Sakai T, Horii R, Akiyama F, Iwase T, Ohno S
Breast Cancer. 2020;27(1):129–139

DOI: 10.1007/s12282-019-01003-z | **PMID:** 31407151 | **PMCID:** PMC6954142

Original paper **Breast** *Miscellaneous*

Description of Two Cases of Anaplastic Large Cell Lymphoma Associated with a Breast Implant

Crèvecoeur J, Jossa V, Somja J, Parmentier JC, Nizet JL, Crèvecoeur A
Case Rep Radiol. 2019;:6137198

DOI: 10.1155/2019/6137198 | **PMID:** 31346484 | **PMCID:** PMC6620858

Original paper **Ovary** *Interventional*

Ultrasound-guided targeted biopsies of CT-based radiomic tumour habitats: technical development and initial experience in metastatic ovarian cancer

Beer L, Gonzalez PM, Ortet MD , Reinius M, Rundo L, Woitek R, Ursprung S, Escudero L, Sahin H, Funingana IG, Ang JE et al
Eur Radiol. 2021;31:3765–3772

DOI: 10.1007/s00330-020-07560-8 | **PMID:** 33315123 | **PMCID:** PMC8128813

Original paper **Cervix** *SWE*

Use of shear wave elastography on the maternal cervix to recognize cervical insufficiency using a transabdominal ultrasound approach

O'Hara S, Zelesco M, Sun Z
Australasian J Ultras Med. 2020;24(2):89-98

DOI: 10.1002/ajum.12236 | **PMID:** 34765416 | **PMCID:** PMC8412007

Original paper **Cervix** *SWE*

Shear Wave Elastography of the Maternal Cervix: A Comparison of Transvaginal and Transabdominal Ultrasound Approaches

O'Hara S, Zelesco M, Sun Z
J Ultras Med. 2021;40(4):701-712

DOI: 10.1002/jum.15440 | **PMID:** 32830896

Clinical trial **Cervix** *SWE*

The Comparative Study of Cervical Shear Wave Elastography Between Twin and Singleton Pregnancy

Diawtipsukon S, Bumrungphuet S, Dulyaphat W, Panburana P
Int J Womens Health. 2020;12:649-656

DOI: 10.2147/IJWH.S251522 | **PMID:** 32922090 | **PMCID:** PMC7457743

Original paper **Cervix** *SWE*

Differentiating cervical metastatic lymphadenopathy and lymphoma by shear wave elastography

Chae SY, Jung HN, Ryoo I, Suh S
Sci Rep. 2019;9(1):12396.

DOI: 10.1038/s41598-019-48705-0 | **PMID:** 31455777 | **PMCID:** PMC6712052

Original paper **Cervix** *Imaging Fusion*

Fusion imaging of ultrasound and MRI in the assessment of locally advanced cervical cancer: a prospective study

Moro F, Gui B, Arciuolo D, Bertoldo V, Borzi R, Romeo P, Petta F, Cambi F, Pasciuto T, Zannoni GF, Valentini V, Manfredi R, Scambia G, Testa AC
Int J Gynecol Cancer. 2020;30(4):456-465

DOI: 10.1136/ijgc-2019-000902 | **PMID:** 32193220

Obstetric ultrasound

Letter **Fetal abdominal** *SMI*

Superb microvascular imaging with Doppler luminance using an 18-MHz probe to visualize fetal intra-abdominal blood vessels and organ microvasculature

Hata T, Koyanagi A, Yamanishi T, Bouno S, Takayoshi R, Miyake T
J Perinat Med. 2020;48(2):184–188

DOI: 10.1515/jpm-2019-0411 | **PMID:** 31851618

Original paper **Fetal echo** *WMT*

Deficient Myocardial Organization and Pathological Fibrosis in Fetal Aortic Stenosis-Association of Prenatal Ultrasound with Postmortem Histology

Zwanenburg F, DeRuiter MC, Wisse LJ, van Munsteren CJ, Bartelings MM, Goumans MJ, Ten Harkel ADJ, Jongbloed MRM, Haak MC
J Cardiovasc Dev Dis. 2021;8(10):121

DOI: 10.3390/jcdd8100121 | **PMID:** 34677190 | **PMCID:** PMC8540431

Original paper **Fetal echo** *WMT*

Fetal Speckle-Tracking: Impact of Angle of Insonation and Frame Rate on Global Longitudinal Strain

Semmler J, Day TG, Georgiopoulos G, Garcia-Gonzalez C, Aguilera J, Vigneswaran TV, Zidere V, Miller OI, Sharland G, Charakida M, Simpson JM
J Am Soc Echocardiogr. 2020;33(9):1141-1146.e2

DOI: 10.1016/j.echo.2020.03.013 | **PMID:** 32423727

Original paper **Fetal echo** *WMT*

The assessment of the fetal heart function using two-dimensional speckle tracking with a high frame rate

Ohira A, Hayata K, Mishima S, Tani K, Jota M, Mitsui T, Eto E, Masuyama H
Early Hum Dev. 2020;151:105160

DOI: 10.1016/j.earlhumdev.2020.105160 | **PMID:** 32866674

Original paper **Fetal echo** *Miscellaneous*

Assessment of human fetal cardiac autonomic nervous system development using color tissue Doppler imaging

Zwanenburg F, Jongbloed MRM, van Geloven N, Ten Harkel ADJ, van Lith JMM, Haak MC

Echocardiography. 2021;38(6):974-981

DOI: 10.1111/echo.15094 | **PMID:** 34018638 | **PMCID:** PMC8252470

Original paper **Fetal echo** *MPI*

Cardiac time intervals and myocardial performance index for prediction of twin-twin transfusion syndrome

Gijtenbeek M, Eschbach SJ, Middeldorp JM, Klumper FJCM, Slaghekke F, Oepke D, Haak MC

Prenat Diagn. 2021;41(12):1498-1503

DOI: 10.1002/pd.5981 | **PMID:** 34107089

Case report **Placenta** *SMI*

Sono-embryological assessments of a true knot that developed into a hypercoiled cord and circumvallate placenta

Hasegawa J, Furuya N, Doi M, Sasaki T, Takagi M, Suzuki N

J Matern Fetal Neonatal Med. 2021;34(24):4162-4166

DOI: 10.1080/14767058.2019.1704247 | **PMID:** 31885291

Case report **Placenta** *SMI*

Superb Microvascular Imaging of Retained Placenta with Placenta Accreta Spectrum

Hata T, Hanaoka U, Mori A, Yamamoto K, Tenkumo C, Mori N, Kanenishi K, Tanaka H

Donald School J Ultras Obstet Gynecol 2019;13(3):85–87

DOI: 10.5005/jp-journals-10009-1600

Original paper **Placenta** *SMI*

Characterization of Placental Microvasculature Using Superb Microvascular Imaging

Mack LM, Mastrobattista JM, Gandhi R, Castro EC, Burgess APH, Lee W
J Ultrasound Med. 2019;38(9):2485-2491

DOI: 10.1002/jum.14919 | **PMID:** 30620078

Short report **Placenta** *SMI*

Novel ultrasound assessment of placental pathological function using superb microvascular imaging

Furuya N, Hasegawa J, Homma C, Kawahara T, Iwahata Y, Iwahata H, Kondo H, Doi M, Koike J, Suzuki N
J Matern Fetal Neonatal Med. 2020;22:1-4. online ahead of print

DOI: 10.1080/14767058.2020.1795120 | **PMID:** 32698639

Case report **Placenta** *SMI*

Peculiar blood flow profiles among placental chorionic villous vessels of an abnormally thick placenta in a case of systemic lupus erythematosus characterized using microvascular imaging

Inoue A, Horinouchi T, Yoshizato T, Kojiro-Sanada S, Kozuma Y, Ushijima K
J Obstet Gynaecol Res. 2020;46(12):2684-2690

DOI: 10.1111/jog.14502 | **PMID:** 33047457

Original paper **Placenta** *SWE*

Changes in placental elastography in the third trimester - Analysis using a linear mixed effect model

Edwards C, Cavanagh E, Kumar S, Clifton VL, Borg DJ, Priddle J, Wille ML, Drovandi C, Fontanarosa D
Placenta. 2021;114:83-89

DOI: 10.1016/j.placenta.2021.09.001 | **PMID:** 34500214

Review article | **Placenta** | *SWE*

The use of elastography in placental research - A literature review

Edwards C, Cavanagh E, Kumar S, Clifton V, Fontanarosa D
Placenta. 2020;99:78-88

DOI: 10.1016/j.placenta.2020.07.014 | **PMID:** 32763616

Original paper | **Placenta** | *Miscellaneous*

Placental function and fetal weight are associated with maternal hemodynamic indices in uncomplicated pregnancies at 35-37 weeks gestation

Garcia-Gonzalez C, Abdel-Azim S, Galeva S, Georgiopoulos G, Nicolaides KH, Charakida M
Am J Obstet Gynecol. 2020;222(6):604.e1-e10

DOI: 10.1016/j.ajog.2020.01.011 | **PMID:** 31954157

Case report | **Placenta** | *ATI*

Attenuation imaging as a new ultrasonographic application for identifying placental haematoma

Yamaguchi M, Umazume T, Noshiro K, Watari H
BMJ Case Reports. 2021;14(3):e239287

DOI: 10.1136/bcr-2020-239287 | **PMID:** 33653845 | **PMCID:** PMC7929843

Original paper | **Maternal** | *Miscellaneous*

Maternal cardiac function in gestational diabetes mellitus at 35–36 weeks' gestation and 6 months postpartum

Aguilera J, Sanchez Sierra A, Abdel Azim S, Georgiopoulos G, Nicolaides KH, Charakida, M
Ultrasound Obstet Gynecol. 2020;56(2):247-254

DOI: 10.1002/uog.22118 | **PMID:** 32530101

Original paper **Maternal** *Miscellaneous*

Paired maternal and fetal cardiac functional measurements in women with gestational diabetes mellitus at 35-36 weeks' gestation

Aguilera J, Semmler J, Coronel C, Georgiopoulos G, Simpson J, Nicolaides KH, Charakida M

Am J Obstet Gynecol. 2020;223(4):574.e1-574.e15

DOI:10.1016/j.ajog.2020.04.019 | **PMID:** 32335051

Original paper **Maternal** *Miscellaneous*

Maternal Cardiac Assessment at 35 to 37 Weeks Improves Prediction of Development of Preeclampsia

Garcia-Gonzalez C, Georgiopoulos G, Abdel Azim A, Macaya F, Kametas N, Nihoyannopoulos P, Nicolaides KH, Charakida M

Hypertension. 2020;76(2):514-522

DOI: 10.1161/HYPERTENSIONAHA.120.14643 | **PMID:** 32564692

Echocardiography

Original paper **Congenital heart** *WMT, SWE*

Interplay between right atrial function and liver stiffness in adults with repaired right ventricular outflow obstructive lesions

Li VWY, So EKF, Li W, Chow PC, Cheung YF

Eur Heart J Cardiovasc Imaging. 2021;22(11):1285-1294

DOI: 10.1093/ehjci/jeaa344 | **PMID:** 33367540

Original paper **Congenital heart** *Imaging Fusion*

Usefulness of cardiac fusion imaging with computed tomography and Doppler echocardiography in the assessment of conduit stenosis in complex adult congenital heart disease

Watanabe N, Toh N, Takaya Y, Nakayama R, Yokohama F, Osawa K, Miyoshi T, Akagi T, Kanazawa S, Ito H

J Cardiol. 2021;78(6):473-479

DOI: 10.1016/j.jjcc.2021.06.008 | **PMID:** 34266716

Review article **Congenital heart** *Imaging Fusion*

Evolution of echocardiography in adult congenital heart disease: from pulsed-wave Doppler to fusion imaging

Toh N, Akagi T, Kasahara S, Ito H

J Echocardiogr. 2021;19(4):205-211

DOI: 10.1007/s12574-021-00533-w | **PMID:** 34047950

Case report **LV function** *WMT, Imaging Fusion*

Cardiac hybrid imaging combining 3D-strain echocardiography with coronary computed tomography angiography

Pazhenkottil AP, Tanner FC, Buechel RR, Giannopoulos AA, Kaufmann PA, Zuber M

Eur Heart J. 2019;40(4):395-396

DOI: 10.1093/eurheartj/ehy700 | **PMID:** 30380027

Original paper **LV function** *WMT*

Accuracy and reliability of novel semi-automated two-dimensional layer specific speckle tracking software for quantifying left ventricular volumes and function

Kitano T, Nabeshima Y, Abe Y, Otsuji Y, Takeuchi M

PLoS ONE. 2019;14(8):e0221204

DOI: 10.1371/journal.pone.0221204 | **PMID:** 31469858 | **PMCID:** PMC6716624

Original paper **LV function** *WMT*

Characterisation of LV myocardial exercise function by 2-D strain deformation imaging in elite adolescent footballers

Pieles GE, Gowing L, Ryding D, Perry D, McNally SR, Stuart AG, Williams CA

Eur J Appl Physiol. 2021;121(1):239-250

DOI: 10.1007/s00421-020-04510-6 | **PMID:** 33030575 | **PMCID:** PMC7815563

Comperative **LV function** *GLS*

Head-to-Head Comparison of Global Longitudinal Strain Measurements among Nine Different Vendors: The EACVI/ASE Inter-Vendor Comparison Study

Farsalinos KE, Daraban AM, Ünlü S, Thomas JD, Badano LP, Voigt JU

J Am Soc Echocardiogr. 2015;28(10):1171-1181.e2

DOI: 10.1016/j.echo.2015.06.011 | **PMID:** 26209911

Comperative **LV function** *GLS*

Comparison of Feasibility, Accuracy, and Reproducibility of Layer-Specific Global Longitudinal Strain Measurements Among Five Different Vendors: A Report from the EACVI-ASE Strain Standardization Task Force

Ünlü S, Mirea O, Duchenne J, Pagourelias ED, Bézy S, Thomas JD, Badano LP, Voigt JU

J Am Soc Echocardiogr. 2018;31(3):374-380.e1

DOI: 10.1016/j.echo.2017.11.008 | **PMID:** 29246512

Original paper **LV function** *Miscellaneous*

Altered Left Ventricular Geometry and Torsional Mechanics in High Altitude-Induced Pulmonary Hypertension: A Three-Dimensional Echocardiographic Study

De Boeck BW, Toma A, Kiencke S, Dehnert C, Zügel S, Siebenmann C, Auinger K, Buser PT, Maggiorini M, Kaufmann BA

J Am Soc Echocardiogr. 2018;31(3):314-322

DOI: 10.1016/j.echo.2017.12.001 | **PMID:** 29306544

Original paper **Coronary** *Miscellaneous*

Access-site complications of transradial percutaneous coronary intervention using sheathless guiding catheters for acute coronary syndrome: a prospective cohort study with radial ultrasound follow-up

Isawa T, Horie K, Taguri M, Ootomo T

Cardiovasc Interv Ther. 2020;35(4):343-352

DOI: 10.1007/s12928-019-00632-7 | **PMID:** 31811600

Original paper **RV function (animal model)** *SWE, SWD*

Efficacy of shear wave elastography for evaluating right ventricular myocardial fibrosis in monocrotaline-induced pulmonary hypertension rats

Nakayama R, Takaya Y, Nakamura K, Kondo M, Kobayashi K, Ohno Y, Amioka N, Akagi S, Yoshida M, Miyoshi T, Ito H

J Cardiol. 2021;78(1):17-23

DOI: 10.1016/j.jjcc.2021.01.015 | **PMID:** 33568315

Vascular imaging

Original paper **Carotid** *SMI, CEUS*

Differential value of intima thickness in ischaemic stroke due to large-artery atherosclerosis and small-vessel occlusion

Jin S, Zhang C, Zhang Y, Jia G, Zhang M, Xu M

J Cell Mol Med. 2021;25(19):9427-9433

DOI: 10.1111/jcmm.16884 | **PMID:** 34459107 | **PMCID:** PMC8500956

Original paper **Carotid** *SMI, CEUS*

Value of superb micro-vascular imaging in predicting ischemic stroke in patients with carotid atherosclerotic plaques

Yang DB, Zhou J, Feng L, Xu R, Wang YC

World J Clin Cases. 2019;7(7):839-848

DOI: 10.12998/wjcc.v7.i7.839 | **PMID:** 31024955 | **PMCID:** PMC6473120

Meta-analysis **Carotid** *SMI, CEUS*

Consistency of superb microvascular imaging and contrast-enhanced ultrasonography in detection of intraplaque neovascularization: A meta-analysis

Yang F, Wang C

PLoS ONE. 2020;15(7):e0230937.

DOI: 10.1371/journal.pone.0230937 | **PMID:** 32730304 | **PMCID:** PMC7392312

Original paper **Carotid** *SWE, SWD*

Ultrasound assessment of tensile stress in carotid arteries of healthy human subjects with varying age

Luo X, Du L, Li Z

BMC Med Imaging 2019;19(1):93

DOI: 10.1186/s12880-019-0394-5 | **PMID:** 31783804 | **PMCID:** PMC6884773

Original paper **Carotid** *SMI*

The Diagnostic Value of Radial and Carotid Intima Thickness Measured by High-Resolution Ultrasound for Ischemic Stroke

Xu M, Jin S, Li F, Jia G, Zhang C, Zhang M, Zhang Y
J Am Soc Echocardiogr. 2021;34(1):72-82

DOI: 10.1016/j.echo.2020.09.006 | **PMID:** 33121857

Meta-analysis **Carotid** *SMI*

Detection of Carotid Atherosclerotic Intraplaque Neovascularization Using Superb Microvascular Imaging: A Meta-Analysis

Song Y, Xing H, Zhang Z, Felix LO
J Ultrasound Med. 2021;40(12):2629-2638

DOI: 10.1002/jum.15652 | **PMID:** 33587302

Original paper **Carotid** *SMI*

Carotid Plaque Neovascularization Detected With Superb Microvascular Imaging Ultrasound Without Using Contrast Media

Zamani M, Skagen K, Scott H, Lindberg B, Russell D, Skjelland M
Stroke. 2019;50(11):3121–3127

DOI: 10.1161/STROKEAHA.119.025496 | **PMID:** 31510899

Original paper **Carotid** *Doppler*

Volumetric Carotid Flow Characteristics in Doppler Ultrasonography in Healthy Population Over 65 Years Old

Kaszczewski P, Elwertowski M, Leszczynski J, Ostrowski T, Galazka Z
J Clin Med. 2020;9(5):1375

DOI: 10.3390/jcm9051375 | **PMID:** 32392788 | **PMCID:** PMC7291321

Original paper **Neurovascular intervention** *SMI, CEUS*

Neurosurgical intraoperative ultrasonography using contrast enhanced superb microvascular imaging - vessel density and appearance time of the contrast agent

Ishikawa M, Masamoto K, Hachiya R, Kagami H, Inaba M, Naritaka H, Katoh S

Br J Neurosurg. 2020;10:1-10

DOI: 10.1080/02688697.2020.1772958 | **PMID:** 32648779

Original paper **Neurovascular intervention** *SMI, CEUS*

Ultrasonographic superb microvascular imaging for emergency surgery of intracerebral hemorrhage

Naritaka H, Ishikawa M, Terao S, Kojima A, Kagami H, Inaba M, Kato S

J Clin Neurosci. 2020;75:206-209

DOI: 10.1016/j.jocn.2020.03.002 | **PMID:** 32204956

Technical note **Arterial intervention** *Interventional*

Percutaneous Trans-venous Femoropopliteal Bypass in Long Occlusions of the Superficial Femoral Artery

Touma J, Senemaud J, Jaziri A, Cochennec F, Desgranges P

Cardiovasc Intervent Radiol. 2019;42(12):1800–1805.

DOI: 10.1007/s00270-019-02310-w | **PMID:** 31435757

Review article **Aortic** *CEUS*

Ultrasound Imaging of the Abdominal Aorta: A Comprehensive Review

Fadel BM, Mohty D, Kazzi BE, Alamro B, Arshi F, Mustafa M, Echahidi N, Aboyans V

J Am Soc Echocardiogr. 2021;34(11):1119-1136

DOI: 10.1016/j.echo.2021.06.012 | **PMID:** 34224827

Original paper **Peripheral vascular** *SMI*

Diagnostic utility of superb microvascular imaging in depiction of corkscrew collaterals in Buerger's disease

Nas OF, Kandemirli SG, Erdemli Gursel B, Bilgin C, Korkmaz B, Yolgosteren A, Inecikli MF

J Clin Ultrasound. 2021; 49:129– 134

DOI: 10.1002/jcu.22880 | **PMID:** 32557645

Veterinary studies

Original paper **Canine** *SWE*

Change in Shear Elastic Modulus of Thigh Muscle by Changing Muscle Length Using Ultrasound Shear Wave Elastography in Beagle Dogs

Shimizu M, Ito Y

Vet Comp Orthop Traumatol. 2019;32(06):454-459

DOI: 10.1055/s-0039-1692449 | **PMID:** 31242519

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