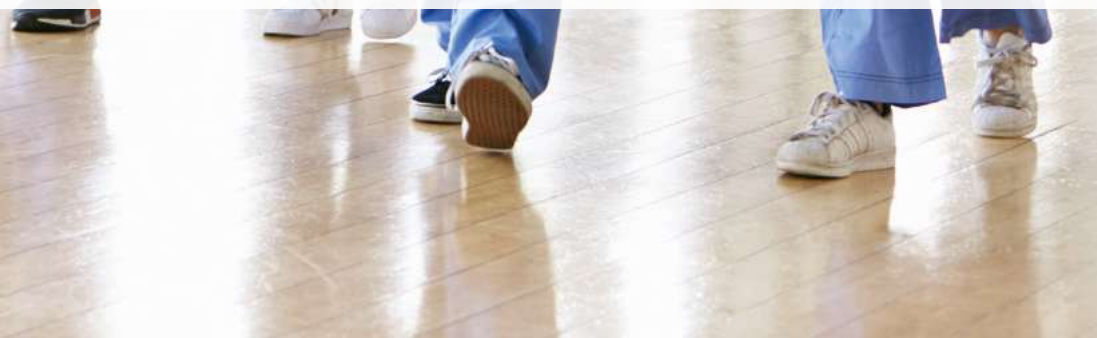
Canon

Clinical evidence

Aplio



Glossary

ATI – Attenuation Imaging
CEUS – Contrast-Enhanced Ultrasound
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

General imaging

SWE, ATI, SWD

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 Ultra Med 2021; online ahead of print

https://doi.org/10.1002/jum.15778

SWE, ATI, SWD

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 Ultras Med 2021:40(9):1919-1926

https://doi.org/10.1002/jum.15576

SWE, ATI, SWD

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

https://doi.org/10.3390/diagnostics11040629

SWE, ATI, SWD

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

Aitharaju V, De Silvestri A, G. Barr R

Abdom Radiol 2021; online ahead of print

https://doi.org/10.1007/s00261-021-03225-2

SWE, ATI, SWD

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

https://doi.org/10.1148/radiol.2020192665

SWE, ATI, SWD

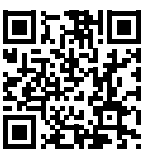
Reliability of Performing Multiparametric Ultrasound in Adult Livers

Gao J, Lee R, Trujillo M

J Ultras Med 2021; online ahead of print

https://doi.org/10.1002/jum.15751

SWE, ATI, SWD



Accuracy of 2-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

https://doi.org/10.1016/j.cgh.2020.05.034

SWE, 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, Șirli R, Popescu A, Puljiz Z, Grgurevic I

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

https://doi.org/10.1016/j.ultrasmedbio.2021.03.025

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 Failure 2021;8(3):1751-1758
https://doi.org/10.1002/ehf2.13318

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;46:4629–4636
https://doi.org/10.1007/s00261-021-02960-w

SWE, ATI

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

Lee J, Lee R, Erpelding T, Siddoway R L, Gao J
Clin Exp Hepatol 2021;7(2):223-230
https://doi.org/10.5114/ceh.2021.107068

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
http://dx.doi.org/10.11152/mu-2495

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

https://doi.org/10.1111/hepr.13319

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

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

https://doi.org/10.1016/j.ultrasmedbio.2020.01.011

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

https://doi.org/10.1016/j.pan.2021.02.014

SWE, SWD

Title 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

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

https://doi.org/10.1016/j.ultrasmedbio.2020.04.021

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 Ultrasonics 2020;47:575–581

https://doi.org/10.1007/s10396-020-01033-7

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

https://doi.org/10.1097/meg.0000000000001702

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 and Dillman JR

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

https://doi.org/10.2214/ajr.19.21796

SWE, SWD

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

https://doi.org/10.1148/radiol.2020192665

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

https://doi.org/10.1148/radiol.2019190064

SWE, SWD

Usefulness of Transabdominal Shear Wave Elastography in Pancreatic Lesion

Kojima H, Sofuni A, Sugimoto K, Tsuchiya T, Ishii K, Tanaka R, T onozuka R, Honjo M, Mukai S, Mitsuru F, Yamamoto K, Matsunami Y, Asai Y, Nagai K, Kurosawa T, Itoi T

Gastroenterology 2019;156(6S1):S-1045

http://dx.doi.org/10.1016/S0016-5085(19)39567-8

SWE, SWD

Preliminary clinical experience with shear wave dispersion (SWD) imaging of the liver

Zelesco M, Welman CJ, & Abbott S

Ultras Med Biol 2019;45(S):S25

https://doi.org/10.1016/j.ultrasmedbio.2019.07.493

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

https://doi.org/10.1007/s00330-020-07212-x

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 J
Investigative Radiol 2020;55(4):191-199
https://doi.org/10.1097/rli.0000000000000627

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
https://doi.org/10.1016/j.clinimag.2021.02.039

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
https://doi.org/10.3390/app11072992

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
https://doi.org/10.1007/s00330-020-07662-3

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

https://doi.org/10.14366/usg.19088

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

https://doi.org/10.3348/kjr.2019.0978

SWE

Comparison of the clinical usefulness of shear wave elastography relative to transient elastography and other markers of liver fibrosis.

Ayonrinde OT, Abbott S, Welman CJ, Adris N, Perrin M, Connelly C, Lam W, Zelesco M

Ultras Med Biol 2019;45(S1):S80

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SWE

Differentiating cervical metastatic lymphadenopathy and lymphoma by shear wave elastography

Chae SY, Jung HN, Ryoo I, Suh S

Sci Rep 2019;9:12396

https://doi.org/10.1038/s41598-019-48705-0

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 2021; online ahead print

https://doi.org/10.14366/usg.21076

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

https://doi.org/10.1016/j.clinimag.2021.01.034

ATI

Accuracy of US AC for 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 2021; online ahead print

https://doi.org/10.14366/usg.21076

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 Ultras Med 2021;40(7):1325-1332

https://doi.org/10.1002/jum.15512

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

https://dx.doi.org/10.14366%2Fusg.19034

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

http://dx.doi.org/10.3390/jcm10050965

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 and Strobel D

IEEE J Transl Eng Health Med 2020;8:1-9

https://doi.org/10.1109/JTEHM.2020.3001488

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 PM, Castera L, Paradis V, Garteiser P, Van Beers B, Vilgrain V

Eur Radiol 2020;30:2293–2301

https://doi.org/10.1007/s00330-019-06480-6

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

https://doi.org/10.14309/ctg.0000000000000081

ATI

Ultrasound-based techniques for the diagnosis of liver steatosis

Ferraioli G, Soares Monteiro LB

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

https://dx.doi.org/10.3748/wjg.v25.i40.6053

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

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

https://doi.org/10.1016/j.ultrasmedbio.2019.05.033

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;29:6499–6507

https://doi.org/10.1007/s00330-019-06272-y

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
Ultras Med Biol 2019;45(6):1407-1416
https://doi.org/10.1016/j.ultrasmedbio.2019.02.008

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(09):847-854
https://doi.org/10.1055/a-1217-7465

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
https://doi.org/10.3390/jcm9123953

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
https://doi.org/10.14366/usg.19031

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

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

https://doi.org/10.1016/j.ultrasmedbio.2019.06.411

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 2020; online ahead of print

https://doi.org/10.1055/a-1143-3091

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

https://doi.org/10.3348/kjr.2019.0068

SMI

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

https://doi.org/10.1148/radiol.2020200885

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

https://doi.org/10.14366/usg.20177

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

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SMI

Diagnostic Value of Superb Microvascular Imaging in Parotid Tumors

Zhao L, Mu J, Mao Y, Xin X

Med Sci Monit 2020;26:e921813

https://pubmed.ncbi.nlm.nih.gov/32507848/

SMI

Distinguishing benign from malignant thyroid nodules by using thyroid ultrasonography: utility of adding superb microvascular imaging

Ahn HS, Ha SM, Park HJ, Lee GY, Kim S, Lee ES, Choi BI

Ultras Med Biol 2019;45(S1):S80

https://doi.org/10.1016/j.ultrasmedbio.2019.07.272

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;38:2811-2820

https://doi.org/10.1002/jum.15008

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

Ultras Quarterly 2019;35(4):325-329

https://doi.org/10.1097/ruq.0000000000000416

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

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

https://doi.org/10.1002/jum.15299

SMI

Improved detection of indeterminate renal mass vascularity with superb microvascular imaging

Leong JY, Wessner C, Kramer M, Forsberg F, Lyshchik A, Trabulsi E, Lallas C, Eisenbrey J

J Urol 2019;201suppl4:e997-e998

https://doi.org/10.1097/01.JU.0000557505.38582.6e

SMI

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

Jing G, Thai A, Erpelding T

Clinical Imaging 2019;58:90-95

https://doi.org/10.1016/j.clinimag.2019.06.011

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

https://doi.org/10.1371/journal.pone.0230937

SMI, SWE, Smart Fusion / Smart Navigation

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

Shen TT, Xue JL

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

https://doi.org/10.21037/tau.2019.11.15

SMI, Smart Fusion / Smart Navigation

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

https://doi.org/10.1007/s00345-020-03193-0

CEUS

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

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

https://doi.org/10.1016/j.ultrasmedbio.2020.05.001

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

https://doi.org/10.3233/ch-190758

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

https://doi.org/10.3233/CH-190718

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 Research 2019;39(11):6183-6192

https://doi.org/10.21873/anticanres.13826

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

https://doi.org/10.3233/CH-190579

Smart Fusion / Smart Navigation

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 X-Ray Science and Technology 2020;28(1):171-183

https://doi.org/10.3233/XST-190563

Smart Fusion / Smart Navigation

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 Medical Investigation 2019;66(3.4):319-323

https://doi.org/10.2152/jmi.66.319

Smart Fusion / Smart Navigation

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 Intervent Imaging 2019;100(12):771-780

https://doi.org/10.1016/j.diii.2019.08.004

Smart Fusion / Smart Navigation

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, Mangz J

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

https://doi.org/10.1159/000504266

Smart Navigation

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

https://doi.org/10.1007/s00270-019-02310-w

Miscellaneous

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

https://doi.org/10.1002/jso.25728

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

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

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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;12:479–483

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Pediatric imaging

SWE

Pancreas ultrasound two-dimensional shear wave elastography in healthy children

Qiu L, Trout AT, Bennett PS, Dillman JR
Pediatr Radiol 2021;51:403–409
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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;50:1255–1262
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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;49:1025–1031
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SWE

Spleen stiffness by 2D 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
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SMI

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

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

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

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SMI

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

Ayaz E, Ayaz M, Öna CI, Yıkılmaz A

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

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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;29:2127–2136

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Musculoskeletal imaging

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
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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
https://doi.org/10.1007/s00256-019-3162-2

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
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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
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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
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SMI

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

Jin X, Li F, Liu H, Wang H, Du J
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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
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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
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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;39:967-976
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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
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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
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Miscellaneous

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 Biol Med 2020;46(1):55-63
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Miscellaneous

Clinical utility and potential of ultrasound in osteoarthritis

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

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Women's Health imaging

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 Sep;21(9):1045-1054 (open access)

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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

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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

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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 2021;24(2):89-98

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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;20,85

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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

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SWE

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

O'Hara S, Zelesco M, Sun Z

JUM (AIUM) 24 August 2020(abstract)

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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

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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): 398406
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SMI

Breast Ultrasound Microvascular Imaging and Radiogenomics

Park AY, Seo BK, Han MR
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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
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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 and Jiang Q
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SMI

Evaluation of plasma cell mastitis with superb microvascular imaging

Zhu YC, Zhang Y, Deng SH, Jiang Q, Sh XR, Feng LL
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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
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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
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Smart Fusion / Smart Navigation

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, Linan MJ, Lawton T, Phadke G, Davey S, Nguyen NQ, Markowet F, Brenton JD, Crispin-Ortuzar M, Addley H, Sala E
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Miscellaneous

A Rare Case of a Woman Presenting with Axillary Silicone lymphadenopathy accompanied by Extracapsular Siliconoma and Thickened Capsule after an Implant-based Augmentation Mammaplasty

Kim JH

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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

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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

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Obstetric ultrasound

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

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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 2019; online ahead of print

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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

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SMI

Characterization of Placental Microvasculature Using Superb Microvascular Imaging

Mack LM, Mastrobattista JM, Gandhi R, Castro EC, Burgess APH, Lee W

J Ultras Med 2019;38(9):2485-2491

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SMI

Sonohistological findings of the placenta accreta spectrum

Furuya, N, Hasegawa, J, Homma C, Suzuki N
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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
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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
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WMT

Normal Fetal Ventricular Strain by 2-Dimensional Speckle Tracking Echocardiography With Novel Imaging Modality With Higher Frame Rate and Spatial Resolution

Takei K, Yasukochi S, Takigiku K, Tanaka N, Yonehara K, Obinata H, Numata R, Koyama S, Masamoto M, Yamada Y
Journal infoNov 2019 Circulation. 2019;140: A14440 (abstract)
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Placental function and fetal weight are associated with maternal hemodynamic indices in uncomplicated pregnancies at 35-37 weeks gestation

Coral Garcia-Gonzalez C, Samira Abdel-Azim S, Slavyana Galeva S, Georgios Georgiopoulos G, Kypros H. Nicolaides KH, Charakida M

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Echocardiography

MVA

Intervendor comparison of mitral valve analysis software

Bratanoff M, Garwood S, Zhu Q, Vaitkeviciute I, Lin B, Mancina J, Fukuda S, Imamura T, Gorrisen W, Sugeng L

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WMT

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

Tetsuji Kitano, Yosuke Nabeshima, Yasuhiko Abe, Yutaka Otsuji, Masaaki Takeuchi

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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

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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

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Smart 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
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Smart 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); online ahead of print
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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
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Vascular imaging

SWE, SWD

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

Luo X, Du L, Li Z

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SMI

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

Song Y, Xing H, Zhang Z, Felix LO

J Ultras Med 2021; online ahead of print

https://doi.org/10.1002/jum.15652

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

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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

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