Volume 65 | Supplement 5 | 2019

ACTA MEDICA MARISIENSIS

OFFICIAL PUBLICATION OF THE

UNIVERSITY OF MEDICINE, PHARMACY, SCIENCES AND TECHNOLOGY OF TÂRGU MUREȘ

THE XXII NATIONAL CONFERENCE OF THE ROMANIAN SOCIETY OF ULTRASOUND IN MEDICINE AND BIOLOGY (SRUMB)

May 9-11, 2019

Tîrgu Mureș, Romania

BOOK OF ABSTRACTS

ISSN: 2068 – 3324 • Online ISSN: 2247-6113 • www.actamedicamarisiensis.ro

UNIVERSITY PRESS 19 99 TÂRGU-MUREȘ

Acta Medica Marisiensis

Volume 65 | Supplement 5 | 2019

THE XXII NATIONAL CONFERENCE OF THE ROMANIAN SOCIETY OF ULTRASOUND IN MEDICINE AND BIOLOGY (SRUMB)

May 9-11, 2019, Tîrgu Mureș, Romania

BOOK OF ABSTRACTS

Acta Medica Marisiensis

Acta Medica Marisiensis (ISSN: 2068-3324) is the official publication of the University of Medicine, Pharmacy, Sciences and Technology of Târgu Mureş, being published by University Press, Târgu Mureş.

The journal publishes high-quality articles on various subjects related to research and medical practice from the all the medical and pharmaceutical fields, ranging from basic to clinical research and corresponding to different article types such as: reviews, original articles, case reports, case series, letter to editor or brief reports. The journal also publishes short information or editorial notes in relation to different aspects of the medical and academic life.

Information for contributors

Manuscripts must be submitted via editorial manager system, available online at
www.editorialmanager.com/amma

Correspondence

All correspondence should be addressed to the Editorial Office:
Acta Medica Marisiensis
University of Medicine, Pharmacy, Sciences and Technology of Târgu Mureş
38, Gh. Marinescu St, 540139 Tîrgu Mureş, Romania
Managing Editor Associate Professor Adrian Man
or sent by e-mail to ammjournal@umftgm.ro

Acta Medica Marisiensis is indexed in the following international databases:

· Celdes
· CNKI Scholar
· CNPIEC
· EBSCO Discovery Service (since 01 July 2010, first indexed number - no.4/2010)
· Google Scholar
· J-Gate
· Primo Central (ExLibris)
· ReadCube
· Summon (Serials Solutions/ProQuest)
· TDOne (TDNet)
· WorldCat (OCLC)

DTP and Website Management
Editura Prisma

Disclaimer

The views expressed in this journal represent those of the authors or advertisers only.
In no way can they be construed necessarily to reflect the view of either the Editors or the Publishers.

This journal is printed on environmentally-friendly ECF (elemental chlorine free) woodfree paper.

The XXII National Conference of the Romanian Society of Ultrasound in Medicine and Biology (SRUMB)

May 9-11, 2019, Tîrgu Mureș, Romania

Organizing Committee

Prof. Viorela Enachescu MD, PhD, president of SRUMB – University of Medicine and Pharmacy Craiova
Chief Lecturer Mirela Gliga, MD, PhD – University of Medicine, Pharmacy, Science and Technology Tg.Mures
Adriana Gomotirceanu, MD, PhD –Mureș Association for Ultrasound, Tg. Mures
Claudia Cozma, MD –Mureș Association for Ultrasound, Tg. Mures
Chief lecturer Sanda Voicu, MD, PhD – University of Medicine, Pharmacy, Science and Technology Tg.Mures
Assoc Prof. Horatiu Moldovan, MD, PhD – University of Medicine, Pharmacy, Science and Technology Tg.Mures
Chief lecturer Torok Imola, MD, PhD – University of Medicine, Pharmacy, Science and Technology Tg.Mures
Prof. Azamfirei Leonard MD, PhD, rector University of Medicine, Pharmacy, Science and Technology Tg.Mures
Prof. Silviu Morariu, MD, PhD – University of Medicine, Pharmacy, Science and Technology Tg.Mures
Assoc Prof. Daniela Podeanu, MD, PhD – Mures Emergency County Hospital
Asist Prof Mihai Gliga, MD, PhD, University of Medicine, Pharmacy, Science and Technology Tg.Mures
Iulia China – secretary SRUMB
Gabriela Uifalean – Mureș Association for Ultrasound, Tg Mures
Ec. Sorin Serb – Mureș Association for Ultrasound, Tg Mures
Lucian Morariu – UMFST Tg.Mures
Teodora Mindru – UMFST Tg.Mures

Scientific Committee

Prof. Viorela Enachescu MD, PhD, SRUMB president – University of Medicine and Pharmacy Craiova
Prof. Sorin Dudea, MD, PhD, former SRUMB president, "Iuliu Haţieganu" University of Medicine and Pharmacy Cluj-Napoca
Assoc Prof. Alina Popescu, MD, PhD – future SRUMB president, University of Medicine and Pharmacy Timișoara
Prof. Zeno Sparchez MD, PhD– "Iuliu Haţieganu" University of Medicine and Pharmacy Cluj-Napoca
Assoc Prof. Roxana Sirli MD, PhD – University of Medicine and Pharmacy Timișoara
Prof. Daniela Fodor MD, PhD – "Iuliu Haţieganu" University of Medicine and Pharmacy Cluj-Napoca
Prof. Petru Adrian Mircea MD, PhD – "Iuliu Haţieganu" University of Medicine and Pharmacy Cluj-Napoca
Prof. Radu Badea MD, PhD – "Iuliu Haţieganu" University of Medicine and Pharmacy Cluj-Napoca
Prof. Adrian Saftoiu MD, PhD– University of Medicine and Pharmacy Craiova
Assoc Prof. Ciprian Brisc MD, PhD – University of Medicine and Pharmacy Oradea
Prof. Ioan Sporea MD, PhD – University of Medicine and Pharmacy Timișoara
Titus Suteu MD, PhD – "Iuliu Haţieganu" University of Medicine and Pharmacy Cluj-Napoca
Dan Stanescu, MD, PhD – Fundeni Clinical Institute, Bucharest
Assoc Prof. Romeo Chira MD, PhD – "Iuliu Haţieganu" University of Medicine and Pharmacy Cluj-Napoca
Assoc Prof. Carolina Solomon MD, PhD– "Iuliu Haţieganu" University of Medicine and Pharmacy Cluj-Napoca
Assoc Prof. Adrian Costache MD, PhD – University of Medicine and Pharmacy "Carol Davila" Bucharest
Prof. Maria Crisan MD, PhD – "Iuliu Haţieganu" University of Medicine and Pharmacy Cluj-Napoca
Assoc Prof Mirela Danila MD, PhD – University of Medicine and Pharmacy Timișoara
Chief lecturer Mirela Gliga, MD, PhD – University of Medicine, Pharmacy, Science and Technology Tg.Mures
Mihai Iacob MD, PhD – Advitam Medical Center Timișoara
Prof. Oana Marginean MD, PhD, Vice rector University of Medicine, Pharmacy, Science and Technology Tg.Mures
Prof. Silviu Morariu, MD, PhD – University of Medicine, Pharmacy, Science and Technology Tg.Mures
Assoc Prof. Mihai Catalina, MD, PhD – University of Medicine and Pharmacy Iași
Calin Mos MD, PhD– Beius

Assoc Prof Monica Platon Lupsor MD, PhD– “Iuliu Haţieganu” University of Medicine and Pharmacy Cluj-Napoca
Prof. Mircea Stamate, MD, PhD – University of Medicine and Pharmacy “Carol Davila” Bucharest
Horia Stefanescu MD, PhD – “Iuliu Haţieganu” University of Medicine and Pharmacy Cluj-Napoca
Prof. Ioan Tofolean MD, PhD – University of Medicine and Pharmacy Constanţa

ORIGINAL PRESENTATIONS

COMPARATIVE STUDY BETWEEN A PSWE AND 2D-SWE INTEGRATED IN THE SAME ULTRASOUND MACHINE TAKING TRANSIENT ELASTOGRAPHY AS REFERENCE METHOD

Camelia Gianina Foncea[1], Ioan Sporea[1], Raluca Lupusoru[1], Renata Fofiu[1], Roxana Sirli[1], Mirela Danila[1], Alina Popescu[1]

[1]Department of Gastroenterology and Hepatology "Victor Babes" University of Medicine and Pharmacy, Timisoara, Romania

Purpose: To evaluate the feasibility of two novel elastographic methods, pSWE and 2D-SWE, integrated in the same ultrasound machine, for liver fibrosis (LF) assessment using Transient Elastography (TE) as the reference method.

Material and methods: 115 subjects were included, in which LF was evaluated in the same session by TE (Fibroscan, EchoSens), pSWE and 2D-SWE (Samsung-Medison RS85). Reliable liver stiffness (LS) measurements were defined: for TE the median values of 10 measurements with a success rate ≥60% and IQR/M<30%; for pSWE and 2D-SWE the median value of 10 measurements, with a reliability measurement index (RMI)>0.5 and IQR/M<30%; for classification of LF severity we used TE as reference method with the following cut-offs: F2≥7kPa, F3≥9.5kPa and F4≥12kPa [1].

Results: Reliable measurements by TE were obtained in 98.2%(113/115), by pSWE in 93.9%(108/115) and by 2D-SWE in 92.1%(106/115) subjects, so the final analysis included 101 patients. We divided the cohort into 3 groups: fibrosis<F2(66.3%), fibrosis F2-3(15.8%) and F4(17.8%). Cut off values calculated for pSWE are: F≥2 LS>5.9 kPa [AUROC=0.95, 95% CI (0.89;0.98),p<0.0001,Se=94.1%,Sp=89.5%,PPV=82.1%,NPV=96.8%] F4 LS>8 kPa (AUROC=0.98, 95% CI (0.94;0.99),p<0.0001,Se=94.4%,Sp=95.1%,PPV=81%,NPV=98.7%), and for 2D-SWE: F≥2 LS>6.1 kPa[AUROC=0.93, 95% CI(0.86;0.97),p<0.0001,Se=91.1%, Sp=80.6%,PPV=70.5%,NPV=94.7%], F4 LS>7.6 kPa[AUROC=0.98, 95% CI(0.93;0.99), p<0.0001,Se=100%,Sp=91.5%,PPV=72%,NPV=100%].

We observed a strong correlation between LS values obtained by TE and 2D-SWE(r=0.85), between TE and pSWE(r=0.88) and between pSWE and 2D-SWE(r=0.90) (p=0.37). There were no significant differences between the mean values obtained by pSWE and 2D-SWE(p=0.96).

Conclusion: The novel pSWE and 2D-SWE are feasible methods for assessing liver fibrosis, both techniques strongly correlating with TE results.

Keywords: elastography, pSWE, 2D-SWE, liver fibrosis

VALUE OF VISCOSITY, VISCOELASTICITY AND ATTENUATION MEASUREMENT USING SHEAR WAVE ULTRASOUND ELASTOGRAPHY

Ioan Sporea[1], Victor Bâldea[1], Raluca Lupușoru[1], Alin Lazăr[1], Renata Fofiu[1], Alina Popescu[1], Roxana Șirli[1]

[1]Department of Gastroenterology, University of Medicine and Pharmacy „Victor Babes", Timișoara, Romania

Objectives: To evaluate the usefulness of Two-Dimensional Shear Wave Elastography(2D-SWE) and Attenuation Index(ATI) measurements obtained using Aplio i800 from Canon, for the noninvasive assessment of liver fibrosis and steatosis using Transient Elastography(TE) with Controlled Attenuation Parameter(CAP) as the reference method.

Methods: 113 consecutive subjects were included, mostly NAFLD patients, in whom liver stiffness (LS) and steatosis were evaluated in the same session by means of 2 elastography techniques: TE with CAP(FibroScan, EchoSens) and 2D-SWE with ATI(Aplio I800, Canon). Reliable LS measurements were defined for TE as the median value of 10 measurements with an IQR/M<30% and for 2D-SWE the median value of 5 measurements with an IQR/M<30%.

To discriminate between TE fibrosis stages we used the following cut-off values: F≥2: 8.4 kPa and F4: 13.2 kPa and for discrimination of steatosis stages the cut-offs recommended by the manufacturer: S1(mild) – 230db/m, S2(moderate) - 275db/m, S3(severe) - 300db/m.

Results: Reliable LS measurements were obtained in 99.1% of subjects by both 2D-SWE and TE.A very strong positive correlation was found between LS values: r=0.88, p<0.0001 and between the attenuation coefficients of steatosis: r=0.81, p<0.0001 obtained by the 2 methods.

The best cut-off values for fibrosis were F0/1 ≤6.2 kPa(AUROC 0.82; Se=75%; Sp=85.5%), F≥2: 7.9 kPa(AUROC 0.96; Se=90.4%; Sp=95.6%), F4: 11.7 kPa(AUROC 0.99; Se=100%; Sp=96%). Regarding steatosis, the best cut-off values were: S1=0.64 dB/cm/mHz(AUROC 0.89; Se=73.6%; Sp=88.8%), S2=0.79 dB/cm/mHz(AUROC 0.88; Se=63.4%; Sp=96.4%), S3=0.86dB/cm/mHz(AUROC 0.95; Se=45%; Sp=100%).

Conclusions: 2D-SWE and ATI measurements with the new system strongly correlate with TE and CAP results.

Keywords: Elastography, 2D-SWE, fibrosis, steatosis

STRAIN AND SHEARWAVE ELASTOGRAPHY IN TESTICULAR TUMORS. CASE PRESENTATIONS.

Călin Moș[1], Gineta Holt[1], Tamas Alexandru Merai[1]

[1]CMI Beius

Testicular elastography is much less used compared to other superficial structures such as breast or thyroid. For this reason, the data in the literature is relatively few, especially those related to shearwave elastography. However, the diagnostic importance of testicular elastography seems to be increased, especially if a tumor is overlapping with a preexisting testicular suffering, that alters the echostructure of testicular parenchyma.

In the presented cases, the added value of the elastography in relation to the 2D and Doppler ultrasound is highlighted, but at the same time the two variants of elastography (strain and shearwave) are compared.

The cases presented are diverse (testicular tumors without other underlying conditions, but also in the case of an ectopic and hypotrophic testicle, testis with chronic orchitis, testicle with microcalcifications, or the single postoperative testicle - after a previous testicular TU).

From the few cases, some preliminary conclusions can be drawn on the elastographic aspect (strain and shearwave), characteristic of testicular tumors. In addition, in the case of shearwave elastography, certain reference intervals in kPa are observed, between which is the elasticity of the normal testicle and the elasticity of a testicular tumor.

Keywords: testicle, elastography, strain, shearwave

BENIGN CONDITIONS THAT MIMIC LYMPHOMA IN CERVICAL LYMPH NODES: ULTRASOUND APPROACH

D.R.Balea[1], Lavinia Manuela Lenghel[2], Sorin M. Dudea[2], Grigore Baciuț[3], Horațiu Rotar[3], Cristian Dinu[3]

[1]Department of Radiology, Emergency County Hospital of Cluj Napoca, Romania.
[2]Department of Radiology, „Iuliu Hatieganu" University of Medicine and Pharmacy, Cluj-Napoca, Romania.
[3]Departamentul de Chirurgie Orală si Maxilo-Facială, Universitatea de Medicina si Farmacie „Iuliu Hatieganu", Cluj-Napoca, Romania.

Objectives: The aim of this paper is to to highlight the role of ultrasound in evaluation and differentiation of cervical lymph nodes and to review the features of lymphomatous nodes and some benign conditions that have similar sonographic features.

Background: Cervical lymphadenopathy is seen in a wide variety of benign and malignant pathologies, consequently an accurate assesment among these conditions is mandatory in order to establish proper treatment. Due to its large number of advantages ultrasound is nowadays used as a first line diagnostic tool in evaluation of head and neck lymphadenopathy.

Lymphoma it is the most common cause for persistent unilateral neck mass. On ultrasound, lymphomatous nodes can have a suggestive appearance. They tend to present as multiple enlarged cervical nodes with round shape, well defined borders and intranodal reticulation and mixt, central and peripheral vascular pattern on Doppler examination. Sonoelastography shows a softer appearance comparing with other malignancies. However, there are some benign conditions that affect cervical lymph nodes and can have similar sonographic characteristics, tuberculosis being the most common. Cat scratch disease or infectious mononucleosis also have to be taken into consideration for differential diagnosis.

Conclusion: Utrasound remains, in most of the cases, the first imaging modality used for the evaluation of cervical lymphadenopathy. None of the US criteria proved to be perfect in case of differentiation between benign and malignant lymph nodes and the diagnosis can be establish sometimes only after histopathological examination.

Keywords: ultrasound; lymphoma; head and neck

INTRA- AND INTEROPERATOR REPRODUCIBILITY OF A TIME HARMONIC ELASTOGRAPHY AND THE IMPACT OF ULTRASOUND EXPERIENCE IN ACHIVIENG RELIABLE RESULTS

Tudor Moga[1], Raluca Lupusoru[1], Ioan Sporea[1], Alina Popescu[1], Alexandru Popa[1], Andrea Zschätzsch[1], Meghana Enumula[1], Roxana Sirli[1], Mirela Danila[1], Camelia Foncea[1], Radu Cotrau[1], Heiko Tzschätzsch[2], Anton Schlesinger[3], Ingolf Sack[2]

[1]Department of Gastroenterology and Hepatology, University of Medicine and Pharmacy "Victor Babes" Timisoara, Romania.
[2]Department of Radiology, Charité Universitätsmedizin, Berlin, Germany.
[3]G.A.M.P.T.mbH and Institute of Medical Informatics, Merseburg, Germany.

Aim: The aim of this paper was to evaluate the inter-and intraobserver reproducibility of the new time-harmonic elastography diagnostic system (THED) (1) and the impact of ultrasound (US) experience in acquiring reliable measurements, since no official recommendations are available for this system.

Material and methods: Elastographic measurements (EM) were obtained in 27 consecutive subjects using THED. Three examiners with different levels of experience in US and US-based elastography, performed 10 valid EM on each subject. We defined their experience as follows: E1- no experience in elastography and less than 50 ultrasound (US) examinations, E2: more than one year elastographic experience and more than 500 US examinations and E3: more than 1000 US examinations, without any experience in elastography. We used the intraclass correlation coefficient (ICC), inter-rater agreement (Kappa coefficient) and concordance correlation coefficient to assess the inter- and intraobserver reproducibility.

Results: We did not find significant differences between the means of EM obtained by the examiners overall and across study group [1.66 (E1) vs 1.66 (E2) vs 1.65 (E3), p=0.76]. The overall agreement between examiners was excellent: 0.94 (95% CI: 0.89-0.97). There was at least a good agreement between examiners (E1 vs. E3: k=0.80, 95% CI:0.67–0.94; E1 vs. E2: k=0.81, 95% CI:0.69–0.94), and good to excellent in E2 vs. E3: k=0.89, 95% CI:0.82-0.96. The intraobserver reproducibility for each of the examiners was excellent, however the ICCs were higher in more experienced examiners in US: E1- 0.92, (95% CI:0.82–0.96) vs. E3-0.94 (95% CI:0.87–0.97) vs. E2-0.97 (95% CI:0.95–0.99). The concordance correlation coefficients were similar: E1 vs. E3-0.84, E1 vs. E2-0.89 and E3 vs. E2-0.89.

Conclusions: The good ICCs and Kappa coefficients for the mean values show that THED is a reproducible method. Ultrasound experience did not significantly influence the results.

(1) Tzschätzsch H, Nguyen Trong M, Scheuermann T, Ipek-Ugay S, Fischer T, Schultz M, Braun J, Sack I. Two-Dimensional Time-Harmonic Elastography of the Human Liver and Spleen. Ultrasound Med Biol 2016;42(11):2562-2571.

ENHANCEMENT PATTERNS OF INTRAHEPATIC CHOLANGIOCELLULAR CARCINOMA ON CEUS – MONOCENTRIC OBSERVATIONAL STUDY

Mirela Danila[1], Ana-Maria Ghiuchici[1], Alina Popescu[1], Roxana Sirli[1], Călin Burciu[1], Andreea Corobea[1], Mădălina Topan[1], Ioan Sporea[1]

[1] "Victor Babeş" University of Medicine and Pharmacy, Timişoara, Romania

Objective: This study aimed to evaluate the enhancement pattern of cholangiocellular carcinoma (CCC) on contrast enhanced ultrasound (CEUS).

Methods: This observational retrospective study included 50 patients diagnosed with CCC between 2010-2018. The final diagnosis of CCC was established by an imaging method (contrast enhanced CT or MRI) or biopsy. All 50 patients with CCC were examined by CEUS (22 men, 38 women, mean age 64.3±10.9 years); only 5 patients had liver cirrhosis and 2 patients with chronic hepatopathy with severe fibrosis. CEUS was considered conclusive for CCC if a typical pattern was present (EFSUMB criteria).

Results: In the arterial phase the enhancement patters were: a) Rim-like enhancement: irregular peripheral hyper-enhancement and nonenhancing regions 18/50 cases (36%); b) Homogeneous hyperenhancement in 11/50 cases (22%); c) Heterogeneous hyperenhancement-mixed irregular hyper-enhancement in both the peripheral and central parts of the lesion and nonenhancing regions in 12/50 cases (24%); d) Isoenhancement in 2/50 cases (4%); e) Hypoenhancement in 7/50 cases (14%). In the portal phase washout was observed in 34/50 (68%) cases, isoenhancement in 7/50 cases (14%), hypoenhacement in 7/50 cases (14%) and hyperenhancing pattern in 2/50 (4%) cases. In the late phase washout was observed in 40/50 (80%) cases, hypoenhacement in 8/50 cases (16%), isoenhancement in 1/50 cases (2%) and hyperenhancing pattern in 1/50 cases (2%). In 44% (22/50 cases) CEUS was conclusive for the diagnosis of CCC, 25 lesions were inconclusive on CEUS and 3 (6%) lesions were misdiagnosed. After CEUS examination all 25 inconclusive lesions were classified as malignant.

Conclusions: 60% of CCC cases had rim-like and heterogeneous enhancement in the arterial phase. Washout was present in the late vascular phase in 80% of cases. After CEUS examination a conclusive result for the diagnosis of CCC was obtained in 44% cases. All inconclusive lesions on CEUS were classified as malignant.

THE ROLE OF ULTRASOUND AND CONTRAST-ENHANCED ULTRASOUND IN ASSESSMENT OF ACUTE PANCRETITITS IN A TERTIARY GASTROENTEROLOGY DEPARTMENT

Cristina Apetrei[1], Patricia Lupulescu[1], Alina Popescu[1], Mirela Danila[1], Ioan Sporea[1], Roxana Sirli[1]

[1]Department of Gastroenterology and Hepatology, University of Medicine and Pharmacy „Victor Babeş“ Timişoara, Romania
apetrei_crisstina@yahoo.com

Introduction: Acute pancreatitis is an entity of notable importance due to its high incidence and mortality. Conventional ultrasonography (US) is curently the first-line imaging modality used in clinical practice for assessing acute pancreatitis, as a non-invasive, easy and safe procedure.

The aim of the current retrospective study was to investigate the value of conventional ultrasonography and contrast-enhanced ultrasound (CEUS) in the assessment of acute pancreatitis, using contrast enhanced CT/MRI as the reference method.

Material and methods: We conducted a retrospective study of 187 patients with acute pancreatitis who were admitted in our Department from January 2017 to February 2019. US was performed in all patients and CEUS in a subgroup in whom the pancreas was visible by US. CEUS enhancement pattern of the lesions was described according to the current EFSUMB guidelines. All patients had CT/MRI as reference method.

Results: 187 patients were included (117 men -62.6%; mean age 56,1 years; range 19-90) from which 47 were with recurent pancreatitis. In most cases the etiology was biliary 43.3 % (81), followed by alcohol abuse 26.2% (49) and 7.5% (14) patients were with hipertriglyceridemia. Regarding the etiology in 13.4% (25) the cause of acute pancreatitis was unknown. From the study group 64 (35.1%) were mild, 96 (51.3%) moderate and 22 (11.7%) severe forms of acute pancretitis. US diagnosed free intraperitonel fluid and collections in 84.7% (n=100). CEUS was performed in 23 cases (19.4%) and pancreatic necrosis was diagnosed in 8 patients. CEUS missed the presence of necrosis only in 1 patient as compared to CT/MRI.

Conclusion: Standard ultrasonography is a good method for assessment in acute pancreatitis, with a good detection of free intraperitoneal fluid and collections but with limited value to detect pancreatic necrosis. CEUS is comparable to CT/MRI but limited by the acoustic window of the patient.

Keywords: acute pancreatitis, ultrasonograohy, CEUS

COMPARASION BETWEEN THE PERFORMANCE OF POINT SHEAR WAVE ELASTOGRAPHY AND 2D-SHEAR WAVE ELASTOGRAPHY FOR THE NONIVASIVE PREDICTION OF PORTAL HIPERTENSION

Renata Fofiu[1], Ioan Sporea[1], Felix Bende[1], Raluca Lupusoru[1], Alina Popescu[1], Roxana Şirli[1]

[1]Department of Gastroenterology and Hepatology, University of Medicine and Pharmacy Victor Babes Timisoara, Timisoara, Romania,
renata.fofiu@yahoo.com

Aim: The aim of the study was to establish the usefulness of spleen stiffness (SS) values measured by means of two elastographic techniques: point shear wave elastography (pSWE) and 2D-shear wave elastography 2D-SWE as non-invasive markers for predicting the presence of esophageal varices (EV) and to compare their performances.

Material and methods: A prospective study was performed, including 86 subjects with compensated liver cirrhosis who underwent both upper endoscopy and SS measurements (SSM) by means of two elastographic techniques: pSWE - using virtual touch quantification (VTQ) technology (Acuson S2000-Siemens Medical Solutions); and 2D-SWE (LOGIQ E9-General Electric), in the same admission. Reliable SSM were defined for both techniques as the median value of 10 measurements acquired in a homogenous area with (IQR/M) <0.30. Compensated liver cirrhosis was diagnosed based on clinical, biological and elastographic criteria (Liver transient elastography>12.5 kPa) [1].

Results: We obtained reliable SSM in 85/86 (98.8%) by means of 2D-SWE.GE and in 96.5% (83/86) subjects by means of pSWE-VTQ. 83 subjects were included in the final analysis, 63.8% (53/83) of them with EV. The best SS cut-off value by 2D-SWE.GE for predicting the presence of EV in our study group was 13.4 kPa (AUROC–0.89; sensitivity-85%; specificity- 93.3%; PPV-95.7%; NPV-77.8%), while for pSWE-VTQ it was 2.8 m/s (AUROC–0.65; sensitivity-60%; specificity-70%; PPV-78%; NPV-50%). Based on AUROC comparison, 2D-SWE. GE performed significantly better that pSWE-VTQ to predict the presence of EV (p=0.0011).

Conclusion: Although there are no significant differences between the feasibility of the two methods (p=0.62), it seems that 2D-SWE.GE has a better performance in predicting the presence of EV as compared with pSWE-VTQ (p=0.0011).

A NEW SCORE FOR PREDICTING ESOPHAGEAL VARICES IN PATIENTS WITH COMPENSATED LIVER CIRRHOSIS

Renata Fofiu[1], Ioan Sporea[1], Felix Bende[1], Raluca Lupusoru[1], Alina Popescu[1], Roxana Șirli[1]

[1]Department of Gastroenterology and Hepatology, University of Medicine and Pharmacy Victor Babes Timisoara, Timisoara, Romania, renata.fofiu@yahoo.com

Aim: The aim of the study was to formulate and assess the usefulness of a new non-invasive score to predict the presence of esophageal varices (EV) in cirrhotics.

Material and methods: A prospective study was performed in 77 subjects with compensated liver cirrhosis (diagnosed based on clinical, biological and elastographic criteria -Liver transient elastography>12.5kPa[1]), who underwent upper endoscopy, abdominal ultrasound, spleen and liver stiffness measurements (SSM and LSM, respectively) using a 2D-SWE technique from General Electric (Logiq E9) and biologic tests in the same session. Reliable SSM and LSM were defined as the median value of 10 measurements acquired in a homogenous area with IQR/M<0.30.

Results: We obtained reliable SSM in 98.7% (76/77) subjects and reliable LSM in 97.4% (75/77). 75 subjects were included in the final analysis, 64% (48/75) with EV. The mean SS, LS, spleen size (cm) were significantly higher in patients with EV (16.77±2.92 kPa vs. 13.2±2.66 kPa, p<0.0001; 14.12±2.09 kPa vs. 11.5±1.56 kPa, p<0.0001; 14.49±2.09 cm vs. 13.05±1.86 cm, p=0.004, respectively). Thrombocytes were significantly fewer in patients with EV (90,125±34,425 vs. 135,738 ± 58,905, p=0.0001).

In univariate analysis, SSM, LSM, spleen size and thrombocytes were associated with the presence of EV, all p<0.0001. In multivariate analysis, the model including SSM, LSM, spleen size and thrombocytes had the following p-values: p=0.01, p=0.01, p=0.03 and p=0.01. Using these factors as predictors, by multiple regression analysis we obtained the following score: Presence of EV=0.04*SSM + 0.06*LSM + 0.04*spleen size – $1*10^{-6}$*thrombocytes -1.17. The score had a cut-off value >0.48 (AUROC=0.9, Se=95.8%, Sp=96.3%, PPV=97.9%, NPV=92.9%) for predicting the presence of EV.

Conclusion: Using the model including SSM, LSM, spleen size and thrombocytes we can rule in the presence of EV with a positive predictive value of 97%.

THE CONTRIBUTION OF ADVANCED ELASTOGRAPHY IN THYROID NODULES EVALUATION

Mihaela Vancu[1], Laura Eugenia Lucan[1]

[1]Center of Excellence in Ultrasonography DOCTOR VANCU, Internal Medicine & Ultrasonography, Craiova, Romania mihaela_vancu@yahoo.com

Elastography has become an additional tool for thyroid nodule differentiation, in combination with conventional ultrasonography and biopsy.

Materials and Methods: Shear wave elastography (SWE) using Virtual Touch Imaging Quantification (VTIQ), was performed by two physicians at one location, for different indications and also on asymptomatic patients on their request, using Acuson S2000 HELX. SWE is performed with a linear probe held with slight pressure and the patient in breath hold. With over four years of advanced elastrography experience and over 2300 thyroid investigations, including patients between 16-88 years old, we selected a few representative cases with multiple benign changes, malignant looking benign changes and typical malignant changes, according the ultrasonographic features to the TI-RADS US classification system.

Results: VTIQ can differentiate thyroid nodules in the presence of autoimmune thyroiditis. The shear wave speed measured by VTIQ is significantly higher in malignant lesions than benign ones, with the value higher than 3.0m/s, strongly suggestive for suspicious lesions. Cancers tend to be stiff and heterogeneous than benign lesions (papillary carcinoma). Follicular carcinomas, medullary, nondifferentiated and metastatic carcinoma can be soft and difficult to differentiate from benign nodules.

Conclusion: Knowing cancer's structure is changing faster than benign lesion, the advanced elastography is a useful complementary tool for monitoring thyroid lesions as TI-RADS: 3 and TI-RADS: 4, before or after biopsy.

Keywords: advanced elastography, thyroid nodules, cancer

VIDEO CASE PRESENTATIONS

A RARE CASE OF MESENTERIC ARTERY ANEURYSM IN A HEMODIALYSED PATIENT

Mirela Gliga[1,2] , Cristian Chirila[3], Anca Bandea[1], Anca Georgescu[4] , Atilla Frigy[2], Paula Chirila[5]

[1] Diaverum Dialisys Center Tirgu Mures, Romania
[2] UMFST, Department of Internal Medicine, Tirgu Mures, Romania
[3] University of Medicine, Pharmacy, Science and Technology, PhD student, Tirgu Mures, Romania
[4] UMFST, Department of Infectious Disease, Tirgu Mures, Romania
[5] UMFST, student, Tirgu Mures, Romania

Introduction: Aneurysms of the abdominal arteries are very rare and one of the causes is the mycotic aneurysms after mitral valve endocarditis. We describe the case of a young hemodialysed female, diagnosed with mitral valve endocarditis complicated in the evolution with embolisation in superior mesenteric artery.

Material and Methods: A 38-year old female, dialysed for 3 years, presents with dyspnea, mitral valve murmur, aggravation of anemia and elevated non-specific inflammatory parameters. Endocarditis of the mitral valve was diagnosed. After 6 weeks of treatment, she developed acute abdominal pain, gastroenterological and surgical consultations being repeatedly required. The following investigations were performed: echocardiography, abdominal Doppler ultrasound, abdominal contrast CT-scan and angio MRI. The final diagnosis of aneurysm of the superior mesenteric artery (SMA) was established.

Results and discussion: The diagnosis of mitral valve endocarditis was made by echocardiography, both transthoracic and transesophageal and antibiotics were administered according to the hospital guidelines. The vascular access for hemodialysis was a central venous catheter wich was not infected. Clinical status improved, but suddenly acute abdominal pain occurred during the dialysis session. The abdominal ultrasonography revealed a focal lesion with echogenic appearance in the region of the SMA, with a weak color Doppler signal and high resistance in the prelesional area at the origin of the artery suggesting an micotic aneurism confirmed by CT scan and MRI.

Conclusion: A rare but possible site of embolisation in a mitral valve endocarditis can be the mesenteric artery. Special attention is required for the vascular access. An interdisciplinary team led by the nephrologist and internist can be lifesaving.

Keywords: aneurism, endocarditis, ultrasound.

LEFT ATRIUM THROMBOEMBOLISM MIMICKING INTERMITTENT UPPER LIMB ISCHEMIA IN A PATIENT WITH PERIPHERAL ARTERIAL DISEASE – CASE REPORT

Michael Pelea, Bogdan Augustin Chis, Daniela Fodor

2nd Medical Dept, "Iuliu Hatieganu" University of Medicine and Pharmacy, Cluj-Napoca, Romania

Aim: Peripheral arterial disease is one of the most common and most severe manifestations of atherosclerosis that causes a progressive narrowing of the blood vessels, limiting blood supply to the limbs, with consecutive intermittent claudication, or complete occlusion of the vessel. The most frequent mechanism of acute ischemia in patients with peripheral arterial disease is in situ thrombosis. Atrium thrombosis is the formation of a blood clot that occurs most frequently inside the left atrium in patients with atrial fibrillation and is one of the major causes of thromboembolic disease.

Material and method: We present the case of a 65 year old patient with a medical history of peripheral arterial disease (Leriche-Fontaine stage IV) and atrial fibrillation, under anticoagulation therapy, who was admitted to our clinic for pain and paraesthesia in the upper right limb.

Results: Upon physical examination the upper right limb was pale with peripheral pulse that was intermittently palpable. Arterial Doppler examination identified a mobile thrombus in the distal portion of the brachial artery and intermittent blood flow limitations in the ulnar and radial arteries. Cardiac ultrasound examination also identified a thrombus in the left atrium. The patient was transferred to the cardiovascular surgery ward and thrombectomy with a Fogerty catheter was performed with complete reperfusion of the blood flow in the limb.

FIBROUS ORGANIZATION OF SPLENIC HEMATOMA WITH VASCULAR SIGNAL AT ULTRASOUND EXAMINATION

Alina Bianca Giurgiu[1], Radu Badea[1,2], Lidia Munteanu[1,2], Monica Platon-Lupsor[1,2]

[1] Universitatea de Medicină și Farmacie "Iuliu Haţieganu", Cluj-Napoca
[2] Institutul Regional de Gastroenterologie și Hepatologie Prof. Dr. Octavian Fodor, Cluj-Napoca

Introduction: Echographic finding of a focal lesion of the spleen, requires proper etiologic diagnosis.

Material and method: We report the case of a 71 years old female patient, who presented at our department complaining of unspecific upper abdominal pain. The personal medical history revealed the presence of breast cancer for which the patient underwent chimio-radiotherapy (10 years ago) and a toracoabdominal traumatic injury (7 months ago).

Results: Abdominal Ultrasound identified a focal lesion of the spleen, of 7 cm diameter, well defined, with inhomogeneous appearance and

vascular signal on Doppler examination. CEUS showed rapid enhancement of the contrast agent within the lesion during the arterial phase, followed by slow washout during the venous and parenchymal phase. The abdominal contrast CT scan revealed a spontaneous isodense lesion, with inhomogeneous contrast enhancement, less than the rest of the splenic parenchyma. Concidering the toracoabdominal traumatic injury and the lack of alarm symptoms, we first suspected splenic hematoma. This particular diagnosis could not explain, however, the vascularization within the lesion and thus, the possibility of malignancy colud not be excluded. Therefore, splenic biopsy was indicated and the histopathology results showed fibrohyaline tissue containing blood vessels, neutrophils, plasmocytes, histiocytes and giant cell granulomas, suggesting a fibrous organization of a splenic hematoma. Immunophenotyping infirmed the suspicion of breast cancer metastasis.

Conclusion: Fibrous organization of splenic hematoma with vascular signal at Ultrasound examination represents a diagnosis challenge for every physician. Considering the breast cancer history and the presence of vascular signal at the Doppler and CEUS examination, breast cancer metastasis was considered a potential diagnosis, infirmed however by immunophenotyping.

THE ROLE OF ULTRASOUND IN ESTABLISHING THE CAUSE OF SECONDARY HYPERTENSION - A CASE REPORT

Mirela Liana Gliga[1] , Ottilia Erdélyi[2], Paula Chirila[3], Cristian Chirila[4]

[1] Senior Lecturer, Departament of Internal Medicine, University of Medicine, Pharmacy, Science and Technology Tg Mures
[2] Internal medicine resident, County Emergency Clinical Hospital Tg Mures
[3] Student, UMFST, Tg Mures
[4] PhD student, UMFST, Tg Mures

Objective: The most frequent causes of secondary hypertension are: reno-parenchimatous, reno-vascular and endocrine diseases. In all cases, ultrasound (US) examination is the first choice of investigation, followed by a CT/MRI scan.

Material and method: We report the case of a 28-year-old female pacient, known with arterial hypertension for 3 years, with no previous medical investigations, admitted to the Nephrology department, with the following symptoms: severe weakness, muscle pain, muscular cramps initially at the legs, then the thigh, superior limbs, neck and high blood pressure. Laboratory analyses revealed a severe hypokalemia and high creatine kinase levels (rhabdomyolysis caused by hypokalemia). Abdominal US, renal Doppler US and an abdominal CT were performed, followed by hormonal investigations.

Results: The abdominal US in an oblique-intercostal view of the left lobar region, showed a round-shaped hypoecogenic mass, well-delineated, located in the region of the left suprarenal gland. The right suprarenal had a normal appearance. No other notable modifications were observed. Doppler parameters af the renal arteries were normal. The contrast-enhanced abdominal CT scan confirmed the hypodense lesion 24/16 mm in size on the left suprarenal gland, with slightly vascular enhancement, suggesting an adenoma.

Conclusions: Renal and suprarenal glands US examination is mandatory in young patients with suspicion of secondary hypertension. Final diagnosis is established by CT-scan and hormonal investigations. Although the left suprarenal gland is more difficult to be examined in US, a good spatial resolution and an experimented examiner could identify it.

Keywords: ultrasound, hypertension, renal

TRANSESOPHAGEAL EUS FINE NEEDLE CORE BIOPSY OF A DORSAL VERTEBRAL BODY OSTEOLYTIC METASTASES.

Romeo Ioan Chira[1], Alina Florea[2], Alexandra Chira[3], Liliana Rogojan[4], Vlad Ichim[5]

[1]Emergency Clinical County Hospital Cluj, 1st Medical Clinic, Gastroenterology Department, „Iuliu Hatieganu" University of Medicine and Pharmacy, Department of Internal Medicine, Cluj-Napoca, Romania;
[2]"Prof. Dr. Ion Chiricuta" Oncology Institute, Cluj Napoca, Romania;
[3]"Iuliu Hatieganu" University of Medicine and Pharmacy, 2nd Medical Clinic, Department of Internal Medicine, Cluj-Napoca, Romania;
[4]Emergency Clinical County Hospital, Department of Pathology, Cluj-Napoca, Romania;
[5]Iuliu Hatieganu" University of Medicine and Pharmacy, 1st Medical Clinic, Department of Internal Medicine, Cluj-Napoca, Romania;
romeochira@yahoo.com

Vertebral primary tumors or metastasis represent a difficult target for percutaneous biopsies, which are performed usually under computed tomography (CT) or ultrasound (US) guidance. To our knowledge, there are only two case reports of EBUS guided vertebral metastasis that have been published – one using a transtraheal approach, the other using a transesophageal approach with ecobronchoscopes, but none using a transesophageal ecoendoscope.

A 62 year old-man presented for dorsal pain with left intercostal irradiation, associated with progressive left abdominal upper quadrant pain, symptoms that have appeared 3 months prior to the presentation in our department. A thoracic CT scan revealed a right upper lung lobe tumor with osteolytic metastasis located at lower cervical and dorsal vertebral bodies. Transthoracic US did not reveal the tumor, but after analyzing the CT scan, we considered that a transesophageal EUS-FNA biopsy of the dorsal vertebral body metastasis can be feasible. We performed the EUS examination with a linear Olympus® echoendoscope which revealed two osteolytic protruding tumors originating from vertebral bodies. We performed EUS - FNA – 3 passages with a 22G needle, procuring cylindrical tissue specimens – a core biopsy. Histo-

pathological examination revealed malignant tissue with features of metastatic adenocarcinoma (CK7 positive and TTF-1 negative), generally correlated with a unfavorable prognostic.

To our knowledge, our case is the first to use an endoscopic ultrasound device designed for transesophageal examination for a core biopsy of a dorsal vertebral osteolytic lesion, providing the diagnosis of vertebral metastases originating from lung adenocarcinoma.

Keywords: US guided biopsy, endosonography, EUS FNA, vertebral metastases, lung cancer

THE IMPORTANCE OF ULTRASONOGRAPHY IN DETECTING UNUSUAL RETROPERITONEAL CHONDROSARCOMA ARISING IN THE RIBS

Mihai-Răzvan Ognean[1], Radu Badea[1], Lidia Munteanu[1,2], Ioana Rusu, Monica Platon-Lupșor[1,2]

[1] Iuliu Hațieganu University of Medicine and Pharmacy Cluj Napoca
[2] Regional Institute in gastroenterology and hepatology Prof. Dr. Octavian Fodor, Cluj-Napoca
E-mail: ogneanrazvan@yahoo.com

Introduction: Chondrosarcoma is an uncommon malignant neoplasm of cartilaginous origin, which accounts for approximately 20% of primary malignant bone tumors. It often arises in long bones, pelvis, and is relatively rare for chondrosarcoma to arise in the ribs. Computer tomography (CT-scan) remains the gold standard for diagnosing chondrosarcoma, ultrasonography (US) being an atypic method to detect it.

Case presentation: We discuss a case of a 34-year-old female, who presented in our service with nonspecific right upper quadrant pain in relation with breathing. A routine abdominal US was performed, identifing a 70/50mm heterogeneous, hypoechoic, encapsulated mass, mimicking a liver tumor. At a closer look, US identified that the mass was actually immobile during the normal breathing liver and kidney mobilisation. The Colour Doppler exam demontrated the blood flow of the solid mass and CEUS revealed central to peripheral enhancement in the arterial phase and hypovascular areas sugesting intratumoral necrosis. Elastography showed a hard pattern of the mass. Contrast enhanced CT confirmed all the previously mentioned tumor characteristics. The patient underwent total surgery tumor resection, without any intraoperative complications. The histopathological asssesment revealed a moderately differentiated chondrosarcoma with the origin in the 11th rib.

Conclusion: The retroperitoneum can host a wide spectrum of pathologies, including a variety of tumours, sarcomas being the most common retroperitoneal masses. Chondrosarcoma is a very rare, aggressive malignancy, its retroperitoneal location making it more challenging due to its asymptomatic and nonspecific debute. We emphasise the importance of US, CEUS and elastography in accidental finding of reptroperitoneal chondrosarcoma.

Keywords: retroperitoneal, chondrosarcoma, ultrasonograhpy, CEUS, elastography

GALLSTONE ILEUS – CASE REPORT

Valentin Militaru[1], D Chirila[1], M Coman[1], M Ciocan[1], V Sfirlea[1], Sorin Crisan[1]

Iuliu Hațieganu University of Medicine and Pharmacy Cluj Napoca

Gallstone ileus is a rare pathology, accounting for 1 to 4% of the intestinal obstruction cases and affecting 0.5% of the gallstones patients. It occurs mainly in elderly women, as a result of a stone migration through a fistula, usually cholecysto-duodenal.

Aim of study: presentation of the case of a patient with recurrent gallstone ileus.

Materials and Methods: we collected the clinical, imaging, therapeutical data and the follow up written in the medical records of a patient hospitalized as an emergency in the Municipal Hospital in Cluj-Napoca.

Results: The patient, a 90 years old female having cardiovascular, metabolic and renal pathology, presented in the emergency department displaying the clinical signs of intestinal obstruction, which started 3-4 days before. Abdominal ultrasonography showed intestinal obstruction, aerobilia and found a 3 cm diameter reflective image with acoustic shadowing in an enteral loop, in the right flank. The suspicion of gallstone ileus was confirmed by noncontrast-enhanced abdomino-pelvic CT scan, which also showed the cholecysto-duodenal fistula. The surgical jejuno-lithotomy was performed. Postoperative evolution was favorable. Two weeks after the first intervention the patient came back to the hospital for a second gallstone ileus. Surgical reintervention was done, the patient undergoing jejunal segmental resection. Postoperative evolution was favorable.

Conclusion: gallstone ileus, a rare complication of gallstones, may be the onset modality of gallstones and has the potential to relapse between the surgical extraction of the causative calculus and the surgical closing of the cholecysto-duodenal fistula.

Keywords: intestinal obstruction, gallstones, fistula.

BLEEDING AFTER PERCUTANEOUS MICROWAVE ABLATION: SUCCESSFUL TREATMENT WITH PERCUTANEOUS ULTRASOUND GUIDED CYANOACRYLATE GLUE EMBOLIZATION

Tudor Mocan[1,2], Oana Popa[2], Daniela Matei[1,2], Zeno Sparchez[1,2]

[1]3rd Medical Department, "Iuliu Hatieganu" University of Medicine and Pharmacy Cluj-Napoca, Romania
[2]Institute for Gastroenterology and Hepatology, Cluj-Napoca, Romania

Aim: To report the first case of percutaneous ultrasound guided cyanoacrylate glue embolization in one patient with arterial bleeding after microwave ablation.

Materials and Methods: A 64-year old male with the diagnosis of Child-Pugh A liver cirrhosis secondary to hepatitis B virus infection and clinically significant portal hypertension was referred to us for the curative ablation of a single 28 mm HCC nodule located in segment VII. A cool-tip 20 cm long microwave antenna coupled to a microwave generator was placed inside the target lesion using ultrasound guidance. Immediately after ablation, along the track ablation path a vessel-like structure extending from the ablated nodule trough the liver was noted on conventional ultrasound. Both color Doppler and contrast enhanced ultrasound confirmed the presence of active arterial bleeding. After patient gave informed consent we decided to perform cyanoacrylate glue embolization.

Results: Under US guidance, a 20 gauge spinal needle was used to target the injured vessel. The tip of the needle was placed into the bleeding lesion closed to the liver capsule. Once the needle was in position, 1 mL of cyanoacrylate glue was injected in bolus. Upon injection the bleeding was stopped. 2 days after the procedure CEUS showed complete necrosis of the HCC and no bleeding.

Conclusion: In cases of active bleeding immediately after tumor ablation percutaneous ultrasound guided cyanoacrylate glue embolization could be helpful.

A RARE LIVER MALIGNANCY - LIVER ANGIOSARCOMA: CASE REPORT

Ana-Maria Ghiuchici[1], Mirela Danila[1], Maria Cornianu[2], Nicoleta Iacob[3], Ioan Sporea[1]

[1]Department of Gastroenterology and Hepatology, "Victor Babeş" University of Medicine and Pharmacy Timisoara, Romania
[2] Department of Pathology, "Victor Babeş" University of Medicine and Pharmacy Timisoara, Romania
[3] Neuromed Diagnostic Imaging Center Timisoara, Romania

A 41-year-old male patient, with no known pathology, with a 1-2 weeks history of pain and heaviness in upper abdomen and intermittent fever presented for ultrasound and ambulatory consultation. 6 months prior presentation a CT examination raised the suspicion of multiple focal liver lesions that were interpreted as cystic lesions.

Ultrasound examination revealed multiple focal liver lesions: one hypoechoic, inhomogeneous lesion in the right liver lobe of 6/7, a second subcapsular lesion in the left hepatic lobe of 5/6 cm with a perihepatic transonic component-a possible efraction, and other multiple hypoechoic/transonic lesions of 1 cm disseminated in the left liver lobe. The pacient had also splenomegaly and a 6.5 cm hyperechoic splenic lesion.

Patient was admitted Department of Gastroenterology and Hepatology for further investigation.

Laboratory tests showed mild leukocytosis, markers of viral hepatitis B and C- negative. Tumor markers including carcinogenic embryonic antigen (CEA), carbohydrate antigen 19-9 (CA19-9) and alpha-fetoprotein were normal.

CEUS examination for the lesion in the left hepatic lobe showed a heterogenous hypoenhancement pattern with intense washout in the late phase suggesting malignancy- and a nonenhancing perihepatic area. The lesion in the right liver lobe had the same enhancement pattern. Other washout areas (1-2 cm in size) were visible in the late phase in the left hepatic lobe. The conclusion of CEUS examination was secondary lesions. The splenic lesion had a pattern on CEUS conclusive for splenic metastases.

Abdominal contrast enhanced computer tomography (CT) described the presence of multiple hypodense liver lesions in both liver lobes and also in the spleen. The conclusion of CT study was uncertain: liver abscesses? secondary lesions?

A percutaneous US aspiration was performed from the lesion in the LHL – 20 ml of hemorrhagic fluid. The patient was referred for surgery. Surgical protocol included atypical resection of the lesion from the LHL segment III/IV. During surgery the following observations were made: multiple hepatic lesions disseminated in both liver lobes hemangiomas-like lesions and a lesion in segment VIII of 8/6cm in diameter with macroscopic aspect of hemangioma; spleen with a macroscopic cystic lesion at the upper pole of 6/4 cm.

The histopathological and immunohistochemistry report of the resected tumor was conclusive for the diagnosis of high grade hepatic angiosarcoma with solid and sinusoidal/vascular pattern and large confluent areas of tumor necrosis and haemorrhage; extensive foci of supurative necrosis. The patient died 2 moths after surgery. Primary hepatic angiosarcoma is a rare but aggressive malignancy and is the most common primary malignant mesenchymal tumor of the liver in adults.

A RARE CASE OF GIANT MUCINOUS BORDERLINE TUMOR OF THE RIGHT OVARY WITH MURAL NODULES TYPE ANAPLASTIC CARCINOMA ASSOCIATED WITH MATURE TERATOMA OF THE LEFT OVARY DETECTED ULTRASONOGRAPHICALLY

Bogdan Gherghel[1], Radu Harsa [2], Gheorghe Cruciat[2], Anca Pereat[3], Doinita Crisan[4], Larisa Pop[4]

[1]City Hospital Turda, External Department Iara, Romania, email: gherghelbogdan2@yahoo.com
[2]Emergency County Hospital Cluj-Napoca, Department of 1st Gynecology, Romania
[3]Interservisan Medical-Surgical Center Cluj-Napoca, Romania
[4]Emergency County Hospital Cluj-Napoca, Department of Pathology, Romania

Giant ovarian tumors are rare. Most of them are benign and they are usually diagnosed in smaller sizes by routine, gynecological or ultrasound examination. Borderline ovarian tumors (BOT) are epithelial ovarian neoplasms, intermediate between benign and malignant categories. The mucinous subtype (approximately 11% of BOT) can reach large dimensions. Coexisting mural nodules in BOT as well as association of BOT with teratomas are rare situations. We report a case of giant cystic ovarian tumor (maximum diameter> 25 cm, extending from the pelvis to the epigastrum, at ultrasound being predominantly anechoic, and at the right lateral wall, with small segmented hyperechogenic nodules containing microcysts inside) detected by pelvic abdominal ultrasound in a 69-year-old patient, obese, who suffered from low grade abdominal discomfort and effort dyspnea. The patient comes from the countryside, with a long-distance home of urban settlements, with limited access to complex medical services, being initially hospitalized in an external (rural) section of a city hospital. Following the additional imaging tests and then the surgical excision, respectively the anatomopathological examination, a giant mucinous bordeline tumor of the right ovary was diagnosed with intraepithelial carcinoma and mural nodules of anaplastic carcinoma associated with a mature teratoma of the left ovary. Postoperatively, the patient was progressing well, being discharged 7 days after surgery and with oncology follow-up recommendation. The specificity of the case is represented by the rare association of three histological types of ovarian tumors and minimal clinical symptomatology in contrast to tumor size.

Keywords: giant cystic ovarian tumor, mucinous bordeline ovarian tumor, malignant mural nodules, ovarian teratoma, ultrasonography

POSTERS

METABOLIC PARAMETERS INFLUENCE IN LIVER DIMENSIONS

Bogdan Augustin Chis, Michael Pelea, Daniela Fodor

2nd Medical Dept, "Iuliu Hatieganu" University of Medicine and Pharmacy, Cluj-Napoca, Romania

Background: Metabolic syndrome (MS) incidence has grown in the last decades. Non alcoholic fatty liver disease is a major health problem in industrialised countries. Ultrasound (US) examination is a fast and easy method to evaluate the liver dimensions. The study aims to evaluate the corelations between liver dimensions found by US evaluation and MS parameters.

Material and methods: 27 patients, 9 men and 18 women, were included, 60,52±12,83 y.o. Body mass index (cutt off 30kg/sqm), abdominal circumference (cuttoff 100cm), mean blood pressure (cutoff 93mmHg, for 120/80 mmHg), total cholesterol (cuttoff 200mg/dl), triglycerides (cuttoff 150mg/dl), blood sugar level (cuttoff 100mg/dl) were computed on admitance. Ultrasound evaluation of the liver was performed, with an General Electric Logiq S7 Ultrasound Machine, using a 1-6 MHz convex transducer, and right(RL), left (LL) and caudate lobe (CL) lenghts were determined.

Results: All lobes lenghts were higher in patients with hypertriglyceridemia, but only significant in RL (p=0,017). No statistical significance was found for hypercolesterolemia. LL was significant bigger (p=0,032) in hiperglycemic patients, while RL was borderline significant (p=0,061). CL was the only dimension significantly higher in obese (p=0.036) and patients with high abdominal circumference (p=0,01). RL was higher in hygh blood pressure patients (p=0,034).

Conclusion: CL dimensions is more sensitive for obese patients, while carbohidrate parameters corelated with higher RL and LL.

Keywords: liver dimensions, ultrasound, metabolic syndrome

TECHNICAL ASPECTS OF A NOVEL ELASTOGRAPHY TECHNIQUE – TIME HARMONIC ELASTOGRAPHY (THED) AND THE LIVER STIFFNESS VALUES IN HEALTHY VOLUNTEERS

Alexandru Popa[1], Tudor Moga[1], Roxana Sirli[1], Alina Popescu[1], Raluca Lupusoru[1], Andrea Zschätzsch[1], Meghana Enumula[1], Mirela Danila[1], Heiko Tzschätzsch[2], Anton Schlesinger[2], Ingolf Sack[2], Ioan Sporea[1]

[1]. „Victor Babeş" University of Medicine and Pharmacy, Timisoara, Romania.
[2]. Charité-University Medicine Berlin, Berlin, Germany.

The objective of this study is to evaluate how many measurements are needed for the non-invasive assessment of fibrosis by the new elastography technique THED and also to define the normal liver stiffness(LS) values in healthy subjects.

Material and Method: We evaluated by THED and transient elastography(TE) a group of 183 patients: 44-healthy subjects(normal abdominal ultrasound, without any known liver disease and with a TE value <6.5kPa) and the rest with chronic hepatopathies. In all patients, 10 valid LS measurements were obtained in the same day, both with THED and with TE, using IQR/M<30% as a quality criterion. The following TE cut-off values were used to stage fibrosis in the chronic hepatopathies group: F1≥6.5kPa, F2≥7kPa, F3≥9.5kPa, F4≥12kPa(1).

Results: Reliable LS measurements were obtained in all 183 patients (54.6% male, mean age 56.5±12.4 years) by means of both methods. According to TE, fibrosis severity was:F4-24.5%(45/183p),F3-6%(11/183p),F2-14.7%(27/183p),F1–12%(22/183p), F0-42.6% (78/183).

There were no differences between the mean LSM obtained with 5 THED measurements vs. with 10 THED measurements: 1.66±0.26m/s vs. 1.65±0.24m/s, p=0.48.

In the subgroup of 44 healthy volunteers (48.8% men, mean age: 37.7±2.38, average BMI=25.6 kg/m2), the mean LS value was 1.49±0.01 m/s. There were no significant differences between the mean LS values in healthy men vs. healthy women, 1.52±0.06m/s vs. 1.47±0.01m/s (p=0.1).

Conclusion: Five valid measurements may be enough to quantify the liver fibrosis THED elastography, without significant loss of accuracy, thus reducing the examination time. The mean liver stiffness values by THED in healthy subjects was 1.49±0.01m/s.

(1). Tsochatzis EA, Gurusamy KS, Ntaoula S et al. Elastography for the diagnosis of severity of fibrosis in chronic liver disease: A meta-analysis of diagnostic accuracy. J Hepatol 2011;54:650.

ULTRASONOGRAPHY - INDISPENSIBLE SHIELD FACING MALPRAXIS

Mihai Munteanu, Adrian Coțe, Radu Fodor, Ciprian Brisc

Oradea Emergency County Hospital, Department of Gastroenterology
Oradea Univestity, Faculty of Medicine
mihaimunteanual@yahoo.com

We present the case of a 38-year-old patient who presented in the emergency department for asthenia and fatigue, interscapulo-vertebral pain, with about 2 days of onset. As a result of the investigations carried out in emergency (clinical examination, abdominal ultrasound - peritoneal collection; cardiological examination), a normochrome, normocytic anemia of uncertain etiology and an ascitic collection of undetermined etiology were found. We were called to admit the patient on the gastroenterology department in order to continue diagnostic work-up.

We restarted the anamnesis, which revealed a minor lumbar trauma, and we repetead the ultrasound examination, which revealed an hypoecogenic, vague, irregular contour of the spleen, in addition to the peritoneal collection. Diagnostic paracentesis was performed, with the appearance of fresh blood, and then the diagnostic balance continued with abdominal CT with contrast substance. The diagnosis of post-traumatic splenic rupture, hemoperitoneum, normochrome, normocytic anemia was established, and the therapeutic conduct consisted of total splenectomy.

Abdominal ultrasound examination was essential in establishing the diagnosis, being the one that drew attention to the background splenic pathology, which subsequently dictated the therapeutic conduct, without which the patient's prognosis would have remained reserved. This case illustrates the importance of controlling the ultrasound method so that the patient benefits from the most correct therapeutic approach and the physician is able to go through a wide range of differential diagnoses in order to correctly establish the positive diagnosis.

Keywords: peritoneal effusion, splenic rupture, hemoperitoneum

---

ULTRASOUND-BASED ELASTOGRAPHY METHODS FOR PREDICTING THE PRESENCE OF ESOPHAGEAL VARICES IN PATIENTS WITH ALCOHOLIC LIVER CIRRHOSIS

Camelia Foncea, Alina Popescu, Raluca Lupusoru, Roxana Sirli, Mirela Danila, Ioan Sporea

Department of Gastroenterology and Hepatology, "Victor Babes" University of Medicine and Pharmacy Timisoara, Romania

Background and Aim: Liver stiffness (LS) measurement by elastographic methods is a noninvasive technique for the evaluation of liver fibrosis, which could also be used for predicting the presence of esophageal varices (EV) in patients with liver cirrhosis. The aim of this study was to evaluate two ultrasound based elastographic methods as non-invasive markers for predicting the presence of EV, in a cohort of alcoholic liver cirrhosis patients.

Material and method: The study included 77 patients diagnosed with compensated alcoholic liver cirrhosis, who underwent both upper endoscopy and LS assessment by: Transient Elastography(TE) (Fibroscan/EchoSens) and pSWE-Virtual Touch Tissue Quantification(VTQ) (Siemens Acuson S2000). Reliable LS measurements were defined for both methods as the median values of 10 measurements with IQR/M<30%. We used TE as the reference method to diagnose liver cirrhosis (LS ≥12 kPa) [1]. Patients with ascites were excluded due to the impossibility to perform TE.

Results: 56 patients out of 77 had valid measurements by both elastographic methods and were included in the final analysis, 40/56 patients with EV. The best cut-off values to rule out the presence of EV in our cohort, with a NPV of 100% were: ≤20.1 kPa for TE(AUROC 0.9; Se100%; Sp 28%; PPV 56%; NPV 100%, Lr- 0, LR+1.38) and ≤2.1 m/s for VTQ(AUROC 0.85; Se100%; Sp 18%; PPV- 52%; NPV- 100%, Lr- 0, LR+1.21).

Conclusion: Using for TE the cut-off value ≤20.1 kPa and for VTQ≤2.1 m/s we can rule out quite accurately the presence of EV in patients with alcoholic liver cirrhosis.

Keywords: elastography, liver stiffness, esophageal varices

References:

IMPACT OF FOOD INTAKE ON LIVER STIFFNESS MEASURED BY TRANSIENT ELASTOGRAPHY

Alexandra Lupașcu[1], Alina Mihaela Leuștean[1], Elena Betisor[1], Raluca Cezara Popa[1], Cristina Cijevschi-Prelipcean[1,2], Cătălina Mihai[1,2]

[1]Institute of Gastroenterology and Hepatology, „St. Spiridon Hospital", Iași
[2]University of Medicine and Pharmacy "Gr. T. Popa", Iași

Introduction and Aim: In recent years, liver biopsy was replaced by non-invasive methods in the assessment of hepatic fibrosis (transient elastography, real time elastography, FibroTest). The aim of this study was to test whether there is any connection between food intake and the assessment of liver stiffness (LS) measured by non-invasive methods (Fibroscan) in the case of HCV infected patients.

Methods: We conducted a single-center retrospective study over a period of 2 years (January 2017 - January 2019). 66 patients with confirmed diagnosis of HCV infection which were evaluated in order to determine whether or not they qualify for the interferon free therapy and 25 healthy volunteers were enrolled in the study. Demographic, clinical characteristics and laboratory findings were collected from medical records. All patients included underwent Fibroscan. LS was measured before and 30 minutes after receiving a standard mixed solid meal.

Results: 91 subjects (66 HCV patients/25 healthy volunteers) were included in the study. The mean BMI was 25.6 ± 4.5 kg/m^2. In the HCV group, 52 had moderate fibrosis (F1-F3) and 14 cirrhosis (F4). LS significantly increased 30 min after food intake (pre-meal 9.1 kPa vs. after-meal 9.8 kPa; $p < 0.001$) in patients with HCV infection. There was no statistically significant difference in LS value measured before/after food intake in healthy volunteers. LS values increased after meals in all stages of fibrosis.

Conclusions: Our study demonstrates that LS measured by Fibroscan increases after food intake in patients with HCV infection. An accurate assessment of LS is important in these patients because its value represents an inclusion criteria for DAA therapy, therefore its measurement should be performed in standardized fasting conditions.

Keywords: Fibroscan, liver stiffness, fasting

HOW RELIABLE IS ULTRASOUND EXAMINATION IN DIAGNOSING BLASTOMAS IN CHILDREN ?

Virginia Bodescu[1], Sanda Lucia Voicu[1], Zsuzsanna Moreh[1], Zsuzsanna Papp[1], Cristina Rusu[2]

[1]UMFST Tg. Mures, Paediatric Department, Mures County Hospital, Tg. Mures, Romania,
[2]student at UMFST Tg. Mures, V-th year, Medicine English, Tg. Mures, Romania,
bodescuvirginia@gmail.com

Background: Blastoma, a solid cancer that affects stem cells in a fetus, is usually present at birth. and is more frequent in children than in adults. The main cause is a genetic dysfunction in cell differentiation, the result being the grow of an embryonic tissue in certain organs.

Matherial and method: The authors have studied all abdominal ultrasound performed in patients admitted to Pediatric Department of Mures County Hospital of Tg Mures in the last 10 years – more than 1500 per year. Based on ultrasonographic description and images, several cases of abdominal blastoma have been identified: neuroblastoma, nephroblastoma and hepatoblastoma. These are the most important types, and ultrasonography has an important role in their diagnosis, as the first imagistic investigation in a patient with or without suggestive clinical features. CT or MRI are mandatory to evaluate the extend of tumor, but ultrasound can orientate the diagnosis in the first place.

Conclusions: Abdominal ultrasonography is an useful tool as a first step in the diagnosis of a solid tumoral abdominal mass in children, often proved to be an embryonic tumors.

Keywords: embryonic tumors, ultrasound, child.

THE IMPORTANCE OF CONTRAST -ENHANCED ULTRASOUND IN THE DIAGNOSIS OF DYSPLASTIC NODULES IN CIRRHOTIC PATIENTS

Alina Mihaela Leuștean, Alexandra Lupascu, Andreea Otea, Raluca Cezara Popa, Cristina Cijevschi-Prelipcean, Cătălina Mihai

Institute of Gastroenterology and Hepatology ,Iasi, "St Spiridon Hospital "Iasi
University of Medicine and Pharmacy "Gr T.Popa"Iasi

Background and Aims: Dysplastic nodules are regenerative nodules but with atypical cells and they don't show clearly signs of malignancy. This study evaluates the usefulness of CEUS in the characterization of dysplastic nodules and early HCC.

Methods and materials: 64 cirrhotic patients with 110 nodules no more than 2 cm were evaluated in Institute of Gastroenterology and Hepatology Iasi using CEUS with SonoVue and were analysed retrospectively. The CEUS findings were compared with clinical data and other dynamic contrast imaging such as CT and MRI

Results: Enhancement patterns of all nodules were examined throughout the various vascular phases of CEUS and classified into 4 types. Type I, 47 (42.7%) nodules demonstrated simultaneous enhancement with the liver parenchyma and, therefore, the nodules appeared isoechoic to the liver throughout the arterial, portal and parenchymal phases. Type II, 29 (26.3%) nodules demonstrated delayed enhancement in the portal phase and then became isoechoic to the liver in parenchymal phase. Type III, 27 (24.5%) nodules presented delayed or simultaneous enhancement with the liver and then slight wash-out causing a hypoechoic appearance in the parenchymal phase. Type IV, 10 (9.09%) nodules presented slight enhancement with hyperechoic during arterial phase and slight wash-out with hypoechoic to the liver during the parenchymal phase. Type III and IV nodules (approximately 1/3) presented wash-out and could be mistakenly classified as malignant lesions.

Conclusion: Contrast -enhanced ultrasound may be helpful in predicting the progress from dyplastic nodules to HCC.

Keywords: nodules ,enhancement, parenchymal phase ,wash-out

ULTRASOUND FEATURES IN SMALL CELL LUNG CANCER- CASE REPORT

Ioana Duca, Romeo Chira, Ionela Miron, Doinita Crisan, Dan Lucian Dumitrascu

"Iuliu Hatieganu" University of Medicine and Pharmacy, Cluj-Napoca, Romania

Aim: Our case report demonstrates the importance of ultrasound for the detection of simultaneous lesions in a patient with few clinical features, as well as for performing maneuvers that lead to the final diagnosis.

Materials and Methods: We report the case of a 71-year-old patient, a former smoker, known with hypertension, heart failure, type2 diabetes mellitus, who was admitted for leg edema, without any dyspnoea. We performed: clinical examination, laboratory analysis, US (abdomen, thorax, thyroidian), liver-biopsy and histology.

Results: Clinical examination revealed mildly altered general condition, dullness and decreased vesicular sound in the left hemithorax basal, normal oxygen saturation, important pitting edema of the lower limbs, hepatomegaly with hard consistency and goiter.

Laboratory data showed cholestasis, hepatic cytolysis, hypoalbuminemia and hypoproteinemia, high levels of CEA(44.25 ng/ml), CA19-9(483U/ml3) and normal AFP.

Abdominal US showed several hyperechoic masses up to 7cm in both liver-lobes with hypoechoic rim, some with central necrosis, rising the suspicion of metastases, lymphadenopathy (2.2cm) in the area of the hilum, enlarged intrahepatic bile ducts, ascites.

Pulmonary US showed left pleural effusion, an inhomogeneous hypoechoic mass(8.5/7.2cm) near the left lung.

The final diagnosis was made by US-guided liver biopsy: metastases of small cell lung carcinoma. After 2months, after refusing chemotherapy, a new cutaneous hypoechoic lesion(1.2 cm) with hard consistency occurred at the site of the previous percutaneous liver puncture, and 2months later the patient died.

Conclusions: The peculiarities of this case are the scarce and late clinical manifestations in an advanced stage of small cell lung cancer in a former smoker patient.

Keywords: ultrasound, edema, metastases, lung carcinoma

PANCREATIC STIFFNESS VALUES USING A POINT SHEAR WAVE ELASTOGRAPHY TECHNIQUE IN PATIENTS WITH HEALTHY PANCREAS

Alexandru Popa[1], Roxana Sirli[1], Ruxandra Mare[1], Alina Popescu[1], Mirela Danila[1], Ioan Sporea[1]

[1]Department of Gastroenterology and Hepatology, «Victor Babeş» University of Medicine and Pharmacy Timişoara, Romania

In the current literature, there is only a small number of studies that have evaluated the utility of point share wave elastography for pancreatic assessment.

Objective: To assess the feasibility of Virtual Touch Quantification (VTQ) elastography for pancreas assessment, as well as the mean pancreatic stiffness values in healthy subjects.

Material and method: We included 70 subjects (52.8% women, 47.2% men, average BMI=25.9±4.9 kg/m2, average age 46.8±18.4 years) with a normal pancreatic ultrasound aspect and with no history of pancreatic disease or diabetes, in whom elastography measurements were performed with a Siemens Acuson S2000 Virtual Touch ultrasound system (Siemens AG, Erlangen, Germany) using a 4CI transducer. For each patient, 10 valid VTQ measurements of the pancreatic parenchyma were performed under fasting conditions. Reliable measurements were defined as a median value of ten pancreas stiffness measurements with a success rate ≥60% and an interquartile range interval <30%.

Results: Out of 70 subjects, reliable measurements were acquired in 61 subjects (87.1%) by means of VTQ elastography. The mean pancreas stiffness values in healthy subjects was 1.26 m/s ± 0.1 m/s, CI 95% (1.24-1.28). There were no significant differences between the mean pancreas stiffness in men vs. women 1.25 m/s ± 0.09 m/s, CI 95% (1.21-1.28) vs. 1.28 m/s ± 0.1 m/s CI 95% (1.25-1.31) (p=0.103).

Conclusion: VTQ can be a useful tool for pancreas quantification characterized by a good feasibility (87.1%) in healthy subjects. The mean pancreas stiffness values in healthy individuals was 1.26 m/s ± 0.1m/s.

Keywords: point share wave elastography, pancreas assessment, healthy subjects

PERFORMANCE OF TIME-HARMONIC ELASTOGRAPHY FOR LIVER FIBROSIS ASSESSMENT AS COMPARED WITH TRANSIENT ELASTOGRAPHY

Alina Simona Popescu[1], Tudor Moga[1], Ioan Sporea[1], Raluca Lupusoru[1], Alexandru Popa[1], Andrea Zschätzsch[1], Meghana Enumula[1], Camelia Gianina Foncea[1], Radu Cotrau[1], Roxana Sirli[1], Mirela Danila[1], Heiko Tzschätzsch[2], Anton Schlesinger[3], Ingolf Sack[2]

[1]Department of Gastroenterology and Hepatology, "Victor Babes" University of Medicine and Pharmacy, Timisoara, Romania
[2]Charite Universitätsmedizin Berlin, Germany
[3]Institute of Medical Informatics, Merseburg,Germany

Introduction: While most ultrasound elastography methods employ transient stimulation methods, the new time-harmonic elastography diagnostic system (THED) relies on time-harmonic vibrations in the same manner as MRI elastography (1). The aim of our study was to assess the performance of THED to diagnose different stages of fibrosis, considering transient elastography (TE) as reference method.

Material and methods: We evaluated by THED a group of 160 patients: (69 female and 91 male, mean age 56,5±12,4 years, mean BMI 27,9±5,2kg/m^2). The following TE cut-off values were used to stage fibrosis: F1≥6kPa, F2≥7kPa, F3≥9,5kPa, F4≥12 kPa(2). In all patients, 10 valid LS measurements were obtained in the same day, by THED and TE, with the results expressed in kPa. Quality criteria:SR≥60%, IQR<30% have been used for each subject.

Results: The feasibility was 100% in both TE and THED. The best cut-off value for different fibrosis stages were: F1 >1.5m/s(6.7kPa), AUROC=0.84, 95%CI(0.78-0.90), P<0.0001, Se=95.1%, Sp=21.5%, PPV=75.4%, NPV=83.3%; F2 >1.6 m/s(7.6kPa), AUROC=0.89, 95%CI (0.83-0.93), P<0.0001, Se=80.7%, Sp=81.8%, PPV=81.7%, NPV=80.5%; F3 >1.69m/s(8.5kPa). AUROC=0.87, 95%CI (0.81-0.92), P<0.0001, Se=75%, Sp=89.4%, PPV=79.2%, NPV=86.9%; F4 >1.75 m/s(9.1kPa) AUROC=0.92, 95%CI (0.87-0.95), P<0.0001, Se=80%, Sp=93%, PPV=81.8%, NPV=92.2%. There was a direct, positive and strong correlation between THED and TE: r=0.82, p<0.001.

Conclusion: The new THED system has good performance for predicting liver cirrhosis with a cut off value of >1.75 m/s(9.1kPa). There is a strong correlation between liver fibrosis measurements performed by THED and TE.

Keywords: elastography, THED, liver fibrosis

PORTAL VEIN THROMBOSIS IN CIRRHOTIC PATIENTS - CEUS CHARACTERIZATION, INCIDENCE AND CLINICAL PRESENTATION

Ana-Maria Ghiuchici, Mirela Danilă, Alina Popescu, Roxana Șirli, Mădălina Topan, Călin Burciu, Andreea Corobea, Ioan Sporea

Universitatea de Medicină și Farmacie"Victor Babeș", Timișoara.

Aim: Portal vein thrombosis is a frequent complication of liver cirrhosis. The aim is to evaluate the frequency of PVT in cirrhosis and the sensitivity of CEUS in the characterization of PVT.

Material and methods: We performed a retrospective study including 730 patients with liver cirrhosis admitted to the Department of Gastroenterology of SCJUT between January 2016-December 2017, respectively 450 men (61.6%) and 280 women (38.4%), mean age 61.7 ± 10.57 years. The parameters followed were: Child-Pugh score, presence of portal vein thrombosis, HCC. The diagnosis of portal thrombosis was determined by ultrasound examination by an expert in the field. The nature of portal vein thrombosis was assessed by contrast-enhanced ultrasound (CEUS), confirmed by another imaging method with contrast (CT scan/MRI).

Results: According to the stage of the disease, the patients were Child Pugh class A-29.8%; Class B –38.9% and Class C – 31.3%. Out of the 730 patients with cirrhosis, 79 (10.8%) had portal vein thrombosis described by ultrasound. Portal vein thrombosis was complete in 35/79 patients (44.3%) and partial in 44/79 (55.7%) cases. CEUS examination of portal thrombosis showed 54 malignant portal vein thrombosis (68.3%) and 25 benign portal vein thrombosis (31.7%). 94.1% (51/54) of patients with malignant portal thrombosis had hepatocellular carcinoma. Esophageal and gastric varices were present in 61/79 patients with portal vein thrombosis (77.2%). 39.3% of these patients (24/61) had a history of upper gastrointestinal bleeding by variceal rupture p<.0001.

Conclusions: Portal vein thrombosis was present in 10.8 % of cirrhotic patients. CEUS is a sensitive method for the characterization of PVT

in cirrhotic patients. 68.3% of cases the thrombosis was malignant and was associated with hepatocellular carcinoma.

Portal vein thrombosis in patients with esophageal and gastric varices is associated with increased risk of upper gastrointestinal bleeding due to variceal rupture p<.0001.

HOW MANY HCV CIRRHOTIC PATIENTS GO BELOW CIRRHOTIC CUT-OFF VALUES IN TRANSIENT ELASTOGRAPHY AFTER DIRECT ACTING AGENTS TREATMENT?

Alin Lazar[1], Ioan Sporea[1], Raluca Lupusoru[1], Alina Popescu[1], Isabel Dan[1], Alexandra Deleanu[1], Roxana Sirli[1]

[1]Department of Gastroenterology and Hepatology, "Victor Babes" University of Medicine and Pharmacy Timisoara, Romania

Objective: to evaluate the liver stiffness(LS) values after DAA(Direct-acting antivirals) therapy, in patients with compensated HCV cirrhosis, with sustained virologic response(SVR) and to highlight how many LS values become lower than the values for cirrhosis.

Material and method: We examined 167 patients who had LS>12 kPa at baseline, who underwent 12 weeks DAA therapy and had SVR. 56 of them were followed up by TE 24 and 48 weeks after EOT (end of treatment). A subgroup of 28 patients were followed up 96 weeks after EOT(SVR96). LS values were assessed by means of TE at the start of treatment (ST), at SVR12 (12 weeks from EOT), SVR24, SVR48 and SVR96, respectively. In each session, 10 LS measurements (LSM) were obtained. Reliable LSM were defined as median value of 10 measurements with Interquartile range/median≤30%.

Results: LS mean values at SVR12 were significantly lower as compared to ST(16.6±6.87vs 21.3±8.8 kPa p=0.002). As compared to SVR12, at SVR24 the mean LS values remained stable (16.6±6.87vs16.9±6.87kPa p=0.81) and at SVR48 the values continued to decrease, but without statistical significance (14.6±5.3vs16.6±6.87kPa p=0.08). LS was<12 kPa in 14% of patients at SVR12, in 16% at SVR24 and in 27% at SVR48. In the subgroup of 28 evaluated at SVR96, the LS decreased significantly as compared to SVR12(11.6±4.6vs15.5±6.2kPa p=0.009), and 46% had LS<12 kPa.

Conclusion: In compensated HCV cirrhotic patients, the mean LS values significantly decreased at SVR12, remained stable at SVR24 and decreased at SVR48. In the subgroup of patients followed up at SVR96, almost half had LS values lower than 12 kPa.

Keywords: liver stiffness, HCV cirrhosis, DAA treatment

THE PREVALENCE OF LIVER FIBROSIS STAGES ASSESSED BY TRANSIENT ELASTOGRAPHY: A SINGLE CENTER STUDY

Alin Lazar[1], Ioan Sporea[1], Isabel Dan[1], Alexandra Deleanu[1], Roxana Sirli[1]

[1] Department of Gastroenterology and Hepatology, "Victor Babes" University of Medicine and Pharmacy Timisoara, Romania

Objective: to highlight the prevalence of liver fibrosis stages assessed by transient elastography (TE) in a large cohort of patients in a single study center.

Material and method: 22400 liver stiffness(LS) assessments by mean of TE have been performed in our Department during an 11 years period(2007-2018). The study included patients with chronic liver diseases of various etiology. In each patient, 10 valid LS measurements were obtained either with M probe or with XL probe. If no valid LS measurements could be obtained, the evaluation was declared as failure. Reliable LSM were defined as median value of 10 measurements with Interquartile range/median (IQR/M)≤30%, and a Success Rate (SR)≥60%. To discriminate between LS stages by TE we used the following cut-offs[1]: F2-7 kPa; F3-9.5 kPa and F4-12 kPa.

Results: The feasibility in our cohort was 90.1%, 2238 of 22400 measurements(9.9%) were failed or unreliable. The etiology of chronic liver diseases evaluated by TE was: hepatitis C virus infection:35%(7838 patients), hepatitis B virus infection:20.5%(4601), dual hepatitis virus infection:1.5%(332), alcoholic liver disease:5.2%(1172), Non-Alcoholic Steatohepatitis (NASH):6.8%(1518), Both Alcoholic and Non-Alcoholic Steatohepatitis(BASH):0.3%(72) and other etiologies:30.7%(6867).

Based on TE cut-off values, the severity of liver fibrosis in our group was as follows:F<2:9783 patients(48.5%); F2:3132 patients(15.6%); F3:1714 patients(8.5%) and F4:5533 patients(27.4%).

Conclusion: Transient elastography had a feasibility of 90.1% in this large cohort, almost half of the patients(48.5%) having at most mild fibrosis, and approximately one quarter having cirrhosis (27.4%).

Keywords: liver fibrosis, Transient Elastography, feasibility

YOUNG AND RESTLESS – COULD IT BE MORE THAN ANOREXIA NERVOSA?

Zsuzsanna Jeremiás[1], Viorel Dejeu[2], Ernő Jerzicska[3], Simona Pogăcean[1], Rareș Filep[4]

[1]UMFST Tg Mures, Internal Medicine
[2]Oradea Emergency Hospital, Surgery
[3]Oradea Emergency Hospital, Cardiovascular Surgery
[4]Mures Emergency Hospital, Radiology

Aim: Abdominal ultrasound is routinely performed during the evaluation of abdominal pain syndrome, but often does not detect an organic cause of the pain. Vascular diseases of the abdominal arteries are rare and have non-specific symptoms and thus are difficult to diagnose, especially in the young.

Material and method: We present the case of a malnourished 19 year-old female, complaining of epigastric and periumbilical pain of moderately severe intensity, which increased after meals and in decubitus. The pain appeared after a drastic diet resulting in considerable weight loss and was not alleviated by proton pump inhibitors, prokinetic or antispastic medication. Previous imaging tests have ruled out an organic pathology and the patient was labeled as anorexic, for which she underwent psychotherapy.

Results: Due to the characteristics of the pain, which were suggestive of abdominal angina, vascular ultrasound of the abdominal arteries was performed, showing turbulent flow at the origin of the truncus celiacus with increased systolic velocities, more accentuated in expirium.

AngioCT examination confirmed the diagnosis of Dunbar's syndrome (extrinsic compression of the celiac artery by the median arcuate ligament of the diaphragm). Surgical decompression by mini-laparoscopic approach was performed after which symptoms subsided.

Conclusions: By presenting this case, authors would like to draw attention that a possible vascular etiology, although quite rare in young adults, may be the cause of abdominal pain and needs to be considered as a diagnostic alternative after ruling out other, more common causes.

Keywords: abdominal pain, abdominal ultrasound, median arcuate ligament

---

HOW MANY MEASUREMENTS ARE NEEDED FOR LIVER STIFFNESSN ASSESSMENT BY 2D-SHEAR WAVE ELASTOGRAPHY (2D-SWE.GE)?

Felix Bende, Ioan Sporea, Roxana Sirli, Renata Fofiu, Victor Baldea, Alina Popescu

Universitatea de Medicină și Farmacie Victor Babeș Timișoara, România

Background and Aim: While the manufacturer recommended the use of 10 liver stiffness measurements (LSM) to quantify liver stiffness by 2D-SWE.GE, it has been demonstrated that 5 LSM are enough to quantify LS by 2D-SWE.GE [1]. The aim of this study was to evaluate the reliability of 3 vs 5 measurements in a cohort of patients with or without chronic liver disease.

Material and method: 333 consecutive patients with or without chronic hepatopathies, in whom LS was evaluated by 2D-SWE, using LOGIQ E9 (GE Healthcare), were included in the study. The mean, median, standard deviation (SD) and interquartile range (IQR) of 3 and 5 were collected for each patient and compared to each other. Reliable LSM were defined as the median value of 5 or 3 measurements acquired in a homogenous area of liver parenchyma and an interquartile range/median(IQR/MED) <0.30.

Results: Reliable LSM were obtained in 92.5% (308/333) of patients using 5 LSM and in 94.9% (316/33) using 3 LSM (p= 0.26). The mean kPascal (kPa) value of the median, mean, SD and IQR for 5 and 3 measurements were 10.26, 10.30, 1.49, 1.56 and 10.37, 10.75, 2.96, 1.25 respectively. No significant statistical differences were found between 3 LSM and 5 LSM regarding the median, mean and SD (all p > 0.05). Statistical difference was observed only regarding IQR (p= 0.0026).

Conclusion: 3 LSM using 2D-SWE.GE seem to be reliable for LS evaluation with an increased feasibility of the method.

VARIA

SALIVARY GLANDS. INFLAMMATORY AND TUMORAL CONDITIONS

Manuela Lenghel[1], Carolina Solomon[1], Horațiu Rotar[2], Cristian Dinu[2], Grigore Băciuț[2], Sorin M. Dudea[1]

[1]Radiology Department, UMF "Iuliu Hațieganu", Cluj-Napoca
[2]Oral and Maxillo-Facial Surgery Department, UMF " Iuliu Hațieganu" Cluj-Napoca

Ultrasound (US), according to the guide for the usefulness of the radiological and medical imaging techniques (iREFER 2012 – RCR LONDON), is the first examination chosen for the assessement of the pathology of the major salivary glandes. The advantages are the high sensitivity and the very good resolution for the visualisation of the superficial tissues of the head and neck region. It is a non-invasive method, widely accesible, repeteable as many time is needed, low cost, non-irradiating technique. Combination of the US methods is usefull for the final diagnosis, but the value is limited for the examination of the deep cervical structures. It is an important tool for the identification and differentiation of acute or chronic inflammatory changes. It is able to confirm or not the presence of the lithiasis; also data for the permeability of the salivary ducts may be obtained. Este un instrument important în identificarea și diferențierea unor modificări inflamatorii acute sau cronice. The US criteria provide valuable informations for the differentiation between benign or malignant character of a salivary tumoral lesion. Cervical lympadenopathies can be assessed at small dimensions (2-3 mm). According to the same guide, IRM examination is considered to be a specialized exam, used for the assessement of the extension of the deep lobe masses or tumoral recurrences after the surgical treatment. CT examination is indicated in peculiar cases and it may be used as a complementary investigation for the assessment of the associated bone involvment (mandibule, skull base).

In conclusion, US is the first imaging method used for the evaluation of the ervical region, with indications in all the cases when a salivary gland or a surrounding tissues pathology is suspected.

THE ROLE OF SONOELASTOGRAPHY IN THE DIFFERENTIAL DIAGNOSIS OF CERVICAL LYMPH NODES

Manuela Lenghel[1], Carolina Solomon[1], Horațiu Rotar[2], Cristian Dinu[2], Grigore Băciuț[2], Sorin M. Dudea[1]

[1]Radiology Department, UMF "Iuliu Hațieganu", Cluj-Napoca
[2]Oral and Maxillo-Facial Surgery Department, UMF " Iuliu Hațieganu" Cluj-Napoca

The ultrasound evaluation of the cervical lymph nodes usually follows the clinical exam and is very important for establishing the diagnosis, prognosis and proper treatment. The most important role of the imaging techniques is to differentiate between benign and malignant lymph nodes. The superficial lymph nodes, including the nodes form the head and neck region, may be involved in a large number of pathological processes. In some cases, the lymph nodes may be secondary involved by the adjacent or distant processes, case in which the primary lesion is detected only due to the lymph node enlargement. Routinely grey-scale and Doppler US techniques are used for the differential diagnosis of superficial adenopathies. The main bidimensional criteria are: dimension, shape, margins, echogenicity, presence of the hilum, necrosis, calcifications, matting and perinodal edema (or the peripheral halo). The Doppler criteria include the presence and distribution of the vessels, vascular pattern, number and location of the vascular pedicles and impedance values. The development of new imaging techniques proved to be essential for the improvement of the diagnosis accuracy.

Sonoelastography is a relatively recent technique, with potential to become an important tool for the evaluation of the cervical lymph nodes, by completing the data obtained at the grey-scale and Doppler US, for the benign-malignant differential diagnosis. Strain elastography cludes a qualitative assessment, by using different scoring systems and elastographic patterns described in the literature ; also may provide a semi-quantitative measurement by using strain ratio - SR. Stiffness > 50% from the surface of the noe and/or a SR > 1.5 are considered to be good indicators for malignancy.

Shear-wave elastography may become a quantitative reproductible method for the characterisation of the cervical lymphadenopathies, recent studies obtaining promising results for the differentiation between benign and malignant appearance of the superficial lymph nodes.

THE CONTRIBUTION OF ELASTOGRAPHY IN MAMMARY PATHOLOGY MANAGEMENT

Georgiana Camen

Craiova Emergency County Hospital, UMF Craiova

Introduction: Breast cancer is the most frequent cancer in women and the third most frequent cancer in the Romanian population. The diagnosis is based on three aspects: physical examination, imagistic investigations and histopathological examination. The mammary elastography is an echographic technique able to differentiate between normal and pathological tissue based on their elasticity; it can provide information about the hardness of the tissue. The method relies on the principle that most malignant tumours have an increased hardness. The purpose of the method is to improve the differential diagnosis between benign and malignant tumours, especially those classified as BI RADS 3.

Material and method: In march 2019, we performed mammographies, echographies and elstographies (using the S1-S5 score) for a total of 20 patients aged 30 to 68. Furthermore, echo-guided mammary biopsies were performed for likely benign masses (BI RADS 3), malignancy-suspect masses (BI RADS 4) and highly malignancy-suspect masses (BI RADS 5). The sensibility of elastography in breast cancer diagnosis varies with the size of the lesion, the method which is chosen and the specialist's experience.

Often, a special attention needs to be paid to administrative issues and to the on-going education and training of medical personnel. It is essential to have a standardized approach based on national healthcare programs and protocols when managing a patient with a mammary pathology.

Conclusion: The elasticity score is important when evaluating a lesion, but it does not replace the histopathological examination. The mammary elastography is complementary to conventional echography and mammography. The method has its limits when examining breast implants, hematomas, scar tissue, lesions that are larger than the scanning area and especially dense breasts, while also having a lower sensibility for microcalcifications (which sometimes are an early sign of malignant tumours).

Keywords: elastography, echography, BI RADS, elasticity score

APPLICATIONS OF ELASTOGRAPHY IN DERMATOLOGY

Carolina Solomon[1], Simona Șenilă[2], Manuela Lenghel[1]

[1]UMF "Iuliu Hațieganu" Cluj-Napoca, SCJU Cluj, Radiology, Cluj-Napoca, Romania
[2]UMF "Iuliu Hațieganu" Cluj-Napoca, SCJU Cluj, Dermatology, Cluj-Napoca, Romania
carolinasolomon12@gmail.com

Skin elastography is a new imaging method that provides information about the elasticity of tissues and skin layers respectively. There are two basic elastographic techniques that are also applicable in dermatological disorders: foreign elastography (tension) and shear wave elastography.

Several studies have demonstrated the contribution of these techniques to the correct benign-malignant differentiation of skin lesions, some recent studies showing utility in the diagnosis and dynamic tracking of cutaneous lesions.

The basic physical principles, technical considerations, as well as the limits of each elastographic method in the assessment of dermatological conditions are presented.

The indications of performing elastography in dermatological pathology are: tumor formations and disorders that cause dermo-epidermal or nail elasticity. These will be exemplified by images of confirmed clinical cases.

THE POINT OF CARE PEDIATRIC ULTRASONOGRAPHY IN FAMILY DOCTORS PRACTICE. HIP ULTRASOUND SCREENING OF INFANTS IN PRIMARY HEALTHCARE - REALITY OR UTOPIA?

Mihai Iacob

Department of Research in Primary Care, Ultrasound Working Group / EUVEKUS, Timisoara/Vienna, Romania,
dr_iacob@yahoo.com

Background and Aims: This study aims to demonstrate the accuracy of a hip-ultrasonographic-screening in infants at high risk between:6-14 weeks, conducted by the family physicians with expertise, compared with the Gold-Standard-method of positive diagnosis established by the radiologist. DDH is a condition where there is an inadequate formation of the acetabulum finally has an abnormal relationship with the femoral head or may grow abnormally.

Methods: We made a targeted ultrasound-hip-screening of 588 infants at high risk. The inclusion criteria were both: anamnestic risk factors after Dimeglio, along with the clinical examination of the infant, with the following positive maneuvers as: Barlow, Ortolani, Galeazzi. Each infant was examined ultrasonographic, the first time on six weeks, and those found positive were sent to the radiologist, and then re-examined within:12-16 weeks. We used both ultrasonographic Graf's-classification of DDH and second the femoral-head-cover(FHC)after Terjesen-method. All the data obtained were introduced into a smart software created by us with a diagnostic algorithm. We also practiced hip joint Strain-Elastography and found some elastographic-patterns.

Results: The incidence of DDH in our targeted ultrasound screening was:2.72%. The sex-ratio showed the female predominance4:1. The left hip was involved two times more often, with 20% bilateral involvement. We obtained after Graf's-classification the follow **Results:** normal(type1a-93,5%/type1b-3%), physiologically immature(type2a=1,3%), dysplastic(type2b–c=1%), subluxated (type 3=0,68%), and dislocated(type4=0,34%). Regarding the risk factors the distribution was as follows:hereditary(31%), pelvic-presentation(20%), abdominal-delivery(14%), postural syndrome(5%), premature-birth(5.0%), post-term birth(4%), twin-pregnancy(2%), primiparity (10%), high-birth-weight(6%). The screening had the sensitivity80%, specificity98,2%, and accuracy97% with 95%CI:96.04%to98.69%, but with a lowPPV:61.54%,p<0,01

Conclusions: The targeted screening has a high accuracy and could increase the rate of early diagnosis of DDH with a permanent disability, to be treated in the first trimester of life using splinting, but depends on the physician's expertise. Ultrasound examination of the hips should be performed routinely, together with the clinical examination, or at least for unstable hip joints.

Keywords: Developmental dysplasia of the hip, Hip Ultrasound Screening at primary care level, hip joint strain elastography.

USE OF THE FOCUS (FOCUSED CARDIAC ULTRASOUND) SCREENING OR RAPID CARDIAC ASSESSMENT (RCA) AT THE HIGH RISK PATIENTS IN PRIMARY HEALTHCARE. UPDATES AND PERSPECTIVES.

Mihai Iacob[1,2], Mădălina Stoican[3], Ana Remes[3]

[1]. EUVEKUS, Vienna, Austria
[2]. Ultrasound Working Group in Family Medicine, SNMF, Romania
[3]. Advitam Medicis Medical Center, Timisoara, Romania

Aims: FOCUS is a complement of the clinical exam, for the evaluation of cardiac function, in the hemodynamic critical patient. It can be recommended for patients with a very high cardiovascular risk, which presents after clinical examination the suspicion of cardiac pathology, common in outpatient practice such as: cardiomegaly, valvulopathy, pericarditis, endocarditis, congenital malformations, aneurysms, and arrhythmias.

Methods: The RCA can be done in a few minutes, and traditionally involves the following five views: Subxiphoid view, Parasternal long or short axis, Apical four-chamber view, and IVC assessment. Within each view, there are several cardiac sections, that can be evaluated according to the orientation of the probe. We conducted an Experimental FOCUS Screening on 1780 patients with very high cardiovascular risk. Patients at high risk, identified on inclusion criteria, were first examined by a family doctor with expertise, is subsequently compared with ultrasound review by cardiologists, to determine the accuracy of this application. We have developed a Computerized Diagnostic Algorithm of the cardiac pathology detected by non-cardiologists.

Results: We identified 585 patients with cardiac pathology at FOCUS performed by the family physician and subsequently confirmed by the cardiologist. We did the descriptive statistical analysis of the echocardiographic cases detected. The accuracy of FOCUS screening in primary care was96.07% with a sensitivity:95.12% and specificity:96.57%,p<0.001, for all 1780 emergency patients that were subsequently confirmed by the cardiologist as the „Gold-Standard" method. The combination of multiple ultrasound techniques greatly increases the precision of the method, as evidenced by AUROC. The prevalence of cardiac pathology was 34.55% with95%CI:32.34%at36.81%.

Conclusions: Early diagnosis of many cardiac conditions, by FOCUS, can save the lives of patients in primary healthcare, based on concepts and guidelines of good clinical practice. Being an operator-dependent method, we only propose it, as a complementary or as a further guidance.

Keywords: FOCUS (Focused Cardiac UltraSound) Screening, Rapid Cardiac Assessment (RCA) in primary healthcare.

THE THYROSCREEN PROJECT - AN INTERDISCIPLINARY THYROID ULTRASOUND SCREENING, REPRESENTED A POC-US THYROID STUDY IN HIGH-RISK POPULATIONS AND USES OF AN INTELLIGENT DIAGNOSTIC ALGORITHM BY THE FAMILY PHYSICIANS WITH THE AIM OF RISK STRATIFICATION IN THYROID PATHOLOGY INTEGRATED WITH HISTOPATHOLOGICAL RESULTS.

Mihai Iacob

Department of Research in Primary Care, Ultrasound Working Group / EUVEKUS, Timisoara/Vienna

Aims: This project has three main stages. The first step was the development of a computerized-diagnostic-algorithm used to stratify the risk in thyroid pathology, based on Ultrasonography. It set the optimum time to achieve a thyroid biopsy(FNAB). We have used the latest international classifications, as well as a scoring made by us, correlated with the histopathological results. The second stage included a targeted thyroid screening in a population with high-risk, statistically significant. Finally, we are launching an interdisciplinary-multicentric-US-Screening titled „Thyroscreen-Project".

Method: We report a thyroid screening performed on 4386 apparently healthy adults with oncological risk factors+, aged over 20 years, followed for five years. We used the TIRADS classification by Russ-modified and Strain-Elastography, with both the elastographic-scores by Rago and semiquantitative-Strain-Ratio(SR), for standardization and to establish if fine-needle-aspiration-biopsy(FNAB) should be performed. We designed an Ultrasound-Scoring-System(USS) for predicting malignancy and a diagnostic-algorithm-software. All patients were stored and counted into electronic-database. Finally, we compared ultrasound scores designed by us, with the histological results as Gold-Standard-method.

Results: 861patients with thyroid diffuse disease and 696 with focal lesions were found. Prevalence of thyroid pathology was:38.99%(95%CI:37.54%to40.45%)with screening sensitivity:96.49% and specificity:96.52% and a high accuracy of 96.51%,PPV:94.66%,NPV:97.73%, statistically significant,p<0.01. The ROC-analysis of our US-methods confirmed a higher level of diagnostic accuracy of Strain-Elastography,p<0.001, AUC=0,995, 95%CI:0,97to1.Our cut-off value of SRwas:2.5

Conclusions: Performing US-Screening together with Strain-Elastography, had the best accuracy in analysis of the vascular network and absence of elasticity, for differentiating "benign versus malignant" of the thyroid tumors and for diagnosis of the diffuse thyroid diseases.

Keywords: Smart Thyroid Ultrasound Software, Thyroid Ultrasound Screening, Thyroid Strain Elastography, Ultrasound Scoring System.

AN EXPERIMENTAL ULTRASOUND KIDNEY SCREENING ON THE DIABETES PATIENTS TO ANALYZE THE CLINICAL-ULTRASONOGRAPHIC CORRELATION AMONG MODIFIED GLOMERULAR FILTRATION RATE IN CHRONIC KIDNEY DISEASE AND RENAL STIFFNESS WITH STRAIN ELASTOGRAPHY BY THE FAMILY PHYSICIANS.

Mihai Iacob[1,2], Mădălina Stoican[3], Ana Remes[3]

[1]. EUVEKUS, Vienna, Austria
[2]. Ultrasound Working Group in Family Medicine, SNMF, Romania.
[3]. Advitam Medicis Medical Center, Timisoara, Romania.

Objectives: Diabetic Nephropathy(DN) is the leading cause of Chronic-Kidney-Disease(CKD) being characterized, initially by increases in kidney length and renal parenchyma-thickness, followed in late stages, when the DN deteriorates clinically, by persistent or slightly decreases in kidney sizes, and thus there would be not a specific sign of DN. Our aim was to analyze the correlations of both, renal tissue stiffness(Strain-Elastography) and US-morphometry, with clinical-biochemical indicators in patients with DN.

Materials and Methods: We did a Kidney-Ultrasound-Screening on 500 patients with diabetes type1and2. Patients were followed up with ultrasonography-screening performed and also laboratory assays twice a year. Renal-cortical-thickness, length(volume), stiffness and estimated-glomerular-filtration-rate(eGFR)values, were analyzed using the Pearson correlation and ROC-curve-analysis to assess the kidney function.

Results: Our US-screening, with an accuracy of 88%, found renal elasticity (Strain-Ratio-SR) worsened progressively from CKD-Stage 3 to 5 ($p<0.001$). The correlation, between elasticity and proteinuria, may be a possible association between kidney-stiffness and early renal fibrosis. The presence of proteinuria is characterized with infiltration of inflammatory cells into the renal-interstitium and replacement of the tubulointerstitium by fibrous scar. The renal stiffness, measured by strain-elastography, with renal ultrasonography, correlates well with proteinuria and rapid renal deterioration in patients with CKD. A statistically significant positive correlation was found between eGFR and both:Strain-Ratio ($r=0.66$, $p<0,01$) with cortical-thickness ($r=0.85$, $p<0,01$)and degree of kidney-dysfunction. We have done also a ROC curve analysis, to compare the ultrasound techniques used in our study, with increase sensitivity in early diagnosis of CKD in diabetics.

Conclusion: Our US-screening suggests that both, ultrasonographic-cortical-thickness-measurements besides the renal-stiffness(SR) measured by Strain-Elastography, can be some important imaging techniques for the follow-up of diabetic patients and could predict the rapid renal function deterioration(CKD) in future practice of the family physician.

Keywords: ultrasound kidney screening on the diabetes patients, kidney strain elastography, predict the rapid renal function deterioration(CKD) by family physicians.

ULTRASONOGRAPHY IN DIAGNOSING URINARY BLADDER DISEASE IN CHILDREN

Sanda Lucia Voicu, Virginia Bodescu

UMFST Tg Mures, Paediatric department, Mures County Hospital, Tg. Mures, Romania, luciasandavoicu@yahoo.com

Background: The urinary bladder pathology in children covers a wide range, and ultrasonography, as the first imagistic tool for diagnosis, provides important informations.

Ultrasound examination of the bladder is useful for both diagnosis and follow-up, being accessible and repetitive.

Material and method: The authors present a series of clinical cases of the patients admitted to the Pediatric Clinic 2 of Tg. Mures with various urinary bladder cnditions: bladder stones, bladder tumors, malformations (ureterocele, bladder diverticulum), cystitis, neurogenic bladder, etc. The ultrasound features of bladder and neighboring organs are described, the pathology of which affects the ecographic appearance and function of the bladder

Conclusion: Ultrasound examination of the bladder is a valuable and indispensable tool in the diagnosis of urinary bladder disease in children.

Keywords: urinary bladder, ultrasonography, children.

DIAGNOSIS APPROACHES IN THE CUTANEOUS TUMORS: IMPORTANCE, IMPLICATIONS

Silviu Horia Morariu, Mihail Alexandru Badea

University of Medicine, Pharmacy, Sciences and Technology, Dermatology, Clinical County Hospital Targu Mures

Tumor skin pathology comprises an extremely large and varied number of diseases ranging from origins, area, depth, and prognosis from simple papillomas to the fearsome melanomas. Although most of these tumoral conditions have clinical features that allow for an early and relatively clear diagnosis, the dermatologist specialist often requires much more information for a high accuracy diagnosis to eliminate confusion allowing the choice of the most appropriate therapeutic solutions in line with patient expectations and claims. Patients who today are more

and more concerned with the integrity, functionality and appearance of their own cutaneous organ, preoccupations that require choosing and applying the most conservative therapeutic solutions.

Dermatology, which has long been known as an eminently clinical specialty, has become, under the pressure of the need for an accurate diagnosis, not only as an affection but also as a staging, of defining a realistic prognosis, and the need for rigorous monitoring of the efficiency of various therapies, increasingly dependent on objective information and additional clinical examination, preferably obtained by non-invasive methods.

Under this pressure, new non-invasive methods of cutaneous organ research (classic and computerized dermatoscopy, confocal microscopy) have been developed in recent years, and others have extended their application to the cutaneous organ (ultrasound, CT).

ULTRASOUND GUIDED INTERVENTIONS IN RENAL PATHOLOGY

Victor Cauni

Colentina Clinical Hospital

Aim: In the past two decades, minimally invasive kidney procedures have almost completely replaced open surgery. Interventional ultrasound (US) can play an important role in treating acute (emergency percutaneous nephrostomy) and chronic diseases (diagnostic renal biopsy, renal cyst puncture, US-guided percutaneous nephrolithotomy).

Method and discussions: The US-guided approach for percutaneous nephrolithotomy reduces the radiation exposure both for the operator and for the patient and can be used safely as an alternative to X-ray guidance. Guided kidney biopsy under ultrasound can diagnose many acute and chronic kidney conditions. Renal cyst puncture and evacuation is a good minimally invasive alternative to open or laparoscopic treatment. US-guided interventions in renal pathology can be successfully applied as a minimally invasive treatment.

ULTRASONOGRAPHY. APPLICATIONS IN SKIN AGING PROCESS, COSMETOLOGY, TUMORAL PATHOLOGY.

Maria Crisan

University of Medicine and Pharmacy Cluj Napoca

Ultrasonography, commonly used in internal medicine, gynecology, has also gained ground in the field of dermatology. There is an extremely generous offer of ultrasonographic equipment with high frequencies (15-75-100MHz), which allow real-time microscopic evaluation of the skin structure. High frequency ultrasound provides valuable information for a non-invasive early diagnosis, optimal therapeutic approach and the effectiveness of topical or systemic therapies. Ultra-sono-bio-microscopy complements non-invasive clinical diagnosis in cutaneous pathology, but histology remains the gold standard.

THE ROLE OF ULTRASONOGRAPHY IN THE DIAGNOSIS OF NEPHROBLASTOMA

Oana Mărginean, Lorena Elena Meliț, Maria Oana Mărginean

University of Medicine, Pharmacy, Sciences and Technology Tg. Mureș

Introduction: Nephroblastoma is the most frequent primary malignant renal tumor in child (90-95% of all renal malignant tumors), with a peak of incidence between 3-5 years of age. The ultrasound reveals a well delimited mass, with Doppler signal, hemorrhagic and necrotic areas, and sometimes, calcifications. The tumor may extend to the surrounding organs or within the inferior vena cava and renal vein.

Material and method: We report the case of 1 year and 2-month-old male child diagnosed with left nephroblastoma to underline the major role of abdominal ultrasound in diagnosing this tumor.

Results: The patient presented the onset 3 weeks before the admission with persistent fever and altered general status, whose laboratory test revealed severe hepatic cytolysis syndrome, and the abdominal ultrasound raised the suspicion of a left renal tumor, thus being transferred in our clinic. The laboratory tests showed Hgb 11.7 g/dl, ESR 35 mm/h, LDH 632 U/L, AST 337 U/L, ALT 635.3 U/L, and serum cooper 156.6 µg/dl. The urine exam pointed out microscopic hematuria. The renal parameters, bone marrow exam and urinary vanillylmandelic acid were within normal ranges, while the neuron specific enolase mildly increased (29.63 ng/ml), ruling out a neuroblastoma. The abdominal ultrasound revealed mild hepatomegaly, in the left renal lodge an echoic, inhomogeneous mass, with a diameter of 99.2/46.6, present Doppler signal, with septs within the superior pole, which does not overpass the renal capsule. The abdominal CT confirmed the ultrasound aspect. The patient benefited form left nephrectomy and chemotherapy, with favorable evolution.

Conclusions: Abdominal ultrasound is the first imagistic investigation used for abdominal tumor masses. Its role is essential in most of the cases since it provides very useful details for establishing the diagnosis. Nephroblastoma is one of the tumors where abdominal ultrasound fully justifies its importance.

DIFFICULT NEPHRO-UROLOGICAL CASES SOLVED BY ULTRASOUND

Mirela Gliga[1,2], Cristian Chirila[3], Mihai Gliga[4], Anca Georgescu[4] , Atilla Frigy[2], Paula Chirila[5]

[1] Diaverum Dialisys Center Tirgu Mures, Romania
[2] UMFST, Department of Internal Medicine, Tirgu Mures, Romania
[3] University of Medicine, Pharmacy, Science and Technology, PhD student, Tirgu Mures, Romania
[4] UMFST, Department of Infectious Disease, Tirgu Mures, Romania
[5] UMFST, student, Tirgu Mures, Romania

Introduction: Ultrasonography is mandatory for the diagnosis of renal diseases because it is non-invasive, non-irradiating, cheap and repeatable. We describe two difficult cases in which ultrasound was the first diagnostic modality.

Material and method: We describe a case of a young female with abdominal pain mimicking acute appendicitis. The second case is a young female suspected with secondary hypertension of reno-vascular origin.

Results: Regarding the first case, laboratory tests were significant for acute inflamation, urine analysis was negative for hematuria or infection. Ultrasound revealed a gigantic inhomogeneous tumor and suspected the final diagnosis that was made after the total nephrectomy and histopathological and imunochemical annalysis. Finnaly it was a gigantic angiomyolipoma and no evidence of tuberous sclerosis was detected.

In the second case a characteristic signal “parvus and tardus” type was described within the abdominal aorta and in all branches, suggesting aortic coarctation. Diagnosis was confirmed by contrast-enhanced CT scan.

Conclusion: Ultrasound was an immediately available method and rapidly conducted the clinical investigation to the final diagnosis. Although other imaging modalities are needed, avoiding the delay in the final diagnosis is mandatory for the patient and the treatment.

A CAREFUL ABDOMINAL ULTRASOUND EXAMINATION AS A CHANCE FOR EARLY DIAGNOSIS OF AN AGRESIVE CANCER: HEAD OF THE PANCREAS

Adriana Gomotirceanu[1], Claudiu Popa[1], Bogdan Gomotirceanu[1], Mirela Gliga[2]

[1] TOPMED Medical Center, TgMures
[2] UMFST, Department of internal medicine, Tg. Mures

Introduction: In early curable stage pancreatic adenocarcinoma (AC) and neuroendocrine tumors (NET) are asymptomatic. A routine ultrasound (US) and CEUS performed by experimented physicians can reveal it.

Material and method: We report 3 cases presented at the Internal Medicine Department for routine examination or minor dispeptic symptoms in which we find minor tumors located in the pancreas and after that we performed CEUS, ecoendoscopy and fine needle aspiration (FNA).

Results: US was performed a jeun and in all cases a solid mass located at the pancreatic head was described. In case 1 tumor had vascular spots within, and on CEUS there was an intense enhancement in the arterial phase and a slow wash-out in the late phase, characteristic for NET, which was confirmed at FNA. In case 2 and 3 there was no Doppler signal detected. At CEUS one tumor was non-enhancing and was diagnosed as mucinous chystadenoma and second tumor had some peripheric enhancement in CEUS suggestive for AC. CT scan confirmed the vascular pattern, in this case hystopathology in expected.

Conclusion: Tumors of the pancreas can be diagnosed early by high resolution US combined with CEUS and FNA.

INDEX OF AUTHORS