The EFSUMB website, a great source for ultrasound information and education

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Abstract

The aim of this updated EFSUMB-website guide is to introduce readers to EFSUMB’s wide ranging activities. The most recent are the guidelines on interventional ultrasound and intestinal ultrasound and updated CEUS Non-Liver and Elastography Liver Guidelines which can be freely downloaded. Hosting eBooks on our website is another new departure, most importantly the EFSUMB Course Book on Ultrasound available in a second edition as an eReader and an online Student Edition of the ECB. EFSUMB has been active with updating Guidelines; those mentioned above have all been revised or written in the last two years. Webinars have been introduced and participation is possible online but can be reviewed later along with recent recordings of Euroson Schools. The EFSUMB Newsletter in the EJU promotes our activities and topical articles intended to reach all our members with the online version hosted on our website. The Case of the Month continues to be one of EFSUMB’s most visited sites and in the last few years has been translated into 14 different languages including Chinese. In conclusion, this article aims to provide an updated guide to the website educational sites of the European Federation of Societies for Ultrasound in Medicine and Biology (EFSUMB).

Keywords: guideline, website, EFSUMB, ultrasonography, contrast enhanced ultrasound, point of care ultrasound, health care

Introduction

The aim of the paper is to introduce readers to EFSUMB’s wide ranging activities which have embraced modern technology and updated guide to the EFSUMB website [1]. EFSUMB aims to enrich the ultrasound community with updated material on all aspects of ultrasound. Our website calendar hosts EFSUMB and international ultrasound events but focuses on Euroson Schools, EUROSON Congresses, Endorsed Courses and EFSUMB Ultrasound Learning Centres. The teaching material on the EFSUMB website is extensive and includes images, videos, live lectures, books, and dozens of papers on US methodology, clinical recommendations, guidelines, and clinical issues. Moreover, the reader is able to take and be accredited CMEs for web-course on CEUS of the liver.

Current activities

Hosting eBooks on our website is another new departure, most importantly the EFSUMB Course Book on Ultrasound (ECB) which is also in a printed form but allowing chapters to be updated online, an online Student Edition of the ECB and followed up as an electronic publication for easy distribution and sale from the website. Other eBooks online are Safe Use of Ultrasound in Medi-
Each Committee has special interests which are published on the website. The EPSC has reviewed Student Medical Education and has published its recommendations for greater uniformity in the teaching of anatomy and physiology through ultrasound in the early years. Other training recommendations are online, for example in the use of hand held devices which have become cheaper and widely available and their safe use reviewed by the Publications Committee. ECMUS considers the safety statements annually which are hosted online and reviews safety issues such as probe cleaning.

EFSUMB’s successful website is visited by many countries and not just EFSUMB members and there are plans to create a corner of the website available to members exclusively for special offers on books, reduced rates for courses and first choice for signing up for webinars, among other things.

“Building a European Ultrasound Community” is our slogan. EFSUMB aims to develop international partnerships and friendships, learning from one another and sharing the best practice from all around Europe. Most importantly, we want to be responsive to our members’ needs so we invite you to keep us informed at efsumb@efsumb.org.

**An introduction into the EFSUMB website**

**Lay-out**

The EFSUMB website horizontal panel has the following headings: About EFSUMB – Courses and Congresses – Case of the Month – Atlas – Educational – Publication – Research and Safety. An innovation is the Research link, which it is hoped will offer financial incentives to younger members to attend Congresses, to advertise the Young Investigator Award, the Walter Krienitz and Best Published Paper prizes. There is information for the Ultrasound Learning Centres where participating hospitals can offer free programmes for those interested in learning ultrasound. The calendar has EFSUMB and non-EFSUMB events listed with a month’s listed events automatically opening when that month is viewed. EFSUMB is especially fortunate to have a website administrator, Mrs Suzanne Cain, who ensures that the material displayed is current and functioning properly.

EFSUMB is responding to users requests and changing needs. The Publication Committee spearheaded the adaptation of the website for viewing with mobile phones and iPads. The information displayed here is based on our regular review of the top 15 most visited sites however EFSUMB is introducing an app which will automatically update the mobile sites with the host material in the appropriate format.
Current statistics

EFSUMB carefully monitors the website viewing statistics every few months. Responding to our viewing audience, we have introduced Case of the Month translations to encourage and assist our viewers. Whilst English is the convenient language of the Society we fully recognise that readers can gain more from reading a side by side case translation. Before the publications of the EFSUMB Course Book on Ultrasound online the website viewing figures were very modest. In 2008 around 29,700 visitors, but coinciding with the ECB online the visitors leapt to 177,000 and have continued to increase. The Case of the Month is still the most visited page, but followed by the Guidelines and Recommendation page, Euroson Schools, and Congress pages.

Guidelines

History

Over the last decade EFSUMB has produced a series of Guidelines and Recommendations regarding different ultrasound applications. Contrast-enhanced ultrasound (CEUS) guidelines were first introduced by EFSUMB in 2004, centred on liver applications [8]. The CEUS liver guidelines were then updated in 2008 [9] and 2012 [10,11]. The recently published version was a successful joint WFUMB (World Federation of Ultrasound in Medicine and Biology) – EFSUMB venture simultaneously published in Ultraschall in der Medizin / European Journal of Ultrasound (EJU) [10] and Ultrasound in Medicine and Biology (UMB) [11]. In addition an introduction into dynamic contrast enhanced Ultrasound (DCE-US) for quantification of tumour perfusion was published as well [12].

The EFSUMB Guidelines and Recommendations on the Clinical Practice of Contrast Enhanced Ultrasound (CEUS): Update 2011 on non-hepatic applications [13] expanding the clinical indications for CEUS to almost 30 applications aims to explain the rationale for proceeding with the investigation, reports on the extremely rare and limited risks to which patients are exposed when they undergo a CEUS examination and attempts to provide a recommendation level for each indication.

The first elastography guidelines worldwide were introduced and published by EFSUMB in 2013 [14] followed by WFUMB guidelines [15-17].

The EFSUMB Guidelines and Recommendations on the Clinical Use of Ultrasound Elastography Part 1: Basic Principles and Technology provides an introduction to the physical principles and technology on which all forms of current commercially available ultrasound elastography are based [14]. The practical advantages and disadvantages associated with each of the techniques are described and guidance is provided on optimisation of scanning technique, image display, image interpretation and some of the known image artefacts. The clinical part introduces the applications [14].

The Guidelines and Good Clinical Practice Recommendations are freely available to download from the EFSUMB website and the Atlas has images to illustrate them.

The successful EFSUMB guidelines published in our official journal “Ultraschall in der Medizin / European Journal of Ultrasound” have gained widespread attention. The impact factor (IF) of our journal has climbed to an impressive 4.9, which is the highest IF of an interdisciplinary ultrasound journal worldwide. The Guidelines and Good Clinical Practice Recommendations are freely available to download from the EFSUMB website. EFSUMB has also embarked on setting up an atlas of images to illustrate the various Clinical Recommendations and Guidelines published, which includes a variety of CEUS and elastographic applications [1] (www.efsumb.org).

The introduction of any new diagnostic or treatment tools and guidelines typically follows a pattern [18]. It is worth mentioning, new and often valid methods are not always or are only rarely supported by the highest ranking level of scientific evidence, namely randomized controlled trials. Often these innovations are so obviously of benefit that randomized controlled trials involving older, less safe or less effective techniques could be deemed unethical. The expert opinions expressed within the Guidelines are independent and free of bias, based on the best evidence for clinical practice and any potential conflict of interest of each individual author is disclosed in the online version for a maximal transparency. This should always be expected for guidelines drafted according to modern standards [18,19].

We also refer to the current published textbook on interventional ultrasound which was also a motivation for more evidence-based recommendations [20,21].

The EFSUMB INVUS guidelines are an expression of interdisciplinary and multiprofessional viewpoints, some of which represent different approaches; this reflects reality in all its diversity. Particular attention has been given to clinical significance (level of evidence and the more practical grade of recommendation). The principle of “do no harm” is expressed in repeated pleas to apply the techniques judiciously in everyday practice and not become fascinated with technology for its own sake. The decision to proceed with an interventional procedure is always an individual one and should be measured by its benefit for the patient [19].
The guidelines consist of six main parts that are published in Ultraschall in der Medizin / European Journal of Ultrasound [22-30], an introduction [19] and Editorial [18] and comment papers [31-33]. In addition, EFSUMB has made recommendations for the performance and reporting of US examinations in portal hypertension [34, 35]. Comments on EFSUMB guidelines have been published as well [18, 32, 33, 36-43]. Most recently we refer to the Pediatric Position paper on the use of CEUS [44].

A more detailed description

The EPSC, EFSUMB’s Education Committee has produced Minimum Training Recommendations in various specialties. There are Guidelines and Safety Statements from ECMUS, EFSUMB’s Safety Committee [1] for the practice of medical ultrasound in Europe [www.efsumb.org]. These identify three levels of training and expertise [45]. The boundaries between the three levels are difficult to define precisely and should be regarded as a guide to different levels of competence and experience. The most recent Minimum Training Recommendations are in Rheumatology, Interventional US, CEUS, Musculoskeletal, Thoracic US, Vascular and EUS. To date there are 15 different Appendixes on the website. The Recommendations usually list three levels of attainment with the theoretical and practical training for each level and list the competencies that should be acquired at each level. Maintenance of skills is also considered and suggestions are made. Training competency assessment sheets are provided in most cases.

The Safety Statements are updated regularly, Clinical Safety Statement for Diagnostic Ultrasound, 2016, EFSUMB Statement on the Safe use of Doppler Ultrasound during Scans at 11 – 14 weeks (or earlier in pregnancy) 2016. ECMUS reviews the statements produced by AIUM, ISUOG and WFUMB to ensure that there is standardisation in the information available. The Souvenir Scanning Statement and EFSUMB Statement On the Safe Use Of Doppler Ultrasound During Scans At 11–14 Weeks (Or Earlier In Pregnancy) 2016 are examples of common statements.

Current guideline projects

Update elastography liver guidelines

The introduction of new developments of liver elastography, like incorporation into general ultrasound machines, and thus the more widespread availability have gained importance. In recent years the EFSUMB leadership decided to update their guidelines focusing on elastography of the liver. These guidelines expand on the guidelines published by the European Federation for Ultrasound in Medicine and Biology (EFSUMB) published in 2013. The updated guidelines should support the beginner and give advice to the experts to be a major reference for performing elastography of the liver. As done with previous EFSUMB guidelines a steering committee was appointed, whose role was to define the strategy, content of the guidelines and selection of experts depending on their publication reports, scientific reputation and balance between the national societies of EFSUMB. The consensus meeting was held in the early July 2016 in London. The publication is presumed for 2017.

Update CEUS non-liver

Previous contrast enhanced ultrasound (CEUS) documents from the European Federation of Societies for Ultrasound in Medicine and Biology (EFSUMB) have been published encompassing hepatic and non-hepatic applications with a statement on CEUS use in paediatric applications [44]. The CEUS non-liver update reflects the current applications in non-hepatic CEUS and updates the previous EFSUMB guidelines published in 2012 [13]. The field outside hepatic applications has progressed in the interim, and is reflected with this update.

Gastrointestinal Ultrasound Guidelines

In September 2016, the first guidelines ever on gastrointestinal ultrasound (GIUS) were published [46,47]. Two years ago EFSUMB started a Task Force Group with 20 European experts with the aim of generating the world’s first guidelines and clinical recommendations on GIUS. The Task Force Group, chaired by Giovanni Maconi and Odd Helge Gilja, has had several meetings, including a large consensus conference the first part has been already published. A mass of literature has shown that GIUS is useful in the diagnostic work up and follow up of acute and chronic conditions such as appendicitis, diverticulitis, bowel occlusion and inflammatory bowel diseases; it also effective in excluding these disorders, corroborating the suspicion of functional diseases. Therefore, IUS is able to save costly, avoid invasive and potentially dangerous diagnostic procedures, improve the management of patients and reduce health care costs. 7 guideline/position papers are planned.

EFSUMB Course Book (ECB)

Short introduction

There is a need to incorporate ultrasound experience into clinical courses and accreditation. This new multidisciplinary Course Book is intended to complement and advance the educational purposes of EFSUMB in a modern way, and will integrate the extensive experience of European authors and ultrasound teachers. The course book is devoted to the interdisciplinary ap-
The EFSUMB Course Book (ECB) is intended to supplement the educational purposes of EFSUMB. The book has been published on the website in close collaboration with the EFSUMB Publication and Education committees. The aim is to distribute the ECB all over Europe, by offering the book for sale from the EFSUMB website at a heavily subsidized price or offering free downloads, to standardize and improve examination techniques and to illustrate the EFSUMB course system.

Aim of the book

The EFSUMB Course Book (ECB) is intended to supplement the educational purposes of EFSUMB. The book has been published on the website in close collaboration with the EFSUMB Publication and Education committees. The aim is to distribute the ECB all over Europe, by offering the book for sale from the EFSUMB website at a heavily subsidized price or offering free downloads, to standardize and improve examination techniques and to illustrate the EFSUMB course system.

Where to find and how to use the ECB on the EFSUMB website

The chapters are listed on the website which is accessed from the main menu. The videos accompanying the chapters are listed separately, as well as embedded in the chapters. Observant viewers will notice that not all the chapters in the book are available in the website version and vice versa. Some chapters were not available for the 2012 publication but are now online, such as the chapters on Liver Transplantation and Ultrasound in tropical medicine and Human Immunodeficiency Virus (HIV) Infection.

Download chapters/why

Any general ultrasound textbook is going to cover aspects which are not relevant to every clinician. An online version offers the opportunity to read those chapters of interest and the facility to print them. The advantage of an online version is to be able to view the videos of both examination techniques and images which are hosted on YouTube, and again can be downloaded for use in lectures or teaching. Most importantly the information can be updated in what is one of the most rapidly advancing fields of medicine.

Printed version/why

For those clinicians improving their ultrasound skills the ECB is a valuable learning tool which is always to hand. For the teachers of ultrasound the book offers a structure for course teaching with images for reference. EFSUMB hopes that organizers of ultrasound schools will consider purchasing the ECB at a further discounted rate rather than printing material to accompany courses which is costly and time consuming. Contact efsumb@efsumb.org for bulk book purchases.

Work in progress, how can one contribute

The ECB editor invites comments on the chapters and where information has been updated this is requested so that the online chapters can take this into account. EFSUMB can be contacted by email via the website or the editor contacted directly at the address shown above. The EFSUMB blog is another way of commenting on topics and is a forum for exchange of ideas or inviting comments from colleagues. The book is in no way exhaustive of topics, for example there is no chapter on Musculoskeletal but the hard copy had to take into account the number of pages a paperback version could accommodate. However the website can host further chapters and if you consider there are important omissions please contact the editor with suggested topics and authors.

EFSUMB Course Book, Student Edition (ECBSE)

The EPSC felt that a version of the ECB should be made accessible for students, hence the ECBSE. Less detail and more pathology was considered necessary with fewer images restricted to showing a healthy organ and a diseased organ. In the ECBSE anatomy, examination technique and safety issues and a few important pathological findings (yes – no findings) are extracted from ECB. Examination technique videos are very necessary for students and the aim is to produce a version within the year considering these criteria. The ESBSSE is available on the EFSUMB website but under consideration is an electronic extracted version of the book.

Why US learning for students, aim

The EPSC is of the opinion that it is very important that medical students are trained in the principles of diagnostic ultrasound. Ultrasound can be a very valuable tool not just in diagnostics but also in enabling students to understand anatomy and physiology. In many instances it can replace the need for dissection. The Commit-
tee is endeavouring to assess the variability of time that is devoted to ultrasound education for medical students around Europe and to get a fuller picture of these variations. The course book would be a useful handbook for teachers of ultrasound with a core syllabus that would ensure uniform education for all students.

How to use website to find chapters

The ECBSE will be hosted on the Educational Portal of the website under the icon ECBSE and the chapters will be listed in the same manner as for the ECB. The order will not follow that of the printed book as certain chapters of a more advanced nature will not be included.

How to find videos

Videos and images will be embedded in the chapters with an additional first chapter, Ch 00 listing the videos for quick reference to the procedure, without the need to search through the text. The DVD Examination Techniques CD is available to download or can be posted on application to the EFSUMB office.

Work in progress, how can one contribute?

The Editors welcome video clips of examination techniques, images and written contributions. Contact efsumb@efsumb.org for the Dropbox access.

Case of the month (CoM)

Short history

The Cases of the month (CoM) have been introduced by Christoph F. Dietrich as first Editor from 2008 to 2011 [5] followed by Paul Sidhu until 2015 [6] and currently edited by Maija Radzina [7]. The earliest case of the month went online in March 2008. The Publication Committee envisaged regular contributions to include artefact of the month, tip of the month in addition to cases that would be of interest; MSK, Ob/Gyn and Technical Case of the Month. Since this first case there have been eight cases published in 2008, six cases in 2009, four cases in 2010, nine cases in 2011, eight cases in 2012 and nine in 2013, eleven in 2014 and 2015, twelve to date in 2016. Topics have ranged from Crohn’s disease, Echoscopy, to a rare double gallbladder. All these cases are listed on the EFSUMB website under http://efsumb.org/case-month/case-archive.asp.

The translations into foreign languages can all be accessed from this page. If you would like to translate any of the cases please contact Maija Radzina or if you wish to submit a Case of the Month resource to EFSUMB for consideration email Maija.Radzina@efsumb.org (http://www.efsumb.org/case-month/com-template.pdf).

Examination Technique videos are offered to translators of a case and the ECB for more than three translations. An Impact Factor will follow around 2019.

Euroson congresses, Euroson schools and EFSUMB endorsed courses

National Societies submit a bid to host the next available EUROSON Congress which is selected by the EFSUMB Board of Delegates at the Congress meeting. Euroson Schools invite the EPSC to review the programme and lecturers and if the requirements satisfy the EFSUMB bylaw regulations this is approved and promoted on the EFSUMB website. Endorsed Courses are also promoted on the website once approved. Schools focusing on CEUS are selected by EFSUMB and two large Schools and two small Schools held annually.

Ultrasound Learning Centres (ULCs)

The nine centres available are listed on the EFSUMB website with the faculty, area of expertise and description of the machines available. These centres have been established to offer ultrasound practitioners the opportunity to spend a period of 1 – 4 weeks at a specialist centre to acquire ultrasound skills. The training is free of charge but travel and accommodation are at the expense of the attendee. The EFSUMB Bylaw 12 sets out the criteria and can be found on the website at http://www.efsumb.org/euroson-sch/eul-centres01.asp

Webinar

Webinars on CEUS have been hosted successfully with good audience participation and large subsequent viewing figures of the archived material, http://www.efsumb.org/education/ed-webinar-archive.asp More webinars are planned, including one featuring Chinese doctors on CEUS. There are future plans to host Elastography webinars.

Atlas

The Atlas (www.efsumb.atlas.org) has been primarily introduced to accompany the Elastography [14], Contrast Enhanced Ultrasound (CEUS) Liver [10, 11] and Non Liver Guidelines [13] as well as dynamic contrast enhanced ultrasound [12] but intended to expand to all areas to offer a database of images which can be freely downloaded. The atlas is work in process including also videos and figures for the INVUS guidelines [19, 22-30].

All in one, the educational portal

The Educational Portal (EP) was considered necessary to host the accumulated material on the main EFSUMB website. By offering a category menu, with subcategories in some topics, searches can be specific and refined with the detailed key word search option. The portal offers the option to rate articles, email to a friend or print the article as well as the facility to add comments, date of posting and record the number of times each article is viewed. This is particularly helpful to EFSUMB to gauge the interest in topics and direct limited resources more appropriately.

In addition there is a list of related articles and the option to ask a question of the author. Hosting mp4 videos in YouTube is free, well tested and encoded in different quality levels offering reduced resolution for mobile phones. The advantage of YouTube is that the material is uploaded, converted and easily downloaded.

Committees

The committees include the Publication Committee (PV), Education and Professional Standards Committee (EPSC), and the European Committee for Medical Ultrasound Safety (ECMUS). The main tasks are summarized on the EFSUMB website. EFSUMB has strengthened the interdisciplinary collaboration in the field of diagnostic ultrasound and promoted safety of ultrasound in medical use [48-55].

Student committee

In 2016 EFSUMB invited National Societies to suggest a student representative for the ESC. The aim of this committee is to provide a forum for discussion and promoting professional and scientific exchanges. The main tasks of ESC are: to stimulate integration of ultrasound teaching and training in medical education of students; establishment of quality standards in cooperation with EFSUMB; to plan a program for student activities and teaching at the EUROSON congresses in close collaboration with the local organisers; to enhance integration of basic or clinical ultrasound in the research activities pursued by the students; to stimulate interdisciplinary trainings and further education with other research disciplines (e.g. engineering sciences, physics); and peer to peer teaching (e.g., tutors).

WFUMB

EFSUMB is currently the largest Federation in WFUMB and is well represented in the Administrative Council with Dr Christian Nolsoe as President Elect 2015-2017 and Prof Dieter Nuernberg as Vice President 1 and Christoph F Dietrich as EFSUMB representative within the Administrative Council 2015-2017. Other EFSUMB representatives are: Odd Helge Gilja: Co-sponsorship Committee. Fabio Piscaglia: Congress Committee. Ioan Sporea: Centers of Excellence Director. Gail ter Haar, David Evans and Karel Marsal: Safety Committee. Michel Claudon and Harald Lutz: co-opted. EFSUMB’s interests are represented in various committees.

The WFUMB Publications Committee was quite active during the last years. In addition to the WFUMB 2015 guidelines on elastography (basic principles [15], liver [17] and breast [16] more papers have been prepared and successfully published. The WFUMB guideline projects (steering committee: Richard Barr, David Cosgrove and Christoph F Dietrich) on prostate [56] and the The WFUMB guideline project on thyroid [57] have been both recently published. The same is true for the WFUMB position paper on point of care ultrasound [58]. The WFUMB Intestinal Ultrasound project (IUS) is in press for UMB.

EFSUMB strives to complement the work undertaken by WFUMB whose sphere of influence tends to be more international rather than focused on Europe, however the WFUMB Excellence Centre in Timisoara, Romania is an exception.

The next WFUMB congresses will take place in Taipei, 13-17 October 2017 (hosted by AFSUMB).

Networking

EFSUMB has developed a close collaboration with other major societies. The aim is to increase the profile of ultrasound in Societies such as ECR with a joint session with ESR focusing on topical issues. The 2016 session looked at Paedriatic CEUS and 2017 will look at hand held devices. Out of this relationship statements on archiving material, looking at probe cleaning recommendations have been created. The presence of an Ultrasound Learning Area is now a fixture at UEG Week with a series of lectures and hands on training with live models attracting regular and numberous new visitors. EFSUMB hopes to establish these at EASL but at present has to be content with sessions relating to liver ultrasound. TAUS plan to establish a continuing education program in the field of intestinal ultrasound and to help interested gastroenterologists in different European countries to establish this fascinating technique in their own country and facility. The proposed education program consists of three pillars, two parts being educational workshops and one practical 4-week hands on training in one of the EFSUMB
Ultrasound Learning centers of bowel ultrasonography
More recently EFSUMB and ECCO are cooperating and
EFSUMB will support lecture suggestions for the work-
shops during the ECCO meeting. A 1 – 4 week training
period in gastroenterology at the EFSUMB Ultrasound
Learning Centre will be offered free of charge but ac-
modation and travel are at the expense of the attendee.

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