



Professor Elmar Merkle, M.D., is a Senior Vice President of the Cross-Functional Medical Services Unit at University Hospital Basel (USB) in Switzerland. He joined the Faculty at USB in 2012, where he also serves as the Chairman of the Department of Radiology.

His current research interests include Abdomino-pelvic MRI and MR Angiography. Professor Merkle has dedicated his career to efficient workflows in imaging and reporting, and he is widely recognized for his contributions in this field.

Dear MAGNETOM Flash reader,

When I was searching the World Wide Web to prepare for this editorial I included the term “efficiency” in my search. Why? Because this is a word frequently mentioned as a reason why Computed Tomography or Ultrasound is often preferred to MR in daily clinical practice – especially in abdominal imaging. Two dictionary definitions of the word caught my attention and helped me relate it to our profession:

“competence: the ability to do something well or achieve a desired result without wasted energy or effort” and

“competency in performance”.

Whilst efficiency is often associated with time and cost issues, for us radiologists the goals to do something well and to achieve the desired result are of equal importance. This is especially true in some of the more challenging applications, such as liver imaging: The detailed assessment of the various vascular hepatic systems, the biliary anatomy and its variations, and the hepatic volume for surgical planning; the selection of the most promising hepatic area during liver biopsies in cirrhotic patients; or the detection of even the smallest

metastases for planning of advanced liver resection. In such situations we are met not only by the technical challenges required to be able to provide this information, but also by our responsibilities for the well-being of our patients. These challenges demand “competency in performance”.

MRI has been proven to give much added value compared to CT and US in many clinical scenarios, especially in the context of appropriate treatment selection and outcome monitoring. It can evaluate the biliary system non-invasively by MRCP; detect the smallest lesions by diffusion weighted imaging; and quantify and monitor fatty liver diseases by imaging or spectroscopy. But how do all these techniques help when our patients are simply too short of breath to go through a simple post-contrast dynamic scan? What happens if our dynamic Gadolinium enhanced scans simply take too much time or the timing is insufficient for achieving the perfect dynamic phase?

Clinical competency is another ingredient for an efficient use of imaging techniques. Imaging efficiency can be improved only by understanding

the clinical question, the underlying pathophysiology, and by complementing this with the radiologic expertise of what is technically feasible. Let me illustrate this by using the following example: Young female patients oftentimes present clinically with ‘pelvic fullness’. Usually, percutaneous ultrasound is being performed as a first imaging step, and sometimes uterine leiomyomata are detected. As minimally invasive treatment options such as thermal ablation or transarterial fibroid embolization have matured over the past decade, oftentimes a contrast enhanced MRI is being ordered for subsequent treatment planning. By simply adding a Gadolinium enhanced time-resolved MR angiography, flow dynamics and direction in the ovarian veins can be evaluated with reversed flow supporting an alternative diagnosis of pelvic fullness such as pelvic congestion syndrome. The amount of time this will add to the total exam time is negligible. And why choose MRI overall? Because gentle imaging is advised for all patients, not only for children and adolescents; because we want to avoid any potential risk of radiation.

“MRI has been proven to give much added value compared to CT and US in many clinical scenarios, especially in the context of appropriate treatment selection and outcome monitoring.”

Professor Elmar Merkle, M.D.

In this issue of the MAGNETOM Flash you will read about many other developments in the field of abdominal imaging which will resonate with us radiologists. I think these articles will

encourage you to consider how this changes the competency of MRI. But aside from your own opinion about the efficiency of MR in the clinical scenarios presented in the following

pages, I hope you enjoy reading them for the added clinical value they may provide to your daily work.



Editorial Board

We appreciate your comments.

Please contact us at magnetomworld.med@siemens.com



Antje Hellwich
Editor-in-chief



Wellesley Were
MR Business Development
Manager Australia and
New Zealand



Ralph Strecker
MR Collaborations Manager,
São Paulo, Brazil



Sven Zühlsdorff, Ph.D.
Clinical Collaboration
Manager, Chicago, IL, USA



Gary R. McNeal, MS (BME)
Advanced Application
Specialist, Cardiovascular
MR Imaging Hoffman
Estates, IL, USA



Peter Kreisler, Ph.D.
Collaborations & Applications,
Erlangen, Germany

Review Board

Lisa Chuah, Ph.D.
Global Segment Manager Neurology
Lars Drüppel, Ph.D.
Global Segment Manager Cardiovascular MR
Wilhelm Horger
Application Development Oncology
Michelle Kessler
US Installed Base Manager
Berthold Kiefer, Ph.D.
Head of Oncological and Interventional
Applications
Sunil Kumar S.L., Ph.D.
Senior Manager Applications
Reto Merges
Head of Outbound Marketing MR Applications
Edgar Müller
Head of Cardiovascular Applications
Heiko Meyer, Ph.D.
Head of Neuro Applications
Heike Weh
Clinical Data Manager