When unborn babies have anomalies: MRI allows much more detailed diagnoses

The view into the inner body: paediatric radiologists discuss new findings in radiation protection, MRI and ultrasound at international expert conference in Berlin

Berlin/Leipzig. Every mother wishes for a healthily developed baby. However, sometimes the ultrasound during the pregnancy reveals anomalies that worry the parents and doctors involved and that need to be looked into further. Foetal magnetic resonance imaging (MRI) currently constitutes the most reliable method of intrauterine imaging. International experts will discuss the latest approaches and research achievements concerning intrauterine MRI diagnostics throughout the 54th Annual Meeting of the European Society of Paediatric Radiology (ESPR) from 20th until 22th June 2018 in Berlin, Germany.

The fact that MRI represents an important additional benefit is scientifically proven in the case of brain anomalies with unborn babies. Diagnostic precision has increased by more than 25 per cent of diagnostic accuracy according to the results of an English study (MERIDIAN, 2016). MRI eventually reached 93% of accuracy compared to only 68% of accuracy of the ultrasound. This way MRI provided important, in several cases even crucial indications and more security for further consultations. In 44% of the cases, the additional examination led to a change of the prognosis – sometimes even to a more convenient one.

Even though the benefit of foetal MRI has not been scientifically proven for other organs yet, “we can assume that MRI brings a diagnostic benefit for the breast area as well,” the ESPR conference chair **Prof. Franz Wolfgang Hirsch** says. In the case of diaphragmatic hernia for example, when abdominal contents move into the chest cavity through a hole in the diaphragm, the magnetic resonance can measure how far the lungs are affected. “Also in such cases, MRI might be a better prognosis parameter than ultrasound,” Hirsch, medical director of the department of paediatric radiology of the University Hospital Leipzig, Germany, explains.

In Germany, mostly paediatric radiologists execute intrauterine MRI. However, to Hirsch’s regret, there are not more than 80 of them at the few leading centres in Germany. The fact that compared to the situation in other European countries, patients are only rarely referred to those highly qualified experts leads to the expectation of exciting discussions at the ESPR congress. Meanwhile, “we can discuss primarily how to optimally perform examinations such as intrauterine MRI,” Franz Wolfgang Hirsch states.

The congress is also going to focus on intrauterine therapies. For instance, Hirsch describes that children who had surgery in the mother’s womb to treat a cleft spine less frequently develop a hydrocephalus (accumulation of cerebrospinal fluid within the brain) afterwards and have better life prognoses. Also in this case, the MRI allows a better representation of the situation, and therefore, it is easier for doctors to estimate which children could benefit from such intrauterine surgeries.

Furthermore, one session of the 54th Annual Meeting of the European Society of Paediatric Radiology is going to deal with post-mortem imaging. Many parents who have lost a child refuse to allow an autopsy. Nevertheless, the resulting information about the cause of death of an unborn can have a great impact on further pregnancies. MRI allows the doctors to find the cause without injuring the tiny body.

This year’s most significant congress in the field of paediatric radiology worldwide also deals with many other important topics. The much-needed protection against radiation, which allows the view inside the young patients, is one of them as well as brand new hybrid imaging methods. The conference expects about 650 paediatric radiologists, radiologists and neuroradiologists, including numerous international leading experts, to come to the Hilton Hotel in Berlin. In more than 530 presentations, the participants are offered a manifold scientific

update, which constitutes a fascinating mixture of specialist knowledge and practical aspects for their daily work.

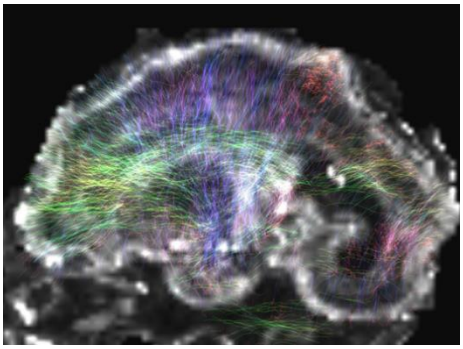

Image of a fibre (fiber tracking) using diffusion imaging in a post-mortem MRI of a foetus at 22 weeks. The varying fibre courses are presented through different colours. The course of the pyramidal tracts (blue) can already be recognised very well at 22 weeks.

(Image: Paediatric Radiology, University Hospital Leipzig)

Prof. Dr. Franz Wolfgang Hirsch

(Photo: Stefan Straube, University Hospita. Leipzig)

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You can find further information about the conference as well as the online programme on the conference website www.espr2018.org

Journalists are cordially invited to attend the conference and to report on it. If you need any accreditation and to receive further details, please get in touch with Mrs. Blankenburg.

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