

Ultrasound
Meets
Magnetic
Resonance

April 22nd - 24th
2015

Rome

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Ultrasound Meets Magnetic Resonance

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Scientific Inspiring Committee

Yves Ville
Daniela Prayer

Congress Scientific Committee

Gustavo Malingher
Gianluca Pilu
Luca Ramenghi
Andrea Rossi

12.30 - 12.40 INTRODUCTION

Yves Ville (Paris, France) - Luca Ramenghi (Genoa, Italy)

12.40 - 13.20 KEY NOTE LECTURE 1

DETAILED FETAL MRI EXAMINATION, AN ALTERNATIVE TO FETAL ULTRASOUND EXAMINATION?

Anne Elodie Millischer (Paris, France)

SESSION 1: ADVANCED MRI TECHNIQUE FOR THE FETAL BRAIN

Chairpersons: Gustavo Malingher (Tel Aviv, Israel) - Anne Elodie Millischer (Paris, France)

13.20 - 13.50 APPLICATION OF INTRAUTERINE DIFFUSION TENSOR IMAGING

Christian Mitter (Vienna, Austria)

13.50 - 14.20 ABNORMALITIES OF FETAL GANGLIONIC EMINENCE

Andrea Righini (Milan, Italy)

14.20 - 14.50 QUANTITATIVE ASSESSMENT OF FETAL BRAIN DEVELOPMENT THROUGH VOLUMETRIC 3D-MRI

Ellen Grant (Boston, USA)

14.50 - 15.10 Discussion

15.10 - 15.30 BREAK

SESSION 2: CONTROVERSIES IN DIGNOSIS OF THE POSTERIOR FOSSA MALFORMATIONS

Chairperson: Yves Ville (Paris, France)

15.30 - 16.00 BLAKE'S CYST. IN UTERO DIAGNOSIS AND PITFALLS

Dario Paladini (Genoa, Italy)

16.00 - 16.30 BLAKE'S CYST. OUTCOME

Andrea Righini (Milan, Italy)

16.30 - 17.00 VARIETY OF POSTERIOR FOSSA MALFORMATIONS AND OUTCOME

Laurent Guibaud (Lyon, France)

17.00 - 17.30 Discussion



17.30 - 19.30 **ORAL COMMUNICATIONS**

A CASE OF VENTRICULOMEGALY

S. Goergen (1,2); G. Whiteley 1; M. Fahey (3,4)

1 Monash Imaging, Monash Health, Clayton, Australia; 2 Department of Surgery, Monash University, Clayton, Australia
3 Paediatric Neuroradiology Unit, Monash Health, Clayton, Australia; 4 Department of Paediatrics, Monash University, Clayton, Australia Stacy Goergen

EMERGING CEREBELLAR PATHWAYS IN HUMANS FROM NEWBORNS TO YOUNG ADULTS USING HIGH ANGULAR RESOLUTION DIFFUSION MR TRACTOGRAPHY

T. J. Re; A. Righini; P E. Grant; E. Takahashi

Radiology, Boston Children's Hospital (BCH), Harvard Medical School, Boston, U.S.A; Radiology, Buzzi Children's Hospital of Milan, Italy; Division of Newborn Medicine, Dept. of Medicine, BCH, Harvard Medical School, Boston, U.S.A. Thomas J Re

INCIDENTAL FINDINGS ON ROUTINE MRI SCANS IN VLBW BABIES: SHOULD WE EXPECT THE UNEXPECTED?

M. Malova 1; L.A. Ramenghi 1; A. Parodi 1; M. Severino 2; G. Morana 2; A. Sannia 1;

A. Rossi 2

1 Neonatal Intensive Care Unit, Istituto Giannina Gaslini, Genoa, Italy; 2 Pediatric Neuroradiology Unit, Istituto Giannina Gaslini, Genoa, Italy Mariya Malova

FETAL CEREBELLAR HAEMORRHAGE: A CASE-SERIES WITH FOLLOW-UP

S. Steggerda 4; N. Aziz 1; C. Peeters-Scholte 1; F. de Bruine 2; F. Klumper 3;

From the Departments of 1; Neuroradiology 2; Gyneacology & Obstetrics 3; and Neonatology 4 of the Leiden University Medical Centre, Leiden, the Netherlands S.J. Steggerda

DEVELOPMENT OF THE FETAL VERMIS: NEW BIOMETRIC REFERENCE DATA AND COMPARISON OF THREE DIAGNOSTIC MODALITIES: 3D, 2D ULTRASOUND AND MAGNETIC RESONANCE IMAGING

E. Katorza 1; E. Bertucci 3; S. Perlman1; S. Taschini 3; S. Kalec 4; R. Ber 1; C. Hoffmann 2;

Y. Gilboa 1; V. Mazza 3; R. Achiron 1

1 Department of Obstetrics and Gynecology; 2 Department of Diagnostic Imaging, the Chaim Sheba Medical Center, Tel Hashomer, Tel-Aviv University, Israel; 3 Department of Obstetrics and Gynecology, Prenatal Medicine Unit; 4 Biostatistic Unit, Modena and Reggio Emilia University Eldad Katorza

FETAL BRAIN MRI: NOVEL CLASSIFICATION AND CONTRIBUTION TO SONOGRAPHY

E. Katorza 1; I. Gat 1; C. Hoffmann 2; D. Shashar 1; O. Bar-Yosef 3; E. Konen 2;

R. Achiron 1

1 Antenatal Diagnostic Unit, Department of Obstetrics and Gynecology; 2 Department of Diagnostic Imaging; 3 The Chaim Sheba Medical Center, Tel Hashomer, and Sackler School of Medicine, Tel Aviv University, Tel Aviv, Israel

PRENATAL BRAIN IMAGING IN ISOLATED VS. COMPLICATED CLUB FOOT: MR AND NEUROSONOGRAPHY STUDY

E. Katorza 1; I. Gat 1; C. Hoffmann 2; O. Lebovitz 1; D. Shashar; Y. Gilboa; 1 I. Yagel 1; R. Achiron 1

1 Antenatal Diagnostic Unit, Department of Obstetrics and Gynecology; 2 Department of Diagnostic Imaging, The Chaim Sheba Medical Center, Tel Hashomer, and Sackler School of Medicine, Tel Aviv University, Tel Aviv, Israel. Eldad Katorza

PRENATAL DIAGNOSIS OF FETAL VENTRICULOMEGALY: AGREEMENT BETWEEN FETAL BRAIN ULTRASONOGRAPHY AND MR IMAGING

E. Katorza 1; S. Perlman 1, D. Shashar 1, C. Hoffmann 1, O. Bar-Yosef 1, R. Achiron 1

1 Antenatal Diagnostic Unit, Department of Obstetrics and Gynecology; 2 Department of Diagnostic Imaging; 3 Pediatric Neurology Unit. The Chaim Sheba Medical Center, Tel Hashomer, and Sackler School of Medicine, Tel Aviv University, Tel Aviv, Israel. Eldad Katorza

FETAL MRI VERSUS POSTNATAL IMAGING IN THE MR-COMPATIBLE INCUBATOR

M. Bekiesinska-Figatowska; A. Romaniuk-Doroszewska; A. Duczkowska; M. Duczkowski,

B. Iwanowska; S. Szkudlinska-Pawlak

Dept. of Diagnostic Imaging, Institute of Mother and Child, Warsaw, Poland M. Bekiesinska-Figatowska

MONOCHORIONIC TWIN GESTATIONS COMPLICATED BY SPONTANEOUS COTWIN DEMISE OR TWIN TWIN TRANSFUSION SYNDROME: WHAT DOES FETAL MRI ADD?

S. Goergen (1,2); A. Robinson 3; M. Batt 1, J Clark 1, A. Edwards 3,4; M. Teoh 3

1 Monash Imaging, Monash Health, Clayton, Victoria, Australia; 2 Monash University, Department of Surgery, Southern Clinical School, Clayton, Victoria, Australia; 3 Fetal Diagnostic Unit, Monash Health, Clayton, Victoria, Australia; 4 Monash University, Department of Obstetrics and Gynaecology, Clayton, Victoria, Australia Stacy Goergen

08.30 - 09.15 KEY NOTE LECTURE 2

THE IMPORTANCE OF NEUROEMBRYOLOGY
Martin Catala (Paris, France)

SESSION 3: VIRTUAL AUTOPSY

Chairpersons: *Yves Ville (Paris, France)*

09.15 - 09.35 HIGH RESOLUTION DTI OF NORMAL BRAIN DEVELOPMENT IN VITRO

Ellen Grant (Boston, USA)

09.35 - 09.55 FETAL AUTOPSY CT IN THE FIRST TRIMESTER

Claudio Lombardi (Milan, Italy)

09.55 - 10.15 FETAL MRI

Fabio Triulzi (Milan, Italy)

10.15 - 10.35 Discussion

10.35 - 11.00 BREAK

SESSION 4: THE COMPLEXITY OF CORTICAL DEVELOPMENT

Chairperson: *Eugenio Mercuri (Rome, Italy)*

11.00 - 11.30 ULTRASOUND DIAGNOSIS OF FETAL CORTICAL MALFORMATION

Gustavo Malinger (Tel Aviv, Israel)

11.30 - 12.00 MRI DIAGNOSIS OF FETAL CORTICAL MALFORMATION

Andrea Righini (Milan, Italy)

12.00 - 12.30 CLINICAL OUTCOME OF CORTICAL MALFORMATION

Renzo Guerrini (Florence, Italy)

12.30 - 12.50 Discussion

12.50 - 13.45 BREAK

SESSION 5: HEART AND BRAIN

Chairpersons: *Luca Ramenghi (Genoa, Italy) - Dario Paladini (Genoa, Italy)*

13.45 - 14.15 FETAL ECHOCARDIOGRAPHY TODAY

Pros: Giulia Tuo (Genoa, Italy)

Cons: Rabih Chaoui (Berlin, Germany)

14.15 - 14.45 FETAL CARDIAC MRI: FRIEND OR FOE

Francesca Raimondi (Paris, France)

14.45 - 15.15 POSTNATAL CARDIAC MRI

Francesca Raimondi (Paris, France)

15.15 - 15.35 Discussion

15.35 - 16.00 BREAK

16.00 - 16.30 BRAIN MRI IN CARDIAC MALFORMATIONS

Ellen Grant (Boston, USA)

16.30 - 17.00 CHARGE SYNDROME

Pascale Sonigo (Paris, France) - Laurent Salomon (Paris, France)

17.00 - 17.30 THE MOST COMMON VASCULAR ACQUIRED LESIONS IN SUCH NEONATES

Paul Govaert (Rotterdam, Netherlands)

17.30 - 18.00 Discussion



18.00 - 19.40 **ORAL COMMUNICATIONS**

**INTERSTITIAL PREGNANCY. DULAIMY; K. CATANZANO;
T. RADIOLOGY DEPARTMENT, BAYSTATE MEDICAL CENTER, SPRINGFIELD, MASSACHUSETTS, USA**

K. Dulaimy
Baystate Medical Center, Springfield, USA

PRENATAL DIAGNOSIS OF TUBEROUS SCLEROSIS. DO WE NEED BRAIN MR?

R. Amster
Lis Maternity Hospital, Tel Aviv, Israel

**FETAL MRI FOR OPEN FETAL MYELOMENINGOCELE REPAIR AT THE ZURICH CENTER FOR
FETAL DIAGNOSIS AND THERAPY**

U. Moehrlen (1,2); I. Blume (1,5); C. Nasiadko (1,5); N. Ochsenbein (1,3); L. Mazzone (1,2); C.J. Kellenberger (1,5); R. Zimmermann (1,3); M. Meuli (1,2); I. Scheer (1,5)
1 The Zurich Center for Fetal Diagnosis and Therapy, Switzerland ; 2 Department of Pediatric Surgery, University Children's Hospital Zurich, Switzerland; 3 Department of Obstetrics, University Hospital Zurich, Switzerland; 4 Department of Anaesthesiology, University Hospital Zurich, Switzerland; 5 Department of Radiology, University Children's Hospital Zurich, Switzerland Ueli Moehrlen

**ANOMALIES OF THE FETAL AORTIC ARCH; CORRELATION BETWEEN IN UTERO ULTRASOUND
EXAMINATION AND POSTNATAL MRI\CT**

R. Achiron 1; Y.Salem 2
1 Ultrasound unit Department of OB/GY; 2 Non Invasive Pediatric Cardiology Sheba Medical Center, Tel Hashomer, and Sackler School of Medicine, Tel Aviv University, Tel Aviv, Israel

**COMPARISON BETWEEN THE NON-INVASIVE APPROACH USING POST-MORTEM MRI AND
CONVENTIONAL AUTOPSY IN FOETAL RENAL ANOMALIES ASSESSMENT – A CASE SERIES?**

*A. Staicu 1; G. Caracostea (1,4); Stanila Popa 2; A. Cioca (3,4); L. Chiriac (5,6);
F. Stamatian (1,4); M. Vasilescu (5,6) 1 Gynecology Clinic*
1 "Mother and Child" Department, University of Medicine and Pharmacy "Iuliu Hatieganu" Cluj-Napoca, Romania; 2 Department of Radiology, University of Medicine and Pharmacy "Iuliu Hatieganu", Cluj-Napoca, Romania; 3 Department of Pathology, University of Medicine and Pharmacy "Iuliu Hatieganu", Cluj-Napoca, Romania; 4 Department of Pathology, Imogen Research Centre, Cluj-Napoca, Romania; 5 Faculty of Physics, "Babes Bolyai" University, M. Kogalniceanu 1, Cluj-Napoca, Romania; 6 National Magnetic Resonance Centre, "Babes Bolyai" University, M. Kogalniceanu 1, Cluj-Napoca, Romania Adelina Staicu

**THREE-DIMENSIONAL TRANSVAGINAL SONOGRAPHIC ASSESSMENT OF THE HUMAN
EMBRYONIC BRAIN**

T. Kovacs; D. Boitor-Borza; F. Stamatian
1st Clinic of Obstetrics and Gynecology, University of Medicine and Pharmacy, Cluj-Napoca, Romania

**MORPHOGENESIS OF THE BRAIN IN THE EMBRYONIC PERIOD: ANATOMICAL STUDY AND
IN VITRO ASSESSMENT WITH 7 T MICRO-MRI**

D. Boitor-Borza 1; C. Crivii 2; F. Turcu 3; S. Farcasanu 4; F. Stamatian 5
1 1st Clinic of Obstetrics and Gynecology, University of Medicine and Pharmacy, Cluj-Napoca, Romania; 2 Department of Anatomy and Embryology, University of Medicine and Pharmacy, Cluj-Napoca, Romania; 3 National Magnetic Resonance Center, "Babes-Bolyai" University, Cluj-Napoca, Romania; 4 National Magnetic Resonance Center, "Babes-Bolyai" University, Cluj-Napoca, Romania; 5 1st Clinic of Obstetrics and Gynecology, University of Medicine and Pharmacy, Cluj-Napoca, Romania Dan Boitor-Borza

**ULTRASOUND AND MRI IN FETAL SPINAL ANOMALIES OTHER THAN DYSRAPHISM AT 20-
21 WEEKS OF GESTATION: A CASES SERIES STUDY**

E. Filippi 1 E. Trincia 2; M. Bendini 2; S. Romeo 3; G. Bracalente 1 5
1 Prenatal Diagnosis Unit, Ca' Foncello Hospital, Treviso, Italy; 2 Department of Neuroradiology, Ca' Foncello Hospital, Treviso, Italy; 3 Department of Pathology, Ca' Foncello Hospital, Treviso, Italy E. Filippi

**EXAMINATION OF SUBPLATE AND INTERMEDIATE FETAL CEREBRAL LAYERS AT 25 TO 29
WEEKS' GESTATION BY TRANSVAGINAL NEUROSONOGRAPHY IN SEVERELY RESTRICTED
GROWTH FETUSES**

T. Loureiro ; S. Diniz ; T. Castro
Department of Obstetrics and Gynecology, S João Hospital, Medical School, University of Porto, Porto, Portugal Teresa Loureiro

CURRENT LIMITS IN DIAGNOSIS OF PLACENTAL ACCRETISM

*M. Tintoni, M. Viggiano, A. Vidiri, S. Buongiorno, P. Ciliberti, P. Rosati, L. Guariglia, A.L. Valentini, B. Gui,
M. Miccò, V. Ninivaggi, G. Scambia, A.F. Cavaliere*
Department of Obstetrics and Gynecology Department or Radiological Science Università Cattolica del Sacro Cuore Policlinico Universitario "A. Gemelli" Rome, Italy

08.15 - 08.45 KEY NOTE LECTURE 3

FETAL ANGIOMAS
Laurent Guibaud (Lyon, France)

SESSION 6: VEIN OF GALEN MALFORMATION

Chairpersons: *Laurent Guibaud (Lyon, France) - Andrea Righini (Milan, Italy)*

08.45 - 09.15 FETAL ULTRASOUND FEATURES

Benjamin Deloison (Paris, France)

09.15 - 09.45 FETAL AND NEONATAL MRI

Andrea Rossi (Genoa, Italy)

09.45 - 10.15 THE RATIONALE FOR TREATMENT

Carlo Gandolfo (Genoa, Italy)

10.15 - 10.35 Discussion

10.35 - 11.00 BREAK

SESSION 7: UP DATE ON SPINE ANOMALIES

Chairperson: *Luca Ramenghi (Genoa, Italy) - Yves Ville (Paris, France)*

11.00 - 11.30 US AND DYSRAPHYSM

Gianluigi Pilu (Bologna, Italy)

11.30 - 12.00 THE COMPLEXITY OF MRI DIAGNOSIS

Andrea Rossi (Genoa, Italy)

12.00 - 12.30 FETAL SPINAL DYSRAPHISM: THE CONUS MEDULLARIS AND THE SPECTRUM OF NEURAL TUBE DEFECTS

D. Pugash (Vancouver, British Columbia)

12.30 - 13.00 Discussion

13.00 - 14.00 BREAK

SESSION 8: FETAL INFECTIONS

Chairpersons: *Yves Ville (Paris, France) - Denise Pugash (Vancouver, British Columbia)*

14.00 - 14.30 US DIAGNOSIS

Yves Ville (Paris, France)

14.30 - 15.00 CMV INFECTION: MRI DIAGNOSIS

Pascale Sonigo (Paris, France)

15.00 - 15.30 Discussion

15.30 - 16.00 BREAK

SESSION 9: ACQUIRED BRAIN LESIONS, COMMON IN VERY PREMATURE BABIES AND POSSIBLE DURING FETAL LIFE

Chairpersons: *Yves Ville (Paris, France) - Andrea Righini (Milan, Italy)*

16.00 - 16.30 US TO DIAGNOSE FETAL INTRAVENTRICULAR HAEMORRHAGE (IVH) AND VENOUS THROMBOSIS

Gustavo Malinger (Tel Aviv, Israel)

16.30 - 17.00 FETAL CEREBELLAR HAEMORRHAGE AND IVH DIAGNOSED WITH MRI

Maria Savina Severino (Genoa, Italy)

17.00 - 17.30 THE FETAL HYDROCEPHALUS: THE ROLE OF MRI

Lucia Manganaro (Rome, Italy)

17.30 - 18.00 THE ROLE OF US AND MRI IN THE DIAGNOSIS OF LOW GRADE HAEMORRHAGE OF PREMATURE BABIES

Luca Ramenghi (Genoa, Italy)

18.00 - 18.30 Discussion

18.30 - 19.00 CLOSING REMARKS