Intrapartum Ultrasonography for Labor Management

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Editor
Antonio Malvasi, M.D.
Department of Obstetric
and Gynecology
Santa Maria Hospital
Bari
Italy

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To my wife, Elena, and my children, Mariaelena and Vito Maurizio, who, of all that walk the earth, are most precious to me: They are the reason I am here. They have always been there for me and have never doubted my dreams, no matter how crazy they might be.

Preface

Ultrasound has revolutionized the traditional midwife, and semiotics in particular gave a dignity to the unborn child, who is now framed as a patient. However, the main interest has been on ultrasound fetal malformations and fetal growth, whether normal or pathological, while little interest has been directed to the delivery event.

Indeed, although the birth is a common phenomenon, few technologies have been developed for the monitoring of labor. This phenomenon contrasts with everyday reality. In fact, for example, although fetal distress represents 1–2% of deliveries, it can be monitored with different instrumental techniques (cardiotocography, pulse oximetry using Stan®, pH-metry), dystocia affects about 40% of the deliveries but it is still diagnosed manually, as it was in 1700.

Intrapartum sonography is a relatively new technique; it adds to what is felt by the fingers as the eye can see objectively the commitment, the descent, and the rotation of the fetal head in the birth canal. This makes it possible to follow the labor in a more objective view by midwives and enables early detection of labor dystocia, allowing timely intervention and reducing maternal and fetal complications. On the other hand, an objective evaluation of labor reduces operative deliveries based on a presumptive diagnosis of dystocia, provides a documentation of labor developments, and enables operators to lower exposure to possible litigation in case of complications that bring charges of malpractice. A new ultrasonography area, intrapartum obstetric ultrasound, has been documented by a growing number of scientific articles that increase the literature. In fact, it is forming a scientific level, a real "pelvimetric ultrasound," that does not replace but strongly supports pelvimetry by providing clinical support of objectivity and by showing the mechanisms of parturition in occipito anterior, posterior, and transverse presentations. In the near future, the literature will be subject to an inevitable revision of the results obtained from the classical clinical symptomatology alone. This text, in the authors' opinion, is easy to consult and offers practical support to those who operate and work in the delivery room and attempt to better diagnose physiological from pathological labor and to reduce the inevitable risks involved in the complex phenomenon that is childbirth. Furthermore, our work fills a gap in publishing today on a topic of considerable practical interest that we hope will inspire the attention it deserves.

Bari, Italy — Antonio Malvasi, M.D.
Perugia, Italy — Gian Carlo Di Renzo, M.D., Ph.D.

Contents

Contributors

Miguel Angel Barber, M.D., Ph.D. Prenatal Diagnosis and Fetal Therapy Unit, Department of Obstetrics and Gynecology, Insular and Maternal Universitary Hospitalary Complex (CHUIMIC), Las Palmas of Grand Canary, Spain

Department of Obstetrics and Gynecology, Canaries University Hospital Maternity Ward, Las Palmas de Gran Canaria, Spain

Antonio F. Barbera, M.D. Swan Mountain, Women's Center, Breckenridge, CO, USA

Department of Obstetrics and Gynecology, School of Medicine, University of Colorado Denver, Aurora, CO, USA

Rocky Vista University College of Osteopathic Medicine, Parker, CO, USA

Department of Obstetric and Gynecology, Denver Health Medical Center, Denver, CO, USA

Vincenzo Berghella, M.D., Ph.D. Division of Maternal-Fetal Medicine, Department of Obstetrics and Gynecology, Jefferson Medical College of Thomas Jefferson University, Philadelphia, PA, USA

Mario Bochicchio, Ph.D. Department of Innovation Engineering, University of Salento, Lecce, Italy

Thorsten Braun, M.D. Department of Obstetrics, Charité Medical University Berlin, Berlin, Germany

Frederic Chantraine, M.D. Department of Gynecology and Obstetrics, Centre Hospitalier Régional de la Citadelle, University of Liège, Liège, Belgium

Domenico Dell'Edera, Ph.D. Unit of Cytogenetic and Molecular Genetics, "Madonna delle Grazie" Hospital, Matera, Italy

Gian Carlo Di Renzo, M.D., Ph.D. Department of Obstetrics and Gynecology, Centre for Perinatal and Reproductive Medicine, University of Perugia, Perugia, Italy

Anna Maria Dückelmann, M.D. Department of Obstetrics, Charité – University Hospital, Campus Charité Mitte, Berlin, Germany

Torbjørn Moe Eggebø, Ph.D. Department of Obstetrics and Gynecology, Stavanger University Hospital, Stavanger, Norway

National Center for Fetal Medicine, Trondheim University Hospital (St. Olav's Hospital), Trondheim, Norway

Dan Farine, M.D., FRCS Department of Obstetrics and Gynaecology, Mount Sinai Hospital, University of Toronto, Toronto, ON, Canada

Jose A. Garcia-Hernandez, M.D., Ph.D. Prenatal Diagnosis and Fetal Therapy Unit, Department of Obstetrics and Gynecology, Insular and Maternal Universitary Hospitalary Complex (CHUIMIC), Las Palmas of Grand Canary, Spain

Tullio Ghi, M.D., Ph.D. Department of Obstetrics and Gynecology, Sant'Orsola Malpighi University Hospital, University of Bologna, Bologna, Italy

I Clinica Ostetrica-Ginecologica, Policlinico S. Orsola-Malpighi, Bologna, Italy

Francesco Giacci, M.D. Department of Obstetric and Gynecology, SS. Annunziata Hospital, Chieti, Italy

Sarah Gustapane, M.D. Department of Obstetric and Gynecology, SS. Annunziata Hospital, Chieti, Italy

Wolfgang Henrich, M.D. Department of Obstetrics, Charit´e Virchow Clinic, Berlin, Berlin, Germany

Drorith Hochner-Celnikier, M.D. Department of Obstetrics and Gynecology, Hadassah University Hospital, Jerusalem, Israel

Karim D. Kalache, M.D., Ph.D. Department of Obstetrics, Charité – University Hospital, Campus Charité Mitte, Berlin, Germany

Antonio Malvasi, M.D. Department of Obstetric and Gynecology, Santa Maria Hospital, Bari, Italy

Elisa Maroni, M.D. Department of Obstetrics and Gynecology, Sant'Orsola Malpighi University Hospital, University of Bologna, Bologna, Italy

Margarita Medina, M.D. Prenatal Diagnosis and Fetal Therapy Unit, Department of Obstetrics and Gynecology, Insular and Maternal Universitary Hospitalary Complex (CHUIMIC), Las Palmas of Grand Canary, Spain

Francisca S. Molina, M.D., Ph.D. Maternal-Fetal Medicine Unit, Department of Obstetrics and Gynecology, San Cecilio University Hospital (HUSC), Granada, Spain

Elena Pacella, M.D., Ph.D. Department of Sense Organs-Ophthalmology, Sapienza University of Rome, Italy

Yoav Paltieli, M.D., Ph.D., LLB Division of Infertility, Bnei Zion Hospital Haifa, Haifa, Israel

Trig Medical, Ridgefield Park, NJ, USA

Trig Medical Ltd., YoqneamIlit, Israel

Gianluigi Pilu, M.D., Ph.D. Department of Obstetrics and Gynecology, Sant'Orsola Malpighi University Hospital, University of Bologna, Bologna, Italy

Thomas Popowski, M.D. Department of Obstetrics and Gynecology, Reproductive Biology and Cytogenetics, Poissy-Saint Germain Hospital, University Versailles-St Quentin, Poissy, France

Sushma Potti, M.D. Division of Maternal-Fetal Medicine, Department of Obstetrics and Gynecology, Jefferson Medical College of Thomas Jefferson, University, Philadelphia, PA, USA

Nicola Rizzo, M.D., Ph.D. Department of Obstetrics and Gynecology, Sant'Orsola Malpighi University Hospital, University of Bologna, Bologna, Italy

Azahar Romero, M.D. Prenatal Diagnosis and Fetal Therapy Unit, Department of Obstetrics and Gynecology, Insular and Maternal Universitary Hospitalary Complex (CHUIMIC), Las Palmas of Grand Canary, Spain

Patrick Rozenberg, M.D. Department of Obstetrics and Gynecology, Reproductive Biology and Cytogenetics, Poissy-Saint Germain Hospital, University Versailles-St Quentin, Poissy, France

Centre Hospitalier Poissy-Saint-Germain, Poissy, France

Kjell Åsmund Salvesen, M.D., Ph.D., dr.med National Center for Fetal Medicine, Trondheim University Hospital (St. Olav's Hospital), Trondheim, Norway

Department of Laboratory Medicine, Children's and Women's Health, Norwegian University of Science and Technology, Trondheim, Norway

Andrea Tinelli, M.D. Division of Experimental Endoscopic Surgery, Imaging, Minimally Invasive Therapy and Technology, Department of Obstetric and Gynecology, Vito Fazzi Hospital, Lecce, Italy

Boris Tutschek, M.D. Department of Obstetrics and Gynecology, Bern University Hospital, Bern, Switzerland

Medical Faculty, Heinrich Heine University, Düsseldorf, Germany

Aly Youssef, M.D. Department of Obstetrics and Gynecology, Sant'Orsola Malpighi University Hospital, University of Bologna, Bologna, Italy

Ariel L. Zimerman, M.D., Ph.D. Department of Obstetrics and Gynecology, Assaf Harofeh Medical Center (affiliated with the Sackler School of Medicine, Tel-Aviv University), Zerifin, Israel