Assessment Of Placental And Fetal Oxygenation In Normal

Equine Reproductive Procedures
Placental Pathology, An Issue of Surgical Pathology Clinics,
Critical Concepts in Fetal Monitoring
Assessment of Placental and Fetal Oxygenation in Normal and Abnormal Pregnancy Using Magnetic Resonance Imaging
Fetal Growth Retardation
The Guide to Investigation of Mouse Pregnancy
Fetal-Maternal Immune Interactions in Pregnancy
Current Evidence and Clinical Practice
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Application of Ultrasonography in Early Pregnancy
Glycolytic Metabolism and Pregnancy Parameters in the Murine Placenta
High Risk Pregnancy
Placental Pathology
Anesthesia for Maternal-Fetal Surgery
Doppler Ultrasound in Obstetrics and Gynecology
Assessment of Placental Function and Fetal Phenotype of Mice Conceived by Mice Conceived by Optimized in Vitro Culture Conditions
Assessment of Hemodynamic Parameters in the Fetal and Utero-placental Circulation Using Doppler Ultrasound
ROLE OF ULTRASONOGRAPHY ASSESSMENT OF PLACENTAL CHANGES DURING PREGNANCY
A Practical Guide
Clinical Applications of Doppler Ultrasound
Diagnosis and Treatment
Assessing Fetal Wellbeing
Placental and Fetal Doppler
Placental-Fetal Growth Restriction

Assessment of fetal outcome by maternal serum placental lactogen, alpha feto protein and urinary estriol excretion
MRI Assessment of Placental Size, Structure and Perfusion in Pregnancies with Small for Gestational Age Neonates
Assessment of Nos and Gluts in Development of the Rabbit Placenta
Causes and Consequences of Intrauterine Growth Restriction
Fetal Growth Restriction
Fetal Medicine

JAMAL LOPEZ

Equine Reproductive Procedures CRC Press
Obstetricical care and the growing number of pregnancies in older women or medically challenged women creates an expanding need for placental pathology that can provide information on neonatal care, risk assessment, and infant and mother outcomes. In the Surgical Pathology Clinics, Essential Gross Examination of the Placenta is presented with an abundance of images along with clear steps in the examination. Also presented are Placenta Accreta and Percreta; Ascending Infection – Acute Chorioamnionitis; Maternal Floor Infarction and Massive Perivillous Fibrin Deposition. Additionally, Umbilical Cord Pathology, Monozygotic Twinning, and Fetal Thrombotic Vasculopathy, Neonatal Stroke and other sequelae are discussed. Each of the topics presents abundant clinical photos and histology slides supporting diagnosis. Editor Rebecca Baergen, whose specialty areas are fetal pathology, placental pathology, gynecology and perinatal pathology, leads a group of authors who are experts in placental pathology, including her mentor and one of the pioneers in placental and perinatal pathology, Dr. Kurt Benirschke.
Placental Pathology, An Issue of Surgical Pathology Clinics, LAP Lambert Academic Publishing
Some of the best known and respected educators in the field have contributed to this unique video set, designed to improve staff and student competence in fetal assessment. Aimed at the experienced interpreter of electronic fetal monitoring, the program is unique in its comprehensive approach. It's the first educational tool to promote individualized patient interventions, based on both fetal heart rate response and maternal/fetal condition. Concepts of maternal, placental, and fetal physiology are integrated with technical procedures, and the underlying concept of oxygen transport is discussed, helping viewers to understand the journey of oxygen between mother and fetus. The editors present the material using case studies, focusing attention on the nurse's role in adjusting assessments, care, and evaluation based on specific case information rather than "historically prescribed protocols." Tape 5 available separately. Additional Resource Manuals available.
Critical Concepts in Fetal Monitoring Williams & Wilkins
In this unique book emphasis is placed on tests necessary to evaluate fetal well-being and to detect those fetuses at risk of hypoxia and acidosis in utero. Written by pioneers in the neonatal field, this

publication contains chapters on the pathophysiology , obstetric management, and collagen diseases of intrauterine growth retardation. Ultrasound in detection of growth retarded fetuses is explored, as well as magnetic resonance imaging and magnesium substitution for the prevention of intrauterine growth retardation. Containing never-before-published information, this volume is an excellent reference source for both investigators in the field and those entering it. Topics Include: Perinatal growth chart for international reference Ultrasound guided procedures in small for gestation fetuses Utero-placental and fetal circulation

Assessment of Placental and Fetal Oxygenation in Normal and Abnormal Pregnancy Using Magnetic Resonance Imaging Cambridge University Press

As women of childbearing age have become heavier, the trade-off between maternal and child health created by variation in gestational weight gain has become more difficult to reconcile. Weight Gain During Pregnancy responds to the need for a reexamination of the 1990 Institute of Medicine guidelines for weight gain during pregnancy. It builds on the conceptual framework that underscored the 1990 weight gain guidelines and addresses the need to update them through a comprehensive review of the literature and independent analyses of existing databases. The book explores relationships between weight gain during pregnancy and a variety of factors (e.g., the mother's weight and height before pregnancy) and places this in the context of the health of the infant and the mother, presenting specific, updated target ranges for weight gain during pregnancy and guidelines for proper measurement. New features of this book include a specific range of recommended gain for obese women. Weight Gain During Pregnancy is intended to assist practitioners who care for women of childbearing age, policy makers, educators, researchers, and the pregnant women themselves to understand the role of gestational weight gain and to provide them with the tools needed to promote optimal pregnancy outcomes.

Fetal Growth Retardation Frontiers Media SA

Expanded and updated edition highlighting current standards and breakthroughs in the technology of Doppler ultrasound Includes latest advances in 3D and color doppler and 4D fetal echocardiography Includes more than 500 illustrations, including more than 150 in color

The Guide to Investigation of Mouse Pregnancy Springer Science & Business Media

This comprehensive clinical textbook on Doppler assessment of placental and fetal circulation provides the foundation needed for the theoretical component of the Certificate of Competence in placental and fetal Doppler awarded by the International Society of Ultrasound in Obstetrics and Gynecology and the International Society of Perinatal Medicine. Following introductory chapters on Doppler ultrasound principles, practice, safety and methodology, the book covers Doppler studies in the full range of areas relevant to placental and fetal circulation. Key features: *Explains Doppler assessment of placental and fetal circulation *Provides the basis of learning for a certificate of competence in placental and fetal Doppler *Contains introductory material on Doppler ultrasound principles, practice, safety and methods

Includes bibliographic references and index

Fetal-Maternal Immune Interactions in Pregnancy Springer

Some of the best known and respected educators in the field have contributed to this unique video set, designed to improve staff and student competence in fetal assessment. Aimed at the experienced interpreter of electronic fetal monitoring, the program is unique in its comprehensive approach. It's the first educational tool to promote individualized patient interventions, based on both fetal heart rate response and maternal/fetal condition. Concepts of maternal, placental, and fetal physiology are integrated with technical procedures, and the underlying concept of oxygen transport is discussed, helping viewers to understand the journey of oxygen between mother and fetus. The editors present the material using case studies, focusing attention on the nurse's role in adjusting assessments, care, and evaluation based on specific case information rather than "historically prescribed protocols." Tape 5 available separately. Additional Resource Manuals available.

Current Evidence and Clinical Practice Biota Publishing

The placenta is an organ that connects the developing fetus to the uterine wall, thereby allowing nutrient uptake, waste elimination, and gas exchange via the mother's blood supply. Proper vascular development in the placenta is fundamental to ensuring a healthy fetus and successful pregnancy. This book provides an up-to-date summary and synthesis of knowledge regarding placental vascular biology and discusses the relevance of this vascular bed to the functions of the human placenta.

Assessment of Fetal Outcome by Maternal Serum Placental Lactogen, Alpha Fetoprotein and Urinary Estriol Excretion Amer Registry of Pathology

Master the effective evaluation of placental-fetal growth restriction (PFGR), whilst reducing the risk of perinatal mortality and morbidity in patients worldwide.

A Comprehensive Guide CRC Press

This comprehensive clinical textbook on Doppler assessment of placental and fetal circulation provides the foundation needed for the theoretical component of the Certificate of Competence in placental and fetal Doppler awarded by the International Society of Ultrasound in Obstetrics and Gynecology and the International Society of Perinatal Medicine. Following introductory chapters on Doppler ultrasound principles, practice, safety and methodology, the book covers Doppler studies in the full range of areas relevant to placental and fetal circulation. Key features:*Explains Doppler assessment of placental and fetal circulation*Provides the basis of learning for a certificate of competence in placental and fetal Doppler*Contains introductory material on Doppler ultrasound principles, practice, safety and methods Includes bibliographic references and index

The Human Placenta Elsevier

Introduction: The placenta is a complex, disk-shaped organ vital to a successful pregnancy and responsible for materno-fetal exchange of vital gases and biochemicals. Instances of compromised placental development or function - collectively termed placenta dysfunction - underlies the most common and devastating pregnancy complications observed in North America, including preeclampsia (PE) and fetal growth restriction (FGR). A comprehensive

histopathology examination of the placenta following delivery can help clarify obstetrical disease etiology and progression and offers tremendous potential in the identification of patients at risk of recurrence in subsequent pregnancies, as well as patients at high risk of chronic diseases in later life. However, these types of examinations require a high degree of specialized training and are resource intensive, limiting their availability to tertiary care centers in large city centres. The development of machine learning algorithms tailored to placenta histopathology applications may allow for automation and/or standardization of this important clinical exam - expanding its appropriate usage and impact on the health of mothers and infants. The primary objective of the current project is to develop and pilot the use of machine learning models capable of placental disease classification using digital histopathology images of the placenta. Methods: 1) A systematic review was conducted to identify the current methods being applied to automate histopathology screening to inform experimental design for later components of the project. Of 230 peer-reviewed articles retrieved in the search, 18 articles met all inclusion criteria and were used to develop guidelines for best practices. 2) To facilitate machine learning model development on placenta histopathology samples, a villi segmentation algorithm was developed to aid with feature extraction by providing objective metrics to automatically quantify microscopic placenta images. The segmentation algorithm applied colour clustering and a tophat transform to delineate the boundaries between neighbouring villi. 3) As a proof-of-concept, 2 machine learning algorithms were tested to evaluated their ability to predict the clinical outcome of preeclampsia (PE) using placental histopathology specimens collected through the Research Centre for Women's and Infant's Health (RCWIH) BioBank. The sample set included digital images from 50 cases of early onset PE, 29 cases of late onset PE and 69 controls with matching gestational ages. All images were pre-processed using patch extraction, colour normalization, and image transformations. Features of interest were extracted using: a) villi segmentation algorithm; b) SIFT keypoint descriptors (textural features); c) integrated feature extraction (in the context of deep learning model development). Using the different methods of feature extraction, two different machine learning approaches were compared - Support Vector Machine (SVM) and Convolutional Neural Network (CNN, deep learning). To track model improvement during training, cross validation on 20% of the total dataset was used (deep learning algorithm only) and the trained algorithms were evaluated on a test dataset (20% of the original dataset previously unseen by the model). Results: From the systematic review, 5 key steps were found to be essential for machine learning model development on histopathology images (image acquisition and preparation, image preprocessing, feature extraction, pattern recognition and classification model training, and model testing) and recommendations were provided for the optimal methods for each of the 5 steps. The segmentation algorithm was able to correctly identify individual villi with an F1 score of 80.76% - a significantly better performance than recently

published methods. A maximum accuracy of 73% for the machine learning experiments was obtained when using textural features (SIFT keypoint descriptors) in an SVM model, using onset of PE disease (early vs. late) as the output classification of interest. Conclusion: Three major outcomes came of this project: 1) the range of methods available to develop automated screening tools for histopathology images with machine learning were consolidated and a set of best practices were proposed to guide future projects, 2) a villi segmentation tool was developed that can automatically segment all individual villi from an image and extract biologically relevant features that can be used in machine learning model development, and 3) a prototype machine learning classification tool for placenta histopathology was developed that was able to achieve moderate classification accuracy when distinguishing cases of early onset PE and late onset PE cases from controls. The collective body of work has made significant contributions to the fields of placenta pathology and computer vision, laying the foundation for significant progress aimed at integrating machine learning tools into the clinical setting of perinatal pathology.

Second Edition Wiley-Blackwell Assessment of Placental and Fetal Oxygenation in Normal and Abnormal Pregnancy Using Magnetic Resonance ImagingA Murine Model for the Assessment of Placental and Fetal Development in Teratogenicity StudiesPlacental and Fetal Doppler

First-Trimester Ultrasound Elsevier Health Sciences

Following on from the success of their previous standard textbook on Multiple Pregnancy, the authors have refocused their attention on prenatal assessment in multiple pregnancy and come up with condensed and revised material in a free-standing text. Multiple pregnancies are associated with higher levels of morbidity and fetal distress, and so effective and rapid diagnosis of problems is paramount. Those clinicians who would not have a practical application for all the aspects covered comprehensively in the earlier work will find this volume a clinically orientated and extremely useful addition to their working library.

Impaired Placental Nutrient Transport in Mice Generated by in Vitro Fertilization Lippincott Williams & Wilkins

This dissertation, "Application of Ultrasonography in Early Pregnancy" by Min, Chen, □□, was obtained from The University of Hong Kong (Pokfulam, Hong Kong) and is being sold pursuant to Creative Commons: Attribution 3.0 Hong Kong License. The content of this dissertation has not been altered in any way. We have altered the formatting in order to facilitate the ease of printing and reading of the dissertation. All rights not granted by the above license are retained by the author. Abstract: M Chen Abstract of thesis entitled APPLICATION OF ULTRASONOGRAPHY IN EARLY PREGNANCY Submitted by Chen Min for the degree of Doctor of Philosophy at The University of Hong Kong in June 2006 With the continuous technological improvement of obstetric ultrasonography, the number of fetal anomalies detected in the first and early second trimester continued to increase. This thesis summarizes the original research findings of the effectiveness of high resolution ultrasonography for screening fetal structural abnormalities in early pregnancy, and the evaluation of new technology (3-dimensional imaging)

in feto-placental volumetric study. In an observational study involving a total of 1604 high risk women including 1599 singletons and 5 pairs of twins, the detection rate for structural abnormalities in the first trimester was 53.8 % (95% CI 44-64). The overall detection rate of structural M Chen abnormalities in the first and second trimester was 76.9% (95% CI 68.6-85.2). In a randomized control trial involving 7757 women from an unselected population, the detection rate of abnormality in the first trimester was 47.6% (95% CI 34.9-60.6), while the overall detection rate of abnormality in the first and second trimester was 66.7% (95% CI 53.7-78) in the study group (detailed 12-14 week scan followed by routine 18-23 week scan). The corresponding figures for the control group (11-14 week nuchal scan followed by routine 18-23 week scan) were 32.8% (95% CI 21.6-45.7), 64.1% (95% CI 51.1-75.7), respectively. There was no significant difference between two groups (P>0.05). Both the observational study in the high-risk population and the randomized control trial in the unselected population showed that the effectiveness of ultrasound examination at 12-14 weeks to screen for fetal abnormalities approached that achieved at 20 weeks and could be a good adjunct to the conventional examination. Our study also show that in centers where NT scan is offered, a detailed first trimester fetal morphology scan does not make any significant difference in the overall detection rate as well as the first trimester detection rate for fetal abnormalities in the general population. We confirm that it is possible to detect congenital abnormalities even with first-trimester nuchal translucency (NT) screening ultrasound in an unselected pregnant population. As a single scan at 12-14 week will not detect all fetal abnormalities, the conventional 18-23 week follow-up examination should ii M Chen always be performed. Three-dimensional ultrasound is a new imaging modality. Early fetal volume measurement by three-dimensional ultrasonography using the multiplanar technique and the rotational (VOCAL) technique was studied. The multiplanar technique appeared to be technically superior to VOCAL in measuring the fetal volume. We evaluated the use of placental volume measured by three-dimensional ultrasonography in predicting homozygous α -thalassaemia. It was demonstrated that assessment of placental volume did not seem to be superior to two-dimensional ultrasound in first-trimester prediction of homozygous α -thalassaemia. iii DOI: 10.5353/th_b3660331 Subjects: Fetus - Ultrasonic imaging Pregnancy - Trimester, First Three-dimensional imaging in medicine

Reexamining the Guidelines Springer Science & Business Media

The Guide to Investigation of Mouse Pregnancy is the first publication to cover the mouse placenta or the angiogenic tree the mother develops to support the placenta. This much-needed resource covers monitoring of the cardiovascular system, gestational programming of chronic adult disease, epigenetic regulation, gene imprinting, and stem cells. Offering detailed and integrated information on how drugs, biologics, stress, and manipulations impact pregnancy in the mouse model, this reference highlights techniques used to analyze mouse pregnancy. Joining the ranks of much referenced mouse resources, The Guide to Investigation of Mouse Pregnancy is the only manual

providing needed content on pregnancy in animal models for translational medicine and research. Provides instruction on how to collect pre-clinical data on pregnancy in mouse models for eventual use in human applications Describes the angiogenic tree the mother’s uterus develops to support pregnancy and the monitoring of pregnancy-induced cardiovascular changes Educates readers on placental cell lineages, decidual development including immune cells, epigenetic regulation, gene imprinting, stem cells, birth and lactation Discusses how stress, environmental toxicants and other manipulations impact upon placental function and pregnancy success

A Murine Model for the Assessment of Placental and Fetal Development in Teratogenicity Studies The Royal Australian and New Zealand College of Obstetricians and Gynaecologists PURPOSE To examine the potential value of placental MRI assessment in the prediction of pregnancies that result in delivery of small for gestational age (SGA) neonates. -- MATERIALS AND METHODS Three groups of singleton pregnancies were recruited: (1) normal group (estimated fetal weight on or above the 10th percentile and uterine artery pulsatility index (PI) below the 95th percentile); (2) abnormal Doppler group (estimated fetal weight on or above the 10th percentile but uterine artery PI above the 95th percentile); and (3) low estimated fetal weight group (estimated fetal weight below the 10th percentile and uterine artery PI above the 95th percentile). -- In total there were 88 pregnancies at 24-29 weeks' gestation. All the women had uterine artery PI measured by Doppler ultrasound. Four different magnetic resonance imaging (MRI) sequences were acquired at 1.5T: structural images were obtained for the calculation of placental volumes (n=83); placental perfusion was carried out using the flow-sensitive alternating recovery (FAIR) sequence (n=59) and the intravoxel incoherent motion (MM) sequence (n=37); and placental T2 relaxation time was measured (n=40). -- The significance between the four MRI measurements, uterine artery PI and birth weight percentile was examined. -- RESULTS In pregnancies that resulted in delivery of SGA neonates with birth weight below the 10th percentile the median placental volume corrected for gestational age, the placental perfusion measured by FAIR and MM, and placental T2 relaxation were all significantly decreased and uterine artery PI was significantly increased. -- There were significant associations between all the MRI measurements and uterine artery PI and birth weight percentile.

assessment of fetal outcome by maternal serum placental lactogen, alpha fetoprotein and urinary estriol excretion Cambridge University Press This book offers a unique and focused study of the use of ultrasound during the first trimester, a critical time in a fetus’ development. It includes basic examination guidelines as well as cutting-edge ultrasound modalities, including Doppler and three-dimensional ultrasound, for the period immediately preceding conception through early embryology. Beginning with a discussion of the safety and efficacy of diagnostic ultrasound and the use of this modality for the evaluation and treatment of infertility, recognized experts in the field explore conditions that may interfere with normal conception or development, including maternal diseases that would

benefit from early scanning, elements of teratology, multiple gestations, ectopic pregnancy, gestational trophoblastic disease, fetal anomalies and invasive procedures in the first trimester. Numerous illustrations and figures are provided to serve as aids for understanding key concepts. First-Trimester Ultrasound is a valuable resource for many, in or after training, in obstetrics and gynecology, radiology, emergency medicine, family medicine and genetics.

A Multidisciplinary Approach National Academies Press

Chesley’s Hypertensive Disorders in Pregnancy continues its tradition as one of the beacons to guide the field of preeclampsia research, recognized for its uniqueness and utility. Hypertensive disorders remain one the major causes of maternal and fetal morbidity and death. It is also a leading cause of preterm birth now known to be a risk factor in remote cardiovascular disease. Despite this the hypertensive disorders remain marginally studied and management is often controversial. The fourth edition of Chesley’s Hypertensive Disorders in Pregnancy focuses on prediction, prevention, and management for clinicians, and is an essential reference text for clinical and basic investigators alike. Differing from other texts devoted to preeclampsia, it covers the whole gamut of high blood pressure, and not just preeclampsia. Features new chapters focusing on recent discoveries in areas such as fetal programming, genomics/proteomics, and angiogenesis Includes extensive updates to chapters on epidemiology, etiological considerations, pathophysiology, prediction, prevention, and management Discusses the emerging roles of metabolic syndrome and obesity and the increasing incidence of preeclampsia Each section overseen by one of the editors; each chapter co-authored by one of the editors, ensuring coherence throughout book

Application of Ultrasonography in Early Pregnancy Frontiers Media SA

Biochemical tests of fetal well-being ('placental function tests') have been part of routine obstetric practice for more than twenty years. This book provides an overview of the current status of these tests - the physiological basis for their use, and their advantages and limitations in clinical practice. Considerable attention is given to interpretation, a subject which in the past has led to much confusion both in the scientific literature and in the minds of clinicians. Recent advances are described in detail, in particular the discovery of a whole new generation of placental products some of which offer great promise in the prediction of conditions, such as placental abruption and premature labour, which cannot be identified by any other current parameters. Finally, a set of clear recommendations is put forward for the choice of test in most of the common complications of both early and late pregnancy. The emphasis throughout is on how the basic biology of fetoplacental products dictates their use and interpretation in pathological conditions.

Glycolytic Metabolism and Pregnancy Parameters in the Murine Placenta Cambridge University Press

Fetal growth restriction (FGR) is a condition that affects 5%–10% of all pregnancies and is the second most common cause of perinatal mortality. Fetuses with FGR present with a greater risk of long-term health defects as impaired neurological and cognitive development and cardiovascular or

endocrine diseases in adulthood. Due to its high prevalence and serious long term consequences, an in-depth understating of the diagnosis and management of FGR is essential for all those professionals involved in prenatal care, since it can prevent unwanted outcomes both to the mother and to the newborn. On the last years, the knowledge about fetal growth restriction has evolved considerably, with an increasing number of articles being published on this topic and new concepts being described, including new diagnostic guidelines. Even so, there are no recent books fully dedicated to FGR; this theme has only generally been discussed in chapters in larger obstetrics and neonatology books. This current book intends to present and discuss the state of the art on FGR in a clear and didactical way. It will focus on the main topics related to FGR, including its etiology, classification, prediction, diagnosis, and management, as well as on its neurological complications and maternal cardiovascular involvement. Written by experienced and renowned gynecologists from Brazil, Italy and the US, this book will be a comprehensive guide, directed to all gynecologists, radiologists and general practitioners who are involved in prenatal care, as well as to interns, residents, professors and researchers in the field.