



Center For Advanced Fetal Care Newsletter

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Chiaroscuro...

... In art. In medicine. In life. The yin yang of lightness and darkness, hopefulness and hopelessness, goodness and badness **weaves** the fabric of our existence... From the masters of painting who perfected the powerful interplay of **light and dark**, to the defiant few on an endless quest of combatting ignorance with **education**, mortality with **immortality**, our lives are replete with empowering examples. We thus dedicate this issue to "chiaroscuro" (the treatment of light "chiaro" and dark "scuro" in painting), that which is comprehensible though truly not, while focusing on the supremacy of the "chiaro". We bring you highlights from **ISUOG's** recent **25th Congress** with its live streaming of its basic training course in order to ensure equal access to training all over the globe. We review Rush's **Fetal Echocardiography Symposium** aimed at improving the prenatal detection of congenital heart defects. We present to you **FIGO's** newest guidelines on intrapartum fetal monitoring whose ultimate goal is to reduce the burden of perinatal morbidity and mortality. We also summarize recent publications addressing such challenging topics in prenatal diagnosis as idiopathic polyhydramnios, fetal growth restriction and facial clefting, in an attempt to enhance our comprehension and improve detection. We hope that this issue succeeds in fulfilling Lindsey Stirling's aspiration: "To all those wandering lost in the dark, may you be visited by a **spark**."



de la Tour's The Young Singer



delle Notti's Dinner with the Lute Player

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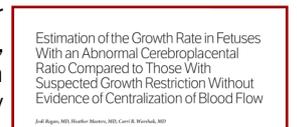
Amniotic Fluid Biochemistry in Isolated Polyhydramnios

Idiopathic polyhydramnios remains one of the enigmas for maternal fetal medicine specialists. In this retrospective series of 464 fetuses with isolated polyhydramnios, recently published in **Prenatal Diagnosis**, Allaf et al analyzed the amniotic fluid for total protein, alpha-fetoprotein and gamma-glutamyl transpeptidase and defined a Bartter index and an esophageal atresia index. Even though all 464 cases of polyhydramnios were considered to be isolated on ultrasound, the outcome on the 464 fetuses revealed that 29.3% had severe fetal diseases where 9.9% had chromosomal anomalies, 6% Bartter syndrome, 4.95% other genetic syndromes, 4.75% disorders of swallowing and 3.7% uro-nephrological abnormalities. Utilizing the amniotic fluid biochemistry, the newly defined indexes had a 66.6% sensitivity and 100% specificity for the detection of esophageal atresia, and 85.7% sensitivity and 84.2% specificity for the detection of Bartter syndrome. The authors thus conclude that even though polyhydramnios may seem to be isolated on ultrasound, there should be a high index of suspicion for underlying disorders in these fetuses. Analyzing the biochemical makeup of the amniotic fluid may prove to be of value.



The Cerebroplacental Ratio in Fetal Growth Restriction

Fetal growth restriction is a major cause of morbidity and mortality. In their retrospective study published in the **Journal of Ultrasound in Medicine**, Regan et al compare the growth rates of 176 fetuses suspected of growth restriction according to their cerebroplacental ratio (ratio of the pulsatility index of the middle cerebral artery to that of the umbilical artery, normal is > 1.08). There seemed to be a strong correlation between the cerebroplacental ratio and the fetal growth rate as well as the birth weight. The authors found that in cases of suspected growth restriction and abnormal umbilical artery Dopplers, fetal growth rates were normal when the cerebroplacental ratio was normal, and they were abnormal with an abnormal cerebroplacental ratio. This becomes invaluable in differentiating pathologically small fetuses from constitutionally small fetuses in order to counsel the families, plan the antepartum and peripartum care, determine the optimal timing of delivery, in order to ensure the best possible neonatal outcome.



Highlights from the 25th World Congress of the International Society of Ultrasound in Obstetrics & Gynecology Held in Montreal October 10 - 14, 2015

If was off to beautiful Montreal that over 1650 delegates and 112 world-renowned speakers, representing 72 countries, gathered to celebrate **ISUOG's 25th Anniversary** in a most memorable congress that spanned 5 autumn days...

The congress commenced with the customary pre-congress workshops. The first was "ISUOG's Basic Training Course" which was presented in English but simultaneously translated into French, Spanish and Portuguese. This comprehensive course, addressing the basics of ultrasound in obstetrics and gynecology, was also live-streamed to various satellites around the world to over 1000 attendees: the uptake and feedback were phenomenal. Details from Lebanon's satellite are shared on page 4 of this newsletter. The second pre-congress course was "Ultrasound in Term and Preterm Labor" which addressed not only the latest in preterm labor prediction and management, but also focused on the role of ultrasound during labor to optimize outcome.

The opening plenary session was notable for a brilliant review of ultrasound's progress over the past 25 years: "25 years in 25 minutes". It was given by Professors Benacerraf, Copel, Eik-Nes and Timmerman. It was nostalgic, enlightening, and highlighted the contributions of ISUOG's founders, many of whom are still as active in the society today as they were 25 years ago.

Throughout the congress, the mornings commenced with various masterclasses and concluded with intense workshops. The masterclasses this year addressed such topics as advanced fetal echocardiography, a practical approach to ventriculomegaly, monitoring intervals and decision for delivery in IUGR, the role of first trimester ultrasound in the era of NIPT, assessing the early fetal brain as well as central hemodynamic changes in IUGR. These, as well as other presentations from the 25th World Congress, will soon be made available on ISUOG's **OnDemand** for ISUOG members.

The countdown has already started for the 26th World Congress, planned for Rome, Italy from September 25 - 28, 2016. Until then, various educational and live-streamed activities are planned and can be reviewed by visiting **ISUOG's Website**.



Plenary Session



Exhibit Hall



Happy 25th ISUOG!

Highlights from the Second Fetal Cardiac Symposium at Rush University Held in Chicago September 10 - 12, 2015. By Karim Diab, MD

The Second Chicago **Fetal Cardiac Symposium** took place in the amazing windy city in the Searle Conference Center at Rush University Medical Center in Chicago on September 10-12. The meeting was expanded from last year to 2 1/2 days with a total of 15 faculty members that came from various institutions. With the persistence of the low national prenatal detection rate of congenital cardiac disease (CHD) despite universal screening during pregnancy, the main goal of the conference was to boost the education in the field in order help improve the status of prenatal diagnosis of CHD. This was done through a series of didactic lectures as well as by focusing on improving the technical skills in scanning the fetal heart through hands-on sessions.

As was the case with the first year of launching the meeting, the symposium continued to be a tremendous success and was nearly sold-out with an audience of 140 registrants who came from 10 different countries. 15 % of the registrants came from overseas, including countries such as Canada, Japan, Brazil, Mexico, China, Columbia, Netherlands, Iran, Qatar and Saudi Arabia. The attendees came from various specialties including Pediatric Cardiology, OB and MFM and others. The conference featured a two-and-a-half day meeting that offered thorough presentations on scanning the fetal heart and diagnosing various fetal CHD malformations. Lectures, given by an internationally acclaimed faculty in Pediatric Cardiology and MFM specialists, emphasized the basics of fetal cardiac scanning coupled with ample video clip illustrations. There was intensive focus on anomalies of the four-chamber and outflow-tracts views. In addition, there was specific focus on the 3-vessel and tracheal view that Dr. Alfred Abuhamad lectured on very extensively. The symposium featured a unique two- hour workshops on both days of the meeting which gave the attendees a unique opportunity to scan pregnant volunteers with both normal hearts and with cardiac pathology. This provided an excellent opportunity for becoming more familiar with the required cardiac views including the 4-chamber, the outflow tracts and the three-vessel views. There was also emphasis on diagnosing and managing fetal rhythm abnormalities as well as genetic evaluation of the fetus with CHD.

Given the recent updates and revisions to the ISUOG practice guidelines on sonographic screening examination of the fetal heart, the need for such annual fetal symposia in different regions is a must, without any doubt, in order to improve the skills of various practitioners in the field and ultimately improve the prenatal detection of CHD!

Dates for next year's symposium will be announced in the near future; for more information, you can reach Dr. Diab at karim_diab@rush.edu or visit the **meeting website**.



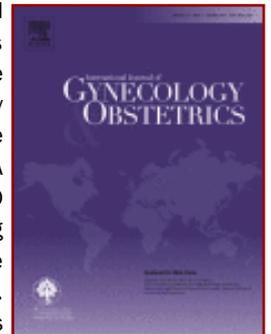
Welcoming the Attendees: Karim Diab, MD



Hands-On Scanning

CFAFC Recommends: FIGO Guidelines on Intrapartum Fetal Monitoring. By Fadi Mirza, MD

Since the 19th century, auscultation of the fetal heart rate became part of routine intrapartum care. Several breakthroughs, however, occurred in the middle of the 20th century that led to the development of different forms of continuous electronic fetal heart rate monitoring and uterine contractions and to the commercialization of the technology known as cardiotocography (CTG). In view of that, in 1985, the international Federation of Gynecology and Obstetrics (FIGO) convened an expert consensus meeting in Switzerland to produce the "Guidelines for the use of Fetal Monitoring." These guidelines were an important landmark in the history of fetal heart rate monitoring. A quarter of a century later, specifically in 2013, the Safe Motherhood and Newborn Health Committee of the FIGO was charged with the development of new consensus guidelines. The objectives were to update the existing guidelines, expand their scope to include all currently available methods of intrapartum fetal monitoring, and to use language that is accessible to all healthcare professionals, independently of their previous expertise in the subject. The ultimate goal was to contribute to the improvement of intrapartum fetal monitoring throughout the world, thus reducing the burden of perinatal mortality and long-term sequelae, while at the same time avoiding unnecessary obstetric intervention. For that purpose, the committee convened an international panel of experts from all around the world, including Lebanon. After two years of deliberations, the new consensus guidelines were announced at the FIGO meeting held in Canada in October 2015. The new guidelines were featured in five papers that were published in the *International Journal of Gynecology and Obstetrics*, October issue. The FIGO consensus guidelines on intrapartum fetal monitoring can also be found on the [FIGO Website](#).



THIS AND THAT

Upcoming FMF Advances Course



The **Fetal Medicine Foundation's Advances Course** will be taking place on December 6 and 7 in London. As is customary, this intense, heavily attended course promises the latest in fetal medicine, presented by the leaders in the field and usually has a "standing" section for its attendees! Further information on registration, accommodations as well as the preliminary program can be accessed at the [FMF Website](#).

Upcoming SMFM



The annual **Pregnancy Meeting** is coming to Atlanta, GA on February 1-6, 2016. The first 2-3 days of the meeting are usually dedicated to comprehensive pre-congress courses addressing all topics pertaining to maternal and fetal health. This year, and for the second year in a row, **ISUOG** and **SMFM** have teamed up for a pre-congress ultrasound course and it should be dedicated to "**Advances in Fetal Echocardiography**". The last 3 days of the congress are usually filled with cutting-edge research. Please check the [SMFM Website](#) for registration and program information.

AIUM Presidential Webinar Series



AIUM's online resources are constantly being updated with invaluable educational tools available for all probe-handlers. AIUM President, Professor Benacerraf, has recently coined the "AIUM Presidential Webinar Series" where monthly webinars are planned based on topics she selects. The **webinars** (with online CME) are available to all AIUM members. Recent webinars address the first trimester anomaly scan and evaluating the patient with pelvic pain. Visit the [AIUM Website](#) for more information.

ISUOG Trainee Membership



In its ongoing mission to "improve women's healthcare services through the provision and broadest dissemination of the highest quality education and research information around ultrasound in obstetrics & gynecology", **ISUOG** has graciously made its 2 year free **trainee membership** available to all trainees in Lebanon. This has now become available through **LSOG** and **SANA Medical NGO**. Thank you ISUOG!

CFAFC News



CFAFC's Reem S. Abu-Rustum has been appointed as a project team member of **ISUOG's Basic Training Taskforce**. She participated in the Ob/Gyn Resident Ultrasound Course at the **American University of Beirut** by giving the new basic "Introduction to Ultrasound" lecture. In addition, a review of her "**Practical Guide to 3D Ultrasound**" appeared in the October issue of **Neonatology Today**.

Hot-Off-The-Press

ULTRASOUND in Obstetrics & Gynecology

Original Paper

Maxillary gap at 11–13 weeks' gestation: marker of cleft lip and palate

Chaoui R.^{1,*}, Orosz G.², Heling K.S.¹, Sarut-Lopez A.¹ and Nicolaidis K.H.²

The midsagittal view has proven to be one of the most critical views to obtain when assessing the first trimester fetus at 11-13 weeks. This view not only enables the evaluation of the fetal nuchal translucency, nasal bone, and intracerebral translucency, but now it may also be used for the early evaluation of the fetal face for clefting.



Maxillary Gap Absent at CFAFC

In their new study just published online at **Ultrasound in Obstetrics & Gynecology**, Chaoui et al report on the maxillary gap, a new first trimester marker for the detection of cleft lip and palate at the time of nuchal translucency assessment.



Maxillary Gap Present at CFAFC

In this retrospective study, stored images of the midsagittal fetal face from 86 normal fetuses and 86 fetuses with cleft lip and palate (CLP), were reviewed. In the group with CLP, 43% of cases were isolated CLP and the remaining 57% had other fetal defects present. The detection rate of CLP was more likely to occur in the first trimester in fetuses that had other defects versus those with an isolated CLP (93.9% versus 24.3%). The maxillary gap was observed in 96% of fetuses with CLP with additional defects, and in 65% of fetuses with isolated CLP. In the normal fetuses, 7% were noted to have a maxillary gap. However, assessing fetuses for a maxillary gap of > 1.5 mm, it was noted that none of the normal fetuses had a maxillary gap > 1.5 mm, whereas it was present in 69% of fetuses with a CLP with additional defects, and in 35% of fetuses with isolated CLP.

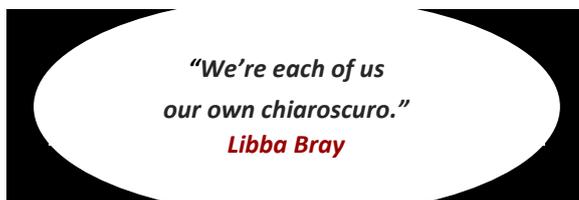
The authors conclude that the maxillary gap is a feasible marker to obtain at 11-13 weeks, and it may enhance the early detection of CLP, particularly in fetuses with isolated CLP.



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CFAFC expresses its sincerest appreciation to Drs. Imad Aboujaoude, Karim Diab, Fadi Mirza and to ISUOG Secretariat for their contributions to this issue.



For any interesting case reports, comments, suggestions or announcements to be included in our newsletter, please send an e-mail to rar@cfafc.org.

"Saturday Night Live" with ISUOG in Lebanon

It was a memorable "Saturday Night Live" With **ISUOG** as **SANA Medical NGO** and **Aboujaoude Hospital** live streamed ISUOG's Basic Training Course directly from Montreal on October 10, 2015.

It was an unforgettable Saturday night, as 38 delegates gathered at the Aboujaoude Auditorium to commemorate ISUOG's 25th Anniversary. For the occasion, and for the first time ever, ISUOG live-streamed its basic training course to various satellites across the globe, with over 1000 total delegates attending in cyberspace, and one of the satellites was Lebanon's SANA/Aboujaoude Satellite.

With the 7 hour time difference, it was uncertain as to how many attendees would participate and it was such an encouraging and pleasant surprise to see the 38 delegates, representing physicians and residents (both ob/gyn and radiology), who stayed glued to their seats well up until 10:30pm, Lebanon time, despite our internet challenges...

The mood was festive here in Lebanon with balloons and ISUOG banners around the auditorium, and the celebratory ISUOG Logo worn as pins by the delegates. The afternoon started with registration and coffee, then Imad Aboujaoude, MD welcomed all the attendees. Subsequently, ISUOG Ambassador and SANA's Reem S. Abu-Rustum, MD, introduced ISUOG, its mission, outreach and programs, and presented SANA Medical NGO's goals and accomplishments.

The pre-test was then taken by the attendees as the connection was established directly with Montreal. And though this was the 3rd live-streaming activity, it was truly surreal to be at the World Congress all the way from Lebanon! The program was most concise, yet incredibly comprehensive, as the experts condensed years of practice and experience into the most practical tips and pearls. In addition, attendees were able to post their questions directly to the faculty in Montreal.

The feedback was most encouraging and the SANA/Aboujaoude team promised to continue these educational activities, enabled by ISUOG and its most committed, dedicated team with its futuristic vision. They have truly impacted the global practice of ultrasound as we know it, and have set the stage for a most promising future in ultrasound education...



Delegates in Lebanon



Imad Aboujaoude, MD



Coffee Break



Congress Bags

Upcoming Congresses

| COURSE TITLE | DATES | LOCATION | WEBSITE ADDRESS |
|--|-------------------|--------------------|--|
| Obstetric Ultrasound: From the 1st to the 3rd Trimester | Nov 14 - 15, 2015 | Dubai, UAE | www.isuog.org/Events/Courses/Default.htm |
| 3rd Annual Advances in Prenatal Molecular Diagnostics | Nov 16 - 18, 2015 | Boston, MA | www.healthtech.com/prenatal-diagnostics |
| 19th International Annual Congress of LSOG | Nov 19 - 21, 2015 | Beirut, Lebanon | www.lisog.org.lb/ |
| 18th Mid-Atlantic Symposium in Ob/Gyn Ultrasound | Nov 20 - 21, 2015 | Virginia Beach, VA | www.evms.edu/media/evms_public/departments/cm_e/conference_documents/Brochure_Final_Ultrasound_PRESS.pdf |
| 24th Annual Ob/Gyn Ultrasound Update for Clinical Practice | Dec 3 - 6, 2015 | Lago Mar, FL | http://cmebyplaza.com/Registrants/GoHo15/About.aspx |
| FMF Advances in Fetal Medicine Course | Dec 5 - 6, 2015 | London, UK | https://fetalmedicine.org/fmf-advances-course |
| 12th MEDUOG Congress | Dec 11 - 13, 2015 | Athens, Greece | www.iandonald-meduog2015.mdcongress.gr/index_77.asp? |
| Maternal-Fetal Imaging: Advances in Ob/Gyn Ultrasound | Jan 29 - 31, 2016 | San Antonio, TX | www.worldclasscme.com/conferences/maternal-fetal-imaging-advances-ob-gyn-ultrasound/ |
| 36th Annual Pregnancy Meeting | Feb 1 - 6, 2016 | Atlanta, GA | www.smfm.org/the-pregnancy-meeting |
| 39th Annual Advanced Ultrasound Seminar: Ob/Gyn | Feb 18 - 20, 2016 | Orlando, FL | www.aium.org/cme/events/sem2016/sem2016.aspx |