



Center For Advanced Fetal Care Newsletter

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Despacito - Slowly...

...With patience, passion and perseverance, we ensure progress, success and sustenance enabling us to infuse **marble with emotion**, bring **wood to life** and ignite a **canvas with fervor...** Such has always been the case, in art as in medicine, where diligence is needed and where time is of the essence. Despacito, the sky is the limit as to what may be accomplished. Bringing us to today, where we are witnessing the fruits of the labor carried out over decades: we are finally able to **cure blindness**, detect cancer from human **breath** and we are able to utilize **artificial intelligence** to build our musical armamentarium. We thus dedicate this issue to "despacito" and all the revolutionary strides secured by patience and perseverance. We review for you Abuhamad and Chaoui's latest brainchild, the result of a flawless conception: their text on the first trimester anomaly scan. We present to you the latest research, 25+ years after the introduction of the NT, on the value of the first trimester scan in the detection of structural anomalies, where the authors call for standardization of the approach and stress the need for international protocols. We present research on the timely impact of cfDNA on the management of pregnancies complicated by aneuploidy. We review ISUOG's 27th World Congress, just held in Vienna, the result of dedicated meticulous labor from thousands of individuals whose after effects shall resonate for years to come. We introduce you to WATOG, the visionary association dedicated to Ob/Gyn trainees around the globe, the future of our specialty, in addition to our usual quarterly features. We hope that with this issue, your deeply-buried memories and emotions resurface, taking you back to those most impactful moments in your lives, on a personal and a professional level, reminding you how slowly, with patience, passion and perseverance, you were able to fulfill your hearts' desires...



Cupid & Psyche by T. Friedl c1890

First Trimester Screening for Fetal Structural Anomalies

Karim et al have recently published a systemic review and meta-analysis in **UOG** which included roughly 30 studies and over 100000 fetuses. The primary aim of the study was to determine the sensitivity and specificity of the first trimester scan, prior to 14 weeks, in the early detection of structural fetal abnormalities, and to assess what factors impact its performance. Of note is that outcome was available on all fetuses postnatally or by a post-mortem examination. The study stratified the results based on the detection of "major" anomalies versus the detection of "all" anomalies, and they compared the sensitivity in low- versus high-risk populations. The study revealed that the first trimester scan has an overall detection rate of all anomalies of 32.35% in the low-risk population versus 61.18% in the high risk-population. The most impactful factor affecting the sensitivity of the first trimester scan was the utilization of a standardized protocol for the fetal anatomical survey (P < 0.0001). The authors conclude that the first trimester scan is a powerful tool in the early detection of fetal structural anomalies further enhanced by the employment of a standardized protocol. They thus call for the development and implementation of international protocols that would standardize the approach and stipulate what anatomical planes should be included in order to maximize the potential of the most powerful fetal anatomical scan at 11-14 weeks.



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The Effect of cfDNA on Timing of Abortion for Aneuploidy

With the ever increasing utilization of cfDNA in the screening for fetal aneuploidy, Lassey et al addressed a crucial question in their recent publication in **Prenatal Diagnosis**: has cfDNA impacted the gestational age at which termination of pregnancy (TOP) may be carried out in case of aneuploidy? This was a retrospective cohort study on 93 women presenting for TOP due to the presence of fetal aneuploidy. Of those patients, 41 were from the pre-cfDNA era and 52 were from the post. There was a statistically significant difference in the gestational age at which invasive testing was carried out between the 2 time frames: the gestational age was 15.7 weeks pre- versus 13.0 post- the introduction of cfDNA (P < 0.01). In addition, there was a statistically significant difference in the gestational age at which TOP was carried out between the 2 time frames: the gestational age was 17.2 weeks pre- versus 14.2 post- the introduction of cfDNA (P < 0.01). The authors conclude that the availability of cfDNA has resulted in a 3 week decrease in the median gestational age at which women are diagnosed with and elect to undergo TOP for aneuploidy. In addition, they are 4x less likely to undergo TOP beyond 18 weeks.



Highlights from ISUOG “27th World Congress on Ultrasound in Obstetrics and Gynecology” Held September 15 - 19, 2017 in Vienna, Austria

It was a feast for the senses at every level: visual, auditory, olfactory and tactile as over 2113 delegates from over 100 countries gathered in majestic Vienna for ISUOG’s **27th World Congress on Ultrasound in Obstetrics and Gynecology**. From the minute one lands at the Vienna airport, they are greeted by Klimt’s masterpieces adorning the walls. And as the journey continues, the intricate architecture, the glorious symphonies, the coffee aroma and the mesmerizing Danube prove to be an unforgettable backdrop to an unforgettable congress that captures the senses and enralls the brain...

This year the congress commenced on Friday with 3 pre-congresses: Essentials in Fetal MRI, Modern Obstetric Management (a joint course with ISPD) and Fetal Anatomy: Normal of Abnormal, the Basic Training Approach. All were well attended, outstanding courses given by experts in the field.

It was quite eventful for **ISUOG Basic Training (BT)**. The BT pre-congress was live-streamed around the globe and received raving reviews from attendees who praised the clarity and practicality of the approach as conceived by the course co-chairs: Drs. Trish Chudleigh and Titia Cohen-Overbeek. It is available, open access, at the **ISUOG Website**. Outstanding international faculty, which included A. Abuhamad, G. Chalouhi, T. Chudleigh, T. Cohen-Overbeek, A. Johnson and S. Seshadri covered fetal anatomy, head to toe. In addition, **“The Principles of Ultrasound”**, ISUOG BT’s new film produced in-cooperation with **Medical Aid Films**, was launched and viewed during the BT course and throughout the congress, as was BT’s new bi-annual newsletter **“Beaming”**. The full day course was followed by a half day simulation workshop on Saturday where trainees had the opportunity to work on 2 different types of simulators, one-on-one with an instructor, to obtain the key fetal anatomic and biometric planes that were covered in the theoretical course, using the BT approach.

On Saturday, the congress opened with keynote lectures and top abstracts in the morning, and the annual ISUOG awards were presented in the afternoon. This year, the Ian Donald Gold Medal was awarded to G. DeVore, MD.

The congress ensued with a multitude of simultaneous masterclasses, live scan demonstrations, interactive hubs and **abstract** presentations, making it quite a challenge to decide what to attend and what to miss. Thankfully, the entire congress was recorded and will be available soon to all ISUOG members via **OnDemand**. There were several outstanding workshops and hubs involving the **CFEF, FIGO** as well as **WATOG**. These opened wide communication channels across the various societies strengthening their ties and impacting their future reach.

Unique this year was **ISUOG Outreach’s** “Train the Trainer” Workshop. This workshop was co-chaired by A. Johnson, ISUOG Outreach Chair, and G. Baez, ISUOG International Development Coordinator. It was well received with much positive feedback from current and would-be outreach trainers. The workshop covered all aspects of outreach: from setting up the program, to the application process, to the characteristics of the outreach trainer, to the cultural considerations one must keep in mind, to the delivery of the theoretical curriculum and the hands-on training, to the assessment and finally, maintaining contact with the trainees in between missions.

In summary, the congress afforded the attendees the unique opportunity to meet the luminaries, learn from their experience, get exposed to the latest research and what technology has to offer, and provided ample networking opportunities. It certainly is unparalleled! Visit the **ISUOG Website** for details on the 2018 World Congress in Singapore!



The Mesmerizing Danube



Professor Bilardo Honored by ISUOG



ISUOG BT Simulation Workshop

Highlights from the Seventh Fetal Echocardiography Symposium at UCLA Held in Los Angeles, California October 21, 2017. By Mark Sklansky, MD

The **Seventh Annual Fetal Echocardiography Symposium** at UCLA was a tremendous success, continuing UCLA’s annual tradition of providing a full day of focused, real-life, clinically oriented instruction for all clinicians involved with fetal cardiac imaging. State-of-the-art presentations were presented by world-class experts in obstetric sonography, maternal-fetal medicine and pediatric/fetal cardiology. As has been the case in previous years, the symposium sold out, with over 215 registrants (sonographers and physicians—obstetricians, maternal-fetal medicine specialists, and pediatric cardiologists) from across the country. The symposium retained its focus on clinically oriented tips and pearls for both beginning and advanced sonographers and physicians. In addition, as has become a trademark of this course, the symposium featured special patient testimonials before the lunch break. Actual patients and their families shared their emotional and captivating stories with the registrants, demonstrating first-hand the tremendous impact of prenatal detection of congenital heart disease, and the importance of the way a new diagnosis of congenital heart disease is first presented to the patient and her family. Registrants left the meeting with new approaches to the prenatal detection and evaluation of congenital heart disease to bring back to their practices, meaningful insights into the importance of raising the quality of fetal cardiac imaging, and a commitment from all the speakers to offer continuing consultation for registrants throughout the year.

The symposium began with Mishella Perez, BS, RDMS, RDCS, delivering an outstanding presentation on the sonographer’s basic approach to fetal cardiac screening. Dr. Gregory DeVore then reviewed both basic and advanced pulsed and spectral Doppler techniques. Dr. Mark Sklansky discussed his thoughts regarding what clinicians and guidelines are doing wrong in terms of actual fetal cardiac imaging—offering answers and solutions to why most cases of major forms of congenital heart disease continue to be missed prenatally. Session two reviewed traditional and more advanced elements of the three-vessel views, along with traditional and novel (but easy to apply) approaches to the evaluation of fetal arrhythmias. The session ended with Dr. Sklansky demonstrating how to optimize fetal cardiac imaging while performing actual, live scans on multiple models at various gestational ages and with variable fetal positions. Tricks of the trade for optimizing image quality and angle of acquisition were demonstrated, and common artifacts were reviewed and minimized. Dr. Karim Diab reviewed atrial and ventricular septal defects, including atrioventricular canal. Dr. Gary Satou discussed tricuspid valve disease, including tricuspid regurgitation, tricuspid dysplasia, and Ebstein’s anomaly of the tricuspid valve. Dr. DeVore then discussed the latest approaches to evaluating cardiac size, shape and function, incorporating state-of-the-art speckle tracking technology. Session four focused strictly on outflow tract pathology, including aortic/pulmonary valve stenosis, pulmonary atresia with intact ventricular septum, tetralogy of Fallot, double outlet right ventricle, transposition of the great arteries, and truncus arteriosus. The special views required for detection of transposition of the great arteries, for example, were reviewed in detail.

The symposium kept registration fees well below the national average through the generous support of the Hopeful Hearts Foundation, GE Healthcare, Samsung, Masimo, Natera, and the Shane McCusker Foundation. Reviews of this year’s symposium have been glowing. Based on feedback from attendees, plans are already underway for the 8th Annual Fetal Echocardiography Symposium at UCLA next October; exact date and further details to be announced soon. For more information, please contact Dr. Sklansky at mksklansky@mednet.ucla.edu.



Karim Diab, MD



Drs. Sklansky, Satou, Soffici, DeVore & Robilio

CFAFC Recommends Abuhamad & Chaoui's First Trimester Ultrasound Diagnosis of Fetal Abnormalities

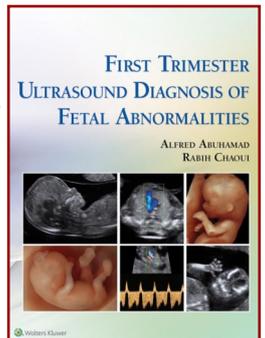
Artistic. Brilliant. Complete. This is exactly how one would describe the latest masterpiece from Abuhamad and Chaoui: **"First Trimester Ultrasound Diagnosis of Fetal Abnormalities"** just released as a textbook and eBook. The text is beautifully produced in vibrant colors, large-sized images, ample diagrams and summary tables making it a stunning visual escapade one cannot get enough of!

The text is divided into two sections: the first is made up of 7 chapters, addressing all the general aspects of the first trimester scan from guidelines, to physical principles and bioeffects, to the technical aspects of the examination. In addition, the authors present biometry and pregnancy dating, the detailed first trimester scan, screening for aneuploidy as well as the approach to multiple pregnancies.

The second section is made up of 8 chapters where the authors tackle every imaginable diagnosable fetal abnormality by system: the fetal central nervous system, face and neck, chest, heart and great vessels, gastrointestinal tract, urogenital system, skeletal system in addition to a chapter on evaluating the placenta and cord.

One of the most unique aspects of this text is the authors' approach to the diagnosis of 17 key genetic and syndromic conditions which may potentially be recognized as early as the first trimester in skilled hands. These challenging conditions would have otherwise been missed by cfDNA. The authors address each of these conditions, provide sonographic pearls to their recognition in the first trimester, and provide a priceless summary table as a guide to where they are covered in the text: table 6.6.

In all honesty, I could not put the text down, and read it all on a single most memorable Sunday. It was akin to how one would read a mystery thriller: eager to turn the page, anxious for more images, inspired by the workings of the mind and how this was all put together. I strongly recommend this text: it shall undoubtedly become the gold standard and shall set the stage for the much needed global guidelines, rightfully acknowledging the role of the first trimester scan as the pillar in obstetrical care that it is...



THIS AND THAT

Upcoming FMF Advances Course



The annual FMF Advances Course is planned for Dec 2-3, 2017 in London. As has always been the case, this course is usually a sell-out where the most up-to-date research in fetal medicine gets covered by leading experts. This year promises no less with Professors Nicolaides, Chiu, Jani, Kagan, Paladini and Ville presenting a comprehensive program with dedicated sessions to the fetal CNS and heart. Details at the [FMF Website](#).

Upcoming SMFM Pregnancy Meeting



Registration is now open for the SMFM's 38th Annual Pregnancy Meeting which will be held in Dallas Jan 29 - Feb 3, 2018. In addition to cutting-edge research, there will be 9 pre-congress workshops, various forums and roundtable discussions addressing various aspects of maternal and fetal care: opiate addiction, critical care, Gyn Ultrasound for the MFM, obstetric complications among others. For more information, visit the [SMFM Website](#).

ISUOG International Symposium



ISUOG's International Symposium (IS) will be held in glorious Athens April 20-22, 2018. The scientific committee has an outstanding course planned with 2 pre-congress courses: the first is a BT course targeting trainees, and the second is a 3D/4D course. In addition, the ISUOG Fetal Anomalies Course will be presented and will be live-streamed. Abstract submission is now open until February 28, 2018. For more details, visit the [ISUOG IS Website](#).

Upcoming Egyptian FMF Conference



The 4th Annual International Conference of the EFMF will be held in Cairo February 8 and 9, 2018. This year's conference will include an Advanced US, Fetal Echo and Doppler workshops. It will feature such international experts as J. Hyett, P. Jeanty, T. Johnson and D. Paladini. The conference is ISUOG approved and includes ISUOG membership. Details at ireneissa@yahoo.com.

Upcoming OBFEGYN Conference



The 8th OBFEGYN Conference will be held, once again, in Dubai March 16 and 17, 2018. The conference is accredited by both the FMF and ISUOG with the participation of international and regional speakers. Abstract submission is now open. Stay tuned to the [OBFEGYN Website](#) to find out who this year's distinguished international as well as regional faculty shall be!

CFAFC News



CFAFC's Reem S. Abu-Rustum was invited to the [ISUOG World Congress](#). She participated in [Basic Training's](#) Simulation Workshop, the [Outreach](#) "Train the Trainer" Workshop, presented [SANA Medical NGO's](#) experience in the ISUOG/FIGO Hub and presented [4 abstracts](#). She also had the honor of returning to Sudan as an ISUOG Outreach Volunteer/Trainer. Her reflections on this transformational experience are available at the [Outreach BLOG](#).

Hot-Off-The-Press: First Trimester 3-Vessel Trachea View

DOI: 10.1002/pd.5067

PRENATAL DIAGNOSIS

ORIGINAL ARTICLE

The three-vessel and trachea view (3VTV) in the first trimester of pregnancy: an additional tool in screening for congenital heart defects (CHD) in an unselected population

Valentina De Robertis¹, Georgios Remboskas¹, Tiziana Fanelli¹, Grazia Volpe², Brunella Muto¹ and Paolo Volpe^{1*}

As the role of the 3-vessel trachea view (3VTV) gains more recognition as a most critical view to obtain in screening for congenital heart defects (CHD), researchers are evaluating its feasibility and importance at the time of the 11-14 week scan. This is covered extensively in the recent textbook of Abuhamad and Chaoui presented above **"First Trimester Ultrasound Diagnosis of Fetal Abnormalities"**, and simultaneously in



The 3-VTV

De Robertis et al's recent publication in [Prenatal Diagnosis](#) on its role in an unselected population where the number of vessels, their size and spatial relationships raise suspicion for underlying CHD.

In their prospective study, De Robertis et al enrolled 6350 pregnancies undergoing a scan at 11-14 weeks by expert sonographers, and 5343 were included in the analysis (1007 had no outcome). The exams were carried out transabdominally and when indicated, in 7% of cases, they were carried out transvaginally.

It was feasible to visualize the 3VTV on 94% of cases, and in 96% of cases, it was facilitated by the use of color Doppler or HD flow. The incidence of CHD in this population was 1% (a total of 57 cases). Termination of pregnancy was carried out on 24 fetuses leaving a total of 33 fetuses with CHD whose mothers continued on with the pregnancy. Of the cases with CHD, an abnormal 3VTV was noted in 21/33 cases for a sensitivity of 64%. In addition, there were 5/5286 (0.09%) false positive cases using the 3VTV. Using both the 4-chamber view as well as the 3-VTV resulted in a 75.8% detection rate of CHD at 11-14 weeks.

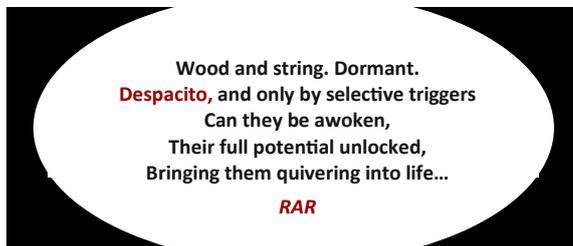
The authors call for larger prospective studies to evaluate the diagnostic accuracy of the 3VTV at 11-14 weeks. Nonetheless, they conclude that the 3-VTV is a feasible view to obtain at 11-14 weeks and using vessel number, size as well as spatial relationships enhances the ability to diagnosis CHD as early as the first trimester.



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CFAFC expresses its sincerest appreciation to all of our contributors with a special thank you to Professor Abuhamad and the 2Cellos for the inspiration. For any interesting cases, comments, suggestions or announcements, send an e-mail to rar@cfafc.org.



Wood and string. Dormant.
Despacito, and only by selective triggers
Can they be awoken,
Their full potential unlocked,
Bringing them quivering into life...

RAR

Kindly note that all colored text contains embedded "**clickable**" links.

Upcoming Congresses

COURSE TITLE	DATES	LOCATION	WEBSITE ADDRESS
26th Annual OB-GYN Ultrasound Update for Clinical Practice	Nov 30 - Dec 3, 2017	Lago Mar, FL	http://gohofoundation.org/events/cme-course/
FMF's Advances in Fetal Medicine	Dec 2 - 3, 2017	London, UK	https://fetalmedicine.org/fmf-advances-course
SMFM's 38th Annual Pregnancy Meeting	Jan 29 - Feb 3, 2018	Dallas, TX	https://www.smfm.org/meetings/2-37th-annual-pregnancy-meeting
4th Annual International Conference of the Egyptian Fetal Medicine Foundation	Feb 8 - 9, 2018	Cairo, Egypt	http://www.efmf-eg.org
41st Annual Advanced Ultrasound Seminar in Ob/Gyn	Feb 14 - 17, 2018	Orlando, FL	http://www.aium.org/cme/events/sem2017/sem2017.aspx
26th Congress of the European Board and College of Obstetrics and Gynecology	Mar 8 - 10, 2018	Paris, France	http://www.ebcog2018.org
OBFEQYN	Mar 16 - 17, 2018	Dubai, UAE	http://obfegyn.org/introduction.php
Annual Convention of the American Institute of Ultrasound in Medicine	Mar 24 - 28, 2018	New York, NY	https://www.eventscribe.com/2018/AIUM/
FIGO Regional Congress of Middle East and Africa	Apr 11 - 13, 2018	Dubai, UAE	http://figodubai2018.com
ISUOG International Symposium	Apr 20 - 22, 2018	Athens, Greece	http://www.isuogsymposium2018.com

Introducing WATOG: World Association of Trainees in Obstetrics and Gynecology. By WATOG

Founded in 2012 under the auspices of **FIGO** (the Federation International of Gynaecologists and Obstetricians), **WATOG** (the World Association of Trainees in Obstetrics & Gynecology) is the first non-profit organization representing young Obstetricians and Gynecologists (OB/GYN) across the world. As of 2017, the network includes 85 countries and the management is assured by delegates representing six geographical regions: Asia, Latin America, North America, Africa and Australia-Oceania and **ENTOG** (the European Network of Trainees). The association aims to contribute to the improvement OB/GYN training worldwide. In cooperation with national and large-scale senior societies, WATOG wishes to facilitate local and international networking and aims at experience-sharing by organizing events and disseminating free online educational content dedicated to young OB/GYNs around the world. Besides its long-standing relation with the FIGO, in the recent year WATOG has established close collaboration with **ISUOG** (International Society of Ultrasound in Obstetrics and Gynecology) and the Fetal Medicine Foundation. In 2017, WATOG conducted an international survey on OB/GYN ultrasound training. The results were presented at the ISUOG World Congress and will be published shortly. The next survey on OB/GYN training across the world is planned to be launched in early 2018 and is to be presented during the upcoming FIGO World Congress in 2018. For more information, please visit the **WATOG Website**. It would be greatly appreciated if you can **take WATOG's survey**.



WATOG at FIGO 2015



With FIGO's Prof. Rushwan



With ISUOG Board 2016