Years in the Making

Celebrating a decade of

visuog

A Letter from the **VISUOG Task Force Chair**

Happy Birthday, VISUOG!

In this digital magazine we celebrate VISUOG's 10th year since its initial launch at the 2013 World Congress in Sydney.

With two chapters devoted to obstetric imaging uploaded to the site at the original launch, VISUOG has blossomed to include over 270 chapters of educational materials covering all aspects of Ob/Gyn imaging, encompassing up-to-date background information, accompanying quality images and important patient information materials.

VISUOG was the brainchild of Gianluigi Pilu who, with others, envisioned a central repository of accessible imaging education materials that would inform and educate imaging professionals and enhance the patient experience. It is created by ISUOG members for our fraternity with global representation of authors, reviewers and section editors from five continents.

Recently, new sections on imaging of multiple pregnancy, infertility, pelvic floor imaging, intrapartum ultrasound and ultrasound-guided procedures have been added. From novice to expert imager, VISUOG offers comprehensive imaging education to improve clinical care and helps "close the knowledge gap" between healthcare providers and patients' health to facilitate a shared understanding of Ob/Gyn conditions affecting patients' health or that of their offspring.

> "VISUOG has blossomed to include over 270 chapters"

We are proud of the commitment of the many individuals globally who have contributed to this initiative to bring this educational resource to our ISUOG members. But education is a lifelong endeavor and never complete, and VISUOG, too, is evolving. Stay tuned for new developments, including our "Case of the Month" feature to be launched at the end of 2023, which will provide new opportunities for member engagement and for you to bring your imaging knowledge and experience to our members and provide education for all!

Please enjoy this anniversary feature highlighting several excellent examples of VISUOG content, illustrating VISUOG's educational value.

Dr Karen Fung-Kee-Fung
VISUOG Task Force Chair

Interview with **Prof. Gianluigi Pilu**

Although it takes a village to raise a child, VISUOG at its inception was very much the brainchild of Prof. Gianluigi Pilu.

We talk to Prof. Pilu about how ISUOG's visual encyclopedia for clinicians in obstetrics and gynecology grew from a mere two chapters to the 275 it has today, and his vision for its continued impact on the medical community over the coming years.

Congratulations on reaching the 10-year milestone for VISUOG! Can you take us back to the advent of the project and share the inspiration behind creating this resource?

In a way, VISUOG was the result of a spontaneous generation. From the very beginning, the core of ISUOG activities were the World Congress and the White Journal. But there was a growing interest in teaching, and around 2000 we started organizing courses on fetal anomalies that were very successful. Of course, we could reach only a limited number of sonologists even though there was a large demand from all over the world.

Ultrasound is a dynamic tool, particularly when dealing with fetal anomalies, so the possibility to display videos via the ISUOG website was a major advantage.

Over the past decade, how has VISUOG evolved to meet the changing needs and advancements in medical education?

VISUOG evolved from the courses on prenatal diagnosis of fetal anomalies that we were organizing each year in London. When we launched the ISUOG website there was much brainstorming with other sonologists and web designers, and we eventually came up with a template that has changed over the years. However, the philosophy behind it has remained the same:

A visual tool, with minimal text, but plenty of references for those interested in focusing on a specific topic.

As a resource with expert contributors from all over the world, how has collaboration played a pivotal role in the creation of VISUOG?

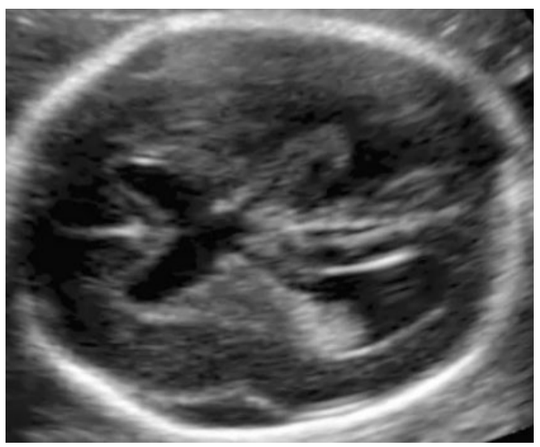
In the beginning, VISUOG was entirely the work of a rather small group of dedicated teachers. Albeit living in different parts of the world, we were in close collaboration, exchanging images and concepts, and we had the enormous archive of the White Journal. Looking back at our work, I find it difficult to sort out who did what as the material we produced was very homogeneous. In time, other people joined in, but by then the model had become a standard.

Tell us about some of your proudest moments as the creator of VISUOG

One important aspect of VISUOG was that people were free to use the material; the concept since the beginning has been 'teach the teachers' and provide them with good material that they could use as they liked. It is not rare to see people presenting slides at meetings with the indication 'copyright by …'.

Having provided some even minimal contribution to the development of the field is very rewarding to me. Ingmar Bergman has said that he would like to be considered as one of the many anonymous artisans that throughout centuries worked to construct a cathedral that withstands time. In a way VISUOG is a magnificent building now, and I am very proud that I have made some contribution.

"It is not rare to see people presenting slides at meetings"



Looking to the next ten years, what do you envisage for VISUOG in the future, and how do you foresee its continued impact on the medical community?

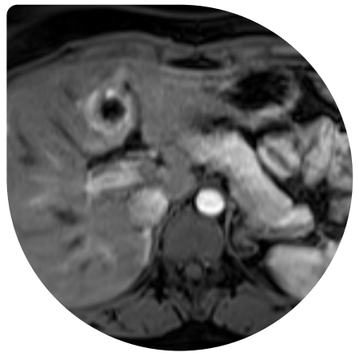
I think VISUOG has now been established internationally as a major source of continuing medical education. I sincerely hope that those who are in charge of it now will continue to improve the material and design. I have no doubt that there is a major role for artificial intelligence in sonology, particularly in screening and diagnosing anomalies. It is not difficult to envision an opportunity for VISUOG in this.

Prof. Gianluigi Pilu, ISUOG Past President (2008-2010), ISUOG Fellowship (2012), winner of the 2007 Ian Donald Gold Medal and 2014 Stuart Campbell Award for Education is Associate Professor of Obstetrics and Gynecology at the Università di Bologna, Italy. He is a researcher in the fields of Obstetrics and Prenatal Diagnosis.

Ten at Ten:

All the Best from VISUOG

In celebration of 10 years of VISUOG, members of our Task Force and Section Editor teams have compiled their top 10 most impactful chapters and images of all time, representing a decade of research and discovery in obstetric and gynecological imaging.



Abdominal Ectopic Pregnancy ▸

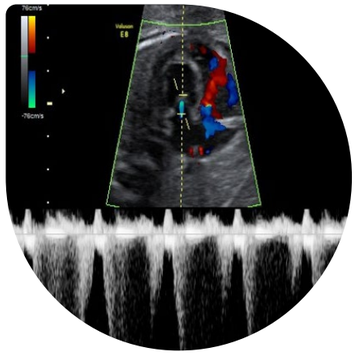
"I would recommend this case of primary hepatic ectopic pregnancy because it is an extremely rare location of ectopic pregnancy."

Dr Nguyen Ha, Early Pregnancy Section Editor

Aortic Stenosis ▸

"The images in this chapter are excellent and the enfolded clip is super helpful to understand the diagnosis and the intrauterine treatment."

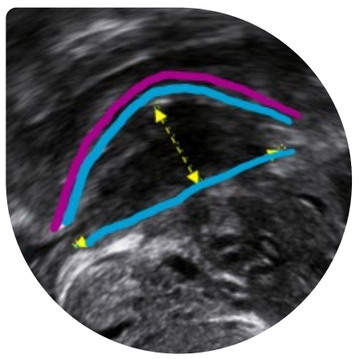
Dr Tiziana Fanelli, VISUOG Task Force member



Fetal Ear Chapters ▸

"This is the most comprehensive and practical work on the fetal ear I have ever found. A collection of images rarely found even in textbooks."

Dr Mauro Schenone, VISUOG Task Force member



Bowel Deep Endometriosis ▸

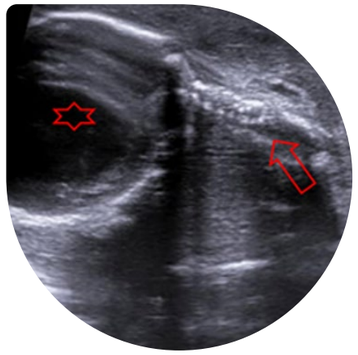
"This chapter stands out because it accurately depicts the real tangible appearance of bowel deep endometriosis. This image also highlights the interface of ultrasound and surgery, which are complementary from a diagnostic standpoint."

Dr Mathew Leonardi, Endometriosis Section Editor

Congenital Megalourethra ▸

"This image is very descriptive, and the case is quite rare. The plane shows the scrotal sac with the median raphe and that's the key for diagnosis to what otherwise would pass as a cord loop. Also, the extent of dilatation of the urethra is marked."

Prof. Rasha Kamel, Normal sonograms Section Editor



Fetus in Fetu ▸

"The chapter showcases unique images such as this one, demonstrating the parasitic fetus within the retroperitoneum of the host fetus, that clinch the diagnosis and offers imaging pointers to guide in its differentiation from other pathologies."

Prof. Katia Bilardo, VISUOG Task Force member

Iniencephaly ▸

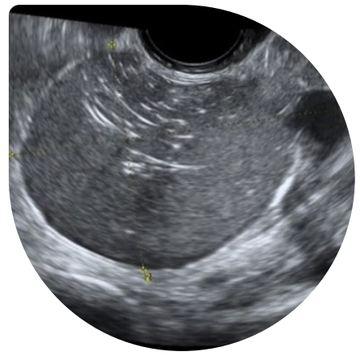
"This chapter highlights the ultrasound features of a rare and complex neural tube defect. Likewise, the chapter provides detailed clinical characteristics of iniencephaly that could guide clinicians and other healthcare professionals in providing high-quality care for fetuses affected by this condition."

Dr Mario Lumbreras-Marquez, Skull Section Editor

Monochorionic Twin Pregnancies ▸

"Here is a three-dimensional image of thoraco-omphalopagus twins at 16 weeks of gestation, joined at the chest and abdomen, sharing a common heart and liver. The prognosis in this situation is poor."

Dr Yinka Oyelese, Multiple pregnancy Section Editor



Ovarian Mature Cystic Teratomas ▸

"This chapter is important as it describes as many as eight different ultrasound patterns of mature teratomas. These images represent the most typical pattern of mature teratomas."

Dr Francesca Moro, Ovary Section Editor

Polycystic Kidney Disease ▸

"It would be of great benefit if antenatal care providers, especially sonographers, are aware and attuned to this condition, in order to appropriately refer the cases to the specialists and ensure that appropriate counseling/genetic testing is offered to the couples."

Dr Nikolaos Antonakopoulos, VISUOG Task Force member

A Beacon of Educational Excellence

From the outset, part of the vision of VISUOG was to serve as a high-quality educational tool for learners in the field of ultrasound in obstetrics and gynecology at all stages of their careers, regardless of their social or economic background.

VISUOG Section Editor for **Gynecology**, Dr Mathew Leonardi, reflects on the impact that the resource has made on the professional development of ISUOG's community members, and how it stays at the forefront as a leading authority in our field.

How would you describe the educational impact of VISUOG on medical professionals and trainees?

VISUOG has had a profound educational impact on medical professionals and trainees in obstetrics and gynecology, sonography, and radiology. Its comprehensive and up-to-date content has become an invaluable resource for continuous learning and skills development. Detailed anatomical visualizations, case studies, and expert commentary have collectively contributed to enhancing clinical decision-making and diagnostic accuracy. Trainees benefit from the foundational approach, the comprehensive disease-specific approach, and with demonstration of real-world case scenarios, helping them bridge the gap between theoretical knowledge and practical application.

How has collaboration among specialists and practitioners as section editors and authors contributed to the strength and credibility of VISUOG's content?

Collaboration with subject matter experts, from my part as the endometriosis section editor, has been pivotal. Their diverse clinical experiences and in-depth expertise have guided the creation of content that reflects the most current diagnostic and procedural trends. The more I am interested in clinical and academic medicine, the more I believe there is not one right answer, so having diverse representation is essential. The rigorous peer-review process overseen by these experts ensures that the educational materials are accurate, evidence-based, and aligned with the latest advancements in the field. This collaborative approach fosters a sense of community and shared knowledge, elevating the overall quality of VISUOG's resources.

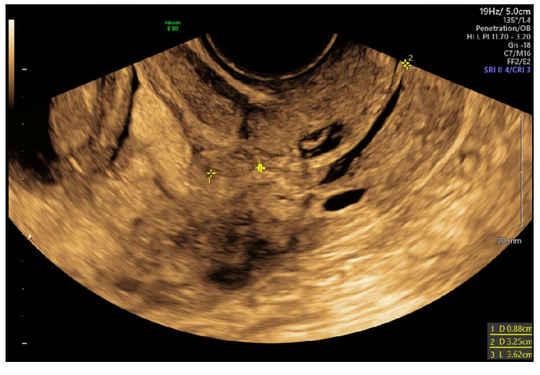
> "I believe there is not one right answer, so having diverse representation is essential."

How has VISUOG's content remained accessible and valuable to learners at various stages of their medical journey?

VISUOG has a carefully curated content structure. The platform offers a tiered approach to learning, starting with foundational content for trainees and progressively advancing to more specialized and complex material for experienced practitioners. Additionally, the availability of multimedia content, such as downloadable images and videos, facilitates learning retention and allows users to tailor their learning experience according to their specific needs.

What impact does VISUOG have as an educational tool to ISUOG community members in lower resource settings?

The accessibility of VISUOG's online resources transcends geographical boundaries, enabling healthcare professionals in regions with limited access to traditional educational materials to gain access to up-to-date information. This makes it particularly impactful for ISUOG community members in lower resource settings. VISUOG's inclusive approach empowers practitioners in these settings to enhance their skills, improve patient care, and contribute to global advancements in obstetric and gynecological ultrasound practices.



Looking ahead, what are the key goals and aspirations for VISUOG in the future?

In the future, VISUOG will continue to push the boundaries of educational excellence. Key goals include expanding the library to encompass more granular understanding of features of various diseases, even rarer conditions, and complex situations. In the world of AI, we will endeavor to provide content that ensures the readership is up-to-date and inspired. We will include more visual content such as images and videos, driven by the fast-paced environment of social media, which could further elevate the immersive learning experience, allowing practitioners to absorb content quickly and easily.

> "VISUOG will continue to push the boundaries of educational excellence."

By consistently integrating the latest technological advancements and fostering collaborations with leading experts, VISUOG envisions itself as a central hub for advancing obstetric and gynecological education, ultimately leading to improved patient outcomes through enhanced diagnostic and procedural precision.

Dr Mathew Leonardi is an advanced gynecologic surgeon and sonologist in the Department of Obstetrics and Gynecology at Hamilton Health Sciences and assistant professor at McMaster University. His special interests are imaging technologies including transvaginal ultrasound, endometriosis, advanced gynecologic surgery, innovation in diagnosis, and research.

Unlocking the Wonders of Fetal Ears

It has been lauded as one of the most significant contributions to VISUOG and, comprising eight chapters, the Fetal Ear section – the life's work of Calgary-based Radiologist, Dr Ian Suchet – is one of the most comprehensive.

We talk to Dr Suchet about what drew him to this area of fetal anatomy, his research, and his thoughts on the future role of AI in fetal imaging.

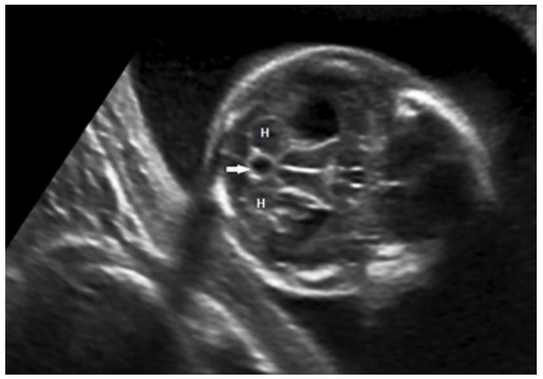
Thank you so much for your generous contribution of eight chapters on the fetal ear to VISUOG. What motivated you to share your significant body of work to ISUOG's visual encyclopedia?

I have been involved in digital teaching of fetal ultrasound for over 20 years, having written a digital fetal ultrasound teaching program entitled "The Ultrasound of Life". Similarly, VISUOG allows the user to access information on highly specific areas of fetal imaging that has been peer reviewed and written by experts in their field. Fetal ear evaluation is an area of imaging that is poorly covered in the literature, so sharing the information on fetal ears that I have accumulated over many years motivated me to use this virtual encyclopedia.

"VISUOG allows the user to access information on highly specific areas of fetal imaging that has been peer reviewed and written by experts."

Could you elaborate on the topics covered in these chapters and the key insights readers can expect to gain from them?

The topics I covered begin with embryology of the different components of the ear and describe how each component is responsible for a different anatomical part of the ear. There is a detailed description on the 2D and 3D anatomy and the advantages and disadvantages of each modality. The abnormalities of the ear are then grouped into whether they involve the outer ear - pinna, middle or inner ear. Although these three components of the ear have different embryological origins, there is some linkage between pathologies of each component. Although some abnormalities of the ear are specific to a syndrome, many are non-specific and not diagnostic of a specific condition. I described the various ear abnormalities that may be associated with the more common syndromes.

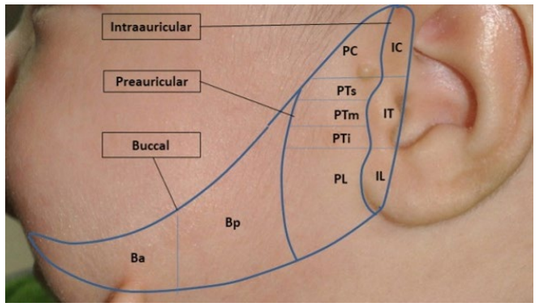


What sparked your interest in this particular area of fetal anatomy and how did your career unfold?

My interest in fetal ears arose primarily in the late 1990's when I started using 3D imaging to evaluate the fetus and, when doing a literature review, I found no comprehensive reviews on fetal ears.

"AI and ultrasonography will improve the quality of medical services and patient care."

I found that I continually, incorrectly, reported abnormal fetal ear location in many normal cases. This discrepancy arose as traditional teaching on external ear location was based on postnatal studies that involved drawing a line from the outer canthus of the eye to the occipital bone and expecting this line to pass somewhere through the superior helix of the ear. This technique did not consider that a deficiency of the superior helix, which is one of the more common anomalies of the outer ear, makes the ear appear low lying when in fact they are normally located on the face. I started looking at different techniques that could be used to evaluate ear location based on the position of the EAC rather than the superior helix.



Over time and after the accumulation of more cases, I began realizing that suspected isolated fetal anomalies in other organ systems were often part of a syndrome when they were associated with abnormalities of the ear.

Looking ahead, what excites you the most about the future of ultrasound, particularly in your specialized field of fetal ear imaging?

The most exciting and somewhat uncertain future of fetal imaging involves artificial intelligence or AI. AI's ability to analyze data, access all clinical knowledge in a specific area in real time, as well as its inherent problem-solving techniques has the power to assist in evaluating anomalies. It has the potential to group together a set of unrelated anomalies into a possible syndrome. AI and ultrasonography will improve the quality of medical services and patient care through process efficiencies, scaling and reducing the rates of misdiagnosis and missed diagnosis.

Dr. Ian Suchet is a board-certified radiologist at EFW Radiology Advanced Medical Imaging Centre in Calgary, Alberta. He received his medical education in South Africa in 1982. He is fully qualified and CPSA-approved to perform diagnostic imaging procedures.

Read Dr Suchet's free-access VISUOG chapter on Normal ear and its evaluation and a further seven VISUOG chapters of fetal ear.

Final Thoughts from the ISUOG President

As I conclude this testimonial celebrating VISUOG's tenth anniversary, I am filled with deep gratitude for the hard work of our contributors and our team in making VISUOG a tool that ISUOG and all of us can be proud of. Thanks to everyone's efforts, passion for teaching, and continuous pursuit of excellence, we can now celebrate this commendable milestone.

VISUOG is today an invaluable tool for teaching and sharing knowledge in obstetric and gynecological ultrasound. This online resource is available to all our members and contains 49 chapters in gynecology and 226 chapters in obstetrics, at time of writing, all written and regularly updated by leading experts.

VISUOG is currently the benchmark of high-quality, comprehensive and up-to-date educational material, incorporating the latest advancements, and is a testament to the dedication of our Task Force, authors, and section editors. They have tirelessly contributed their expertise to create a repository that encapsulates cutting-edge developments and established practices in ultrasound.

I have no doubt that VISUOG will continue to progress and improve, enriched by the input and work of its many contributors, as well as its thousands of users, all of whom are welcome to help us further optimize this formidable knowledge bank.

Thanks to VISUOG, we are at the heart of our mission as a charity: To improve women's health through the provision, advancement and dissemination of the highest quality education, standards and research information in ultrasound in obstetrics and gynecology.

Prof. Laurent Salomon
ISUOG President

isuog

www.isuog.org

Email: info@isuog.org

Connect with us:

Registered charity number: 1030406 | Registered company number: 02722770
Registered office and operational address: ISUOG, 122 Freston Road, London, W10 6TR, United Kingdom