

出國報告（出國類別：國際會議）

STIC 結合實時間高層次超音波影像診斷
胎兒心臟血管環：醫學中心三案例分析

服務機關：台中榮民總醫院 婦女醫學部

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派赴國家/地區：新加坡

出國期間：20181019-20181024

報告日期：20181102

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一. 摘要

國際婦產科超音波學會 (ISUOG)，為醫用超音波領域的至高殿堂。職於 20181019 至 2018102 參加於新加坡舉行的第 28 屆國際婦產科超音波學會 ISUOG 年度大會，並發表 [STIC 結合實時間高層次超音波影像診斷胎兒心臟血管環:醫學中心三案例分析] 壁報論文與小型口頭報告。有機會在五天會議中聆聽大師演講與其他來自各國同好一同交流，獲益匪淺。

二. 目的

2018 年的國際婦產科超音波學會 (ISUOG) 世界大會相當難得於新加坡舉行，並不需要舟車勞頓及長途跋涉，不但能知道目前超音波最新的應用，更能增進自身超音波技術，進而應用於臨床改善病人的照護品質。國際婦產科超音波學會 (ISUOG) 所公告的每一篇超音波臨床指引一向都被國內外婦產科醫師熟知並且在臨床上廣泛應用，而 ISUOG 每年的世界大會就是各國同好把超音波的應用推展到極致的舞台。

三. 過程

首先，第一天參加了由各領域大師擔綱的會前會課程，主題有「從基因到產科處置」、「基礎婦產科超音波訓練」及「診斷及嚴重程度評估深部浸潤子宮內膜異位的超音波」，我們一行人都選擇了產科相關的課程。接著大會共持續四天，每天從早上 7:30，一直持續到下午 5:30，討論的議題很廣泛，包含早產、子癲前症、死產、孕產婦併發症的避免，非侵入性母血唐氏症篩檢的角色，以及在各孕期間超音波的協助，例如第一孕期胎兒異常的診斷，胎兒生長遲滯的評估及合適生產時間，胎兒心臟功能性的評估，甚至應用在產程的評估及自然產成功率預測，都是目前在臨床我們較少操作的部份。我涉獵最多的主題有

兩大類:一是[胎兒心臟功能性的評估]，受教於美國 DeVore 教授與以色列 Yagel 教授;另一是胎兒生長遲滯的評估，受教於義大利 Palatini 教授與法國 Malinger 教授。兩大主題本就是我平日很注意的重點專長，我仍然如慕春風，如虎添翼。

四. 心得

到院 26 年，這是我第一次下決心暫時放下臨床工作，走出象牙塔，看世界之大，專心給自己一個停下來思考的機會。也好好趁機好好來檢視自己在臨床上對病患的處置及檢查是否可更精進? 在這次的 ISUOG 世界大會中，主題廣泛，可隨自己專長與興趣而有所選擇，真的機不可失。利用和大師面對面接觸的機會，配合自己原本在胎兒血流研究方面的專長，我參加所有相關的主題與子題，分為兩大類:一是[胎兒心臟功能性的評估]，受教於美國 DeVore 教授與以色列 Yagel 教授;另一是胎兒生長遲滯的評估，受教於義大利 Palatini 教授與法國 Malinger 教授。這兩大類主題其實是連結在一起的，從中，我不僅習得新觀念，最重要的是，我改正了不合時宜的舊有錯誤觀念，讓自己往前跳了一大步。同時，自己懂得更謙虛，更畏懼世界之大。

五. 建議

自己長期研究胎兒心臟病與相關血流變化，也感謝院方對於高階超音波儀器添購的支持，我也一直很努力在利用所學從事臨床服務，也是同事們相關疑難雜症的諮商對象，臨床之餘，研究亦有產出。我所涉獵的部分，國內從事者極少，特別在中部地區，應屬翹楚。但，我從事這塊領域並不賺錢，期待院方了解這個專長培養不易，未來在高階超音波儀器的添購，仍能如往常的支持和體諒。謝謝院方。

六. 附錄



所有與會的人員：
 彭賢雯技術員（左一）
 曾振志醫師（左二）
 陳威志主任（左三）
 邱方榆醫師（右一）
 鍾佩穎醫師（右二）

STIC Combined with High-Definition Flow Imaging in the Diagnosis of Fetal Vascular Rings - an approach based on 3 cases from a tertiary center
 Jenn-Jhy Tseng, Fetal Ultrasound Research, Daanhsing Veterans General Hospital, Taiwan

Introduction
 The majority of congenital vascular rings can be diagnosed through 3D fetal echocardiography with color Doppler in the three-vessel view and its adjacent views. The diagnosis is based on the 3D reconstruction to study vascular variations in the upper mediastinum (ie, the bronchopulmonary segment). Four studies have used 3D reconstruction to investigate the aortic arch branching in fetal vascular rings. Here, in addition to 2D ultrasonographic findings, we describe a case series of fetal vascular rings by using STIC technique with high-definition (HD) flow imaging. 3D images were reconstructed via the glassbody and HDV flow modeling modes.

Case Series
 We demonstrated 3 types of fetal vascular rings by using STIC combined with HD flow imaging. Case 1: A left aortic arch with a left ductus arteriosus and an aberrant right subclavian artery (ARSA) was diagnosed at 21+4 weeks (Figure 1). The left aortic arch gives rise to the right common carotid artery in the fetal trunk, followed by the left common carotid artery, left subclavian artery, and ARSA in sequence. Case 2: A right aortic arch with a left ductus arteriosus and an aberrant left subclavian artery (ALSA) was diagnosed at 21+6 weeks (Figure 2). The right aortic arch was typically visualized to have four major branches from the inferior to posterior direction relative to the fetal lower left common carotid artery, right common carotid artery, right subclavian artery, and ALSA. Case 3: A double aortic arch at was diagnosed 21+6 weeks (Figure 3). The branching vessels from each aortic arch form the anterior to posterior direction relative to the fetal trunk; the common carotid artery and subclavian artery could be well visualized.

Conclusion
 In summary, the application of STIC combined with HD flow imaging enable enhanced visualization of aortic arch branching in fetal vascular rings. This information is critical to direct perinatal counseling and management through more comprehensive 3D images.

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ISUOG 世界大會的電子海報投稿刊出



Certificate of Attendance

This is to certify that
Jenn-Jhy Tseng
 has attended the
28th World Congress on Ultrasound in Obstetrics and Gynecology
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