

Three-dimensional (3D) ultrasound and doppler angiography imaging in the prenatal assessment on normal and abnormal fetal cardiac anatomy

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Objective: To highlight the value of 3D volume ultrasound in the prenatal assessment on normal and abnormal fetal cardiac anatomy.

Methods: A retrospective offline analysis of volume datasets of 160 pregnant women carrying fetuses with normal cardiac anatomy and 40 pregnant carrying fetuses with cardiac malformations was conducted.

Results: 45 cardiac malformations were diagnosed. Isolated cardiovascular malformations were detected in 27 fetuses, of which 4 had trisomy 21 and 1 had trisomy 18 one fetus exhibited 22q11 microdeletion (DiGeorge syndrome). Extracardiac abnormalities were identified in 13 fetuses.

Conclusion: 3D ultrasound offers a high-resolution volume rendering image that provides excellent delineation of cardiac anatomy and add significantly to understanding of the normal and abnormal cardiovascular anatomy, an axiomatic element, to understand cardiovascular anomalies, moreover, these high-quality images clarifying fetal cardiac anatomy may be effective in in-depth understanding and teaching

basic echocardiography. Offline analysis of cardiovascular anomalies conferred significant diagnostic advantages over standard 2D and represents an invaluable tool for the prenatal diagnosis and optimal management of fetuses with congenital heart diseases. This technology enabling worldwide remote diagnosis especially underserved area not having access to facilities and represents an invaluable tool for a better understanding and interpretation of normal and abnormal fetal cardiac anatomy.

Keywords: Fetal Echocardiography, Power Doppler Imaging, Prenatal Diagnosis, 3D Ultrasound, 4D Ultrasound, Cardiovascular Malformations, Ultrasound, Congenital Heart Disease (CHD).

Biography

El Guindi Wael is a Consultant in Gynaecology and Obstetrics in a France. He done his PH Degree in Highest French Degree in Gynecology Obstetrics in France Consultant March 2010 and also his has published more than 12 articles in reputed journals.

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Received Date: July 04, 2022; **Accepted Date:** July 06, 2022; **Published Date:** December 12, 2022