

'See-through Fashion' in Prenatal Diagnostic Imaging

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ABSTRACT

Three-dimensional (3D) ultrasound has remarkably contributed to prenatal diagnosis in fetal medicine. New applications of HDlive silhouette and HDlive flow show an inner cystic structure through the outer surface structure of the body and it can be appropriately named as 'see-through fashion'. Picture of the month demonstrates the premature brain cavity of forebrain, midbrain and hindbrain as well as the fetal premature central nervous system vascularity toward the brain inside the outer surface structure of an 8-week-fetus. Thus, the advantages of this 'see-through fashion' imaging are comprehensive orientation and persuasive localization of inner morphological structure as well as of fetal angiostructure, and more accurate clinical information for prenatal diagnoses and proper perinatal management can be added.

Keywords: Fetus, HDlive flow, HDlive silhouette, Prenatal diagnosis, See-through fashion, Ultrasound.

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PICTURE OF THE MONTH

Three-dimensional (3D) ultrasound has remarkably contributed to prenatal diagnosis in fetal medicine. Recent advanced 3D technology has produced exciting new applications of HDlive silhouette and HDlive flow,¹ released at the end of 2014. The algorithm of HDlive silhouette creates a gradient at organ boundaries, fluid filled cavity and vessels walls, where an abrupt change of the acoustic impedance exists within tissues. By HDlive silhouette mode, an inner cystic structure with fluid collection can be depicted through the outer surface structure of the body and it can be appropriately named as 'see-through fashion'.

The ultrasound image of an 8-week-fetus (Fig. 1) demonstrates the premature brain cavity of forebrain,



Fig. 1: 'See-through fashion' imaging of normal 8-week-fetus. Premature brain cavities of forebrain, midbrain and hindbrain as well as fetal whole vascular structure are simultaneously demonstrated in the fetal body. Note the premature blood vessel of the central nervous system toward the brain cavity

midbrain and hindbrain as well as the fetal premature central nervous system vascularity toward the brain inside the outer surface structure of the fetal body. Thus, the advantages of this 'see-through fashion' imaging are comprehensive orientation and persuasive localization of inner morphological structure as well as of fetal angiostructure inside the fetus. Conventional technology has detected morphological structure and angio-structure independently, however simultaneous demonstration of both morphology and circulation can potentially provide more accurate clinical information for prenatal diagnoses and proper perinatal management.

REFERENCE

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