Fetal magnetic resonance imaging (MRI) has been an ever more important tool for the antenatal assessment of the well-being of the mother-fetus dyad\(^1\).

Ultrasound (US) is the imaging study of choice for the assessment of pregnancy with no risk factors, whether for assessing nuchal translucency (11 weeks of gestation) or morphology (20 weeks), due to its good spatial resolution, innocuity, low cost and satisfactory follow-up.

The neurological indications for MRI assessment are restricted to the following situations\(^2\)-\(^3\): to confirm and characterize changes seen in the US; to rule out other central nervous system (CNS) anomalies not characterized by the US (for example, in cases of ventriculomegaly, often times there are other associated findings); detection of CNS changes not characterized by the US (50%); normal US with previous gestational or genetic disorders, maternal exposure to infection (CMV, toxoplasmosis), maternal debility (e.g. maternal heart problem), monochorionic twin pregnancy, feto-fetal transfusion and intrauterine death of twins.

The test is performed with a 1.5 Tesla MRI machine using high magnetic field radiofrequency (does not use radiation), from the second trimester of pregnancy. The use of intravenous contrast is not usually indicated in this situation.

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Received on Dec 15, 2008 - Accepted on Marc 7, 2009
Brain development can be assessed more accurately and in more details as to its dimensions (biometry), morphology, sulci/gyri and myelinization.

Figure 1 shows the MRI of a 33-week fetus with the ultrasound diagnosis of Dandy-Walker complex malformation. The MRI confirms the diagnosis, with high implantation of the torcula, cystic dilatation of the fossa communicating with the fourth ventricle and hypoplasia of the cerebellar vermis. The absence of other associated malformations (absence of hydrocephalus, integrity of corpus callosum, absence of migration disorders), seen by MRI, along with the absence of confirmed cardiopathy by fetal echocardiography assure better prognosis for the family.

REFERENCES