

# THIRD-TRIMESTER ULTRASOUND EVALUATION OF ARACHNOID CYSTS

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**Case 1.** A 28-year-old primigravida was referred to the hospital at 34 gestational weeks because of an intracranial cyst. Two-dimensional ultrasound revealed a  $1.76 \times 2.69$  cm midline interhemispheric hypoechoic homogeneous lesion that was consistent with an arachnoid cyst (Figure 1). The cystic mass was located behind the thalamus and above the cerebellum. There was no ventriculomegaly or midline shift. The cerebral sulci, gyri, and corpus callosum were normal. A 2,656-g female baby was delivered at term with Apgar scores of 10 at both 1 and 5 minutes. Postnatal magnetic resonance imaging (MRI) confirmed the prenatal diagnosis. The infant was healthy at the age of 18 months without any symptoms involving the central nervous system.

**Case 2.** A 20-year-old primigravida was referred at 25 gestational weeks because of an intracranial cyst. Prenatal ultrasound revealed a  $6 \times 4$  cm right interhemispheric hypoechoic homogeneous lesion (Figure 2). Amniocentesis revealed a karyotype of 46,XY. Magnetic resonance imaging at 28 gestational weeks showed a  $6.5 \times 4.2$  cm right interhemispheric arachnoid cyst, dilation of the atria of the lateral ventricles, and dysgenesis of the corpus callosum (Figure 3). At 28 gestational weeks, a 1,500-g male infant was delivered prematurely by cesarean section with neonatal death.

Arachnoid cysts represent about 1% of all intracranial masses in newborns [1]. Congenital arachnoid cysts result from accumulation of clear fluid between the dura and brain substance throughout the cerebrospinal axis in relation to the arachnoid membrane

and without communicating with the subarachnoid space [2]. Arachnoid cysts are usually diagnosed in the third trimester. Supratentorial sylvian fissure cysts are the most common. Arachnoid cysts may be isolated or associated with ventriculomegaly and dysgenesis of



**Figure 1.** Prenatal ultrasound of Case 1 on the axial view at 34 gestational weeks shows a  $1.76 \times 2.69$  cm midline interhemispheric hypoechoic homogeneous lesion. a = arachnoid cyst.

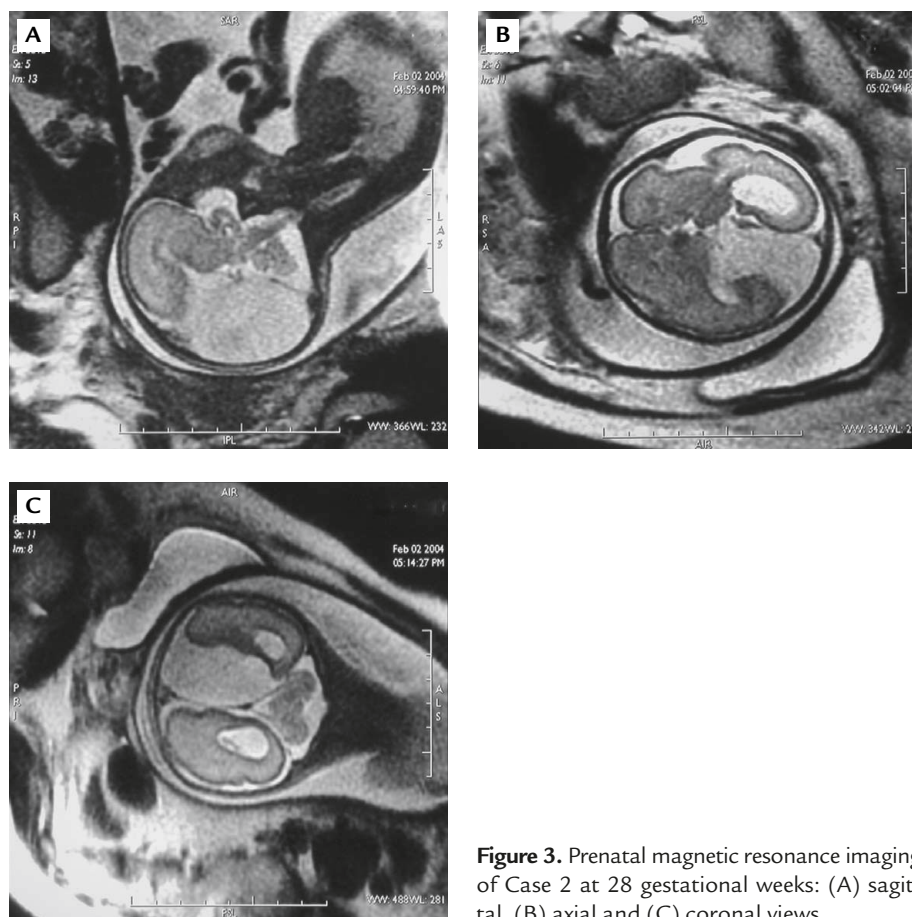


**Figure 2.** Prenatal ultrasound of Case 2 at 25 gestational weeks.

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**Figure 3.** Prenatal magnetic resonance imaging of Case 2 at 28 gestational weeks: (A) sagittal, (B) axial and (C) coronal views.

the corpus callosum [3,4]. Isolated arachnoid cysts without other structural abnormalities may have a favorable outcome. However, fetal arachnoid cysts can be associated with chromosomal abnormalities and other structural abnormalities, thus requiring a thorough sonographic investigation for central nervous system anomalies and a cytogenetic study. Prenatal two-dimensional ultrasound evaluation of arachnoid cysts should also include a differential diagnosis of porencephalic cysts, gliependymal cysts, aneurysms of the vein of Galen, schizencephaly, cystic teratoma, cystic astrocytoma, and cavitation of the cerebral hemispheres following infarction.

## References

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