Two cases of arachnoid cysts
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Objective
Arachnoid cysts are the result of an accumulation of cerebrospinal-like fluid between the cerebral meninges. They are diagnosed prenatally as a simple, echolucent area within the fetal head and which no communication with the ventricular system is seen. They may be primary (maldevelopment of the meninges) or secondary (acquired) (result of infection trauma, or hemorrhage). We report the two cases of arachnoid cysts that had good outcomes.

Methods
Case 1: A 26-year-old Turkish woman in her first pregnancy was referred at 29 weeks of gestation with a diagnosis of fetal hydrocephalus. Neither of the parents had a family history of genetic disorders or structural anomalies. A detailed abdominal 2D ultrasonography (USG) (Voluson E730; GE Healthcare) was performed to verify the presence of the lesion and to identify any associated anomalies. Fetal biometry was mostly normal, apart from the a round, fluid-filled mass of about 45 mm in diameter displacing the left lateral ventricle towards the midline was noted in the fetal head (Figure 1). A fetal MRI on a clinical 1. 5 T whole-body unit was performed at 31 weeks gestation. There was a cyst measured with 42x 41 x 36 mm in supratentorial area. Compression of other brain structures (right lateral ventricle, right occipital horn) was seen. There was no connection between the cyst and the ventricles (Figure 2). The fourth ventricle was normal in size. The corpus callosum was fully formed. No other anomalies were found. At 36 weeks gestation labour was induced and a Cesarean performed because of breech presentation and preterm rupture of membranes. A live baby boy weighing 3010 g was delivered by caesarean section. Apgar scores were 8 and 9 at 1 and 5 minutes respectively. MRI was obtained after birth. The brain parenchyma was normal, without structural brain damage. Endoscopic fenestration was performed on day 11. The baby recovered and is doing well. Neurologic follow-up was normal until 6 months.

Results
Case 2: A 29-year-old Turkish woman in her first pregnancy admitted at 31 weeks of gestation with a diagnosis of fetal cranial cyst that was detected on a routine antenatal USG examination. Neither of the parents had a family history of genetic disorders or structural anomalies. A detailed abdominal 2D ultrasonography (USG) (Voluson E730; GE Healthcare) was performed to verify the presence of the lesion and to identify any associated anomalies. Fetal biometry was mostly normal. There was an isolated extra ventricular supratentorial arachnoid cyst that appeared as a rounded, fluid filled cyst (Figure 3). The cyst enlarged progressively over the duration of pregnancy. At 40 weeks gestation labour was induced and a live baby weighing 3200 g was delivered by caesarean section due to fetal stress. Apgar scores were 9 and 10 at 1 and 5 minutes respectively. MRI was obtained after birth. The brain parenchyma was normal, without structural brain damage. Endoscopic fenestration was performed in the first week of life (day 5). The baby recovered and is doing well.

Conclusion
Herein, we described two cases of fetal arachnoid cases diagnosed the condition using 2D and color Doppler ultrasonography modalities and confirmed the diagnosis with a fetal MRI. Arachnoid cysts appear as well-defined anechoic lesions with mass effect and are frequently associated with ventriculomegaly on USG. Correct diagnosis has important implications for counselling, especially with respect to continuation of pregnancy and treatment options. Fetal arachnoid cysts have been reported with chromosomal abnormalities and prenatal diagnosis of an arachnoid cyst, especially in association with structural abnormalities, invasive karyotyping should be offered. Whilst ultrasound performs extremely well in diagnosis and follow-up, a prenatal MRI is often requested to confirm the diagnosis and exclude other possible central nervous system anomalies such as agenesis of the corpus callosum and cortical gyral abnormalities. Arachnoid cysts without associated structural anomalies or chromosomal abnormalities can have a favourable outcome. Indications for an early delivery include rapidly increasing ventriculomegaly or head circumference.