Correspondence to the image quiz by Kaymak et al.

Kaymak ve arkadaşlarının görüntülü sorusu üzerine yazışma

Dear Editor,

We read the paper by Kaymak et al. published in the latest issue of your journal with great interest (1). In this paper, the authors have discussed the benefit of fetal magnetic resonance imaging (MRI) in the differential diagnosis of fluid filled structures over the calvarium. In the first step of evaluation they used 2D transabdominal ultrasonography and detected a cystic mass over the posterior fontanelle. They supposed it to be an encephalocele, until the results of fetal cranial MRI was available. MRI revealed it as a subcutaneous cystic mass with an intact skull.

Meanwhile, we wish to highlight some details regarding the prenatal diagnosis of cephalocele and its differential diagnosis. Cephalocele is the general name of any calvarial defect containing a pouch of cerebrospinal fluid, whether or not it contains the brain tissue. Types of cephaloceles are cranial or occipital meningocele (only dura with cerebrospinal fluid), encephalocele (small amount of neural tissue and cerebrospinal fluid in the dura), encephalomeningocele (cerebrospinal fluid and complete brain without lateral ventricle) and encephalomeningocystocele (whole content of brain including the lateral ventricle in the protruding mass) (2).

Although a cephalocele can be located anywhere in the calvarium, the posterior part of the cranium is frequently involved. The diagnosis requires the demonstration of the bony defect. Unclosed sutures or fontanelles may mimic the defect. Additionally, intracranial anatomy is always distorted except in a small meningocele. Intracranial reflections of encephalocele include ventriculomegaly, frontal bossing and obliteration of the cisterna magna. The differential diagnosis of a meningocele with small osseous defect from the soft tissue masses of skin or subcutaneous tissue may be difficult. The details of sonographic differentiations of these soft tissue lesions from a meningocele of small calvarial defect were clearly stated (2). Observing a normal intracranial anatomy with an intact cranium is strong evidence of non-calvarial pathologies. Neurosonography (multiplanar examination of the fetal head by an experienced operator, using a transabdominal and/or transvaginal transducer) may help to make a proper evaluation of intracranial anatomy (3).

Regarding the information given above, the lesion depicted in picture 1 did not have a neural content and it should be classified as a "meningocele", if it is really a neural tube defect. This picture also fails to demonstrate the bony defect. There is no doubt of the value of information provided by fetal MRI, but it is always essential to keep in mind the obstacles involved: such as the cost, availability and necessity of qualified personnel in fetal imaging. We propose to make a neurosonogram with proper image magnification, beam direction and appropriate settings of ultrasound before selecting fetal MRI.

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Author's Response

We thank the authors for their interest and comments on our paper. The authors have highlighted some details regarding terminology and sonographical diagnosis of cephalocele. They also have commented on obstacles regarding the use of fetal MRI for diagnosis. We totally agree with our colleagues who have proposed making a proper neurosonogram prior to fetal MRI. It is undoubtedly true that MRI should not be used as an initial assesment tool before complete ultrasonographic examination of the fetal neural axis, which is conveniently performed with transvaginal transducers between 5 and 10 MHz (1). For reasons also stated by our colleagues, the use of fetal MRI to compensate for inadequate fetal neural imaging is unacceptable (2). However due to techniqal limitations inherent to sonographic intsrumentation as well as lack of knowledge about the exact time of development of sonographically

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detectable indirect intracranial signs (such as ventriculomegaly); definitive diagnosis of certain CNS pathologies cannot be always possible (3). As stated by our colleagues a meningocele of the cranial vault with a small bony defect is one example (4). Moreover, when a provisional diagnosis of cephalocele without evident bony defect is made at an earlier gestational age, sonographically detectable ventriculomegaly and frontal bossing may appear later. Under such circumstances, reassurance of both physician and patient by fetal MRI may be suitable. Once again we are grateful to our colleagues for their contribution and for the opportunity to address their concerns. The aim of this study was to define a condition in which fetal MRI may be additive to fetal neurosonography. This is now more evident combined with the contributions of our colleagues.

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