

Enlarged Cavum Septum Pellucidum: Diagnosis, Implications, and Prognosis

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SECTION 2 – ANSWER

Case description

A pregnant woman of 40 years of age, nulliparous, with asthma controlled without daily medication and with no history of congenital malformations in the family, was referred to our obstetric department at the 19th week of gestation for pregnancy surveillance.

Relatively to the routine pregnancy examinations, it was not possible to execute the 1st trimester screening due to a fetus crown-rump length of 92 mm at the time. The pregnant woman refused invasive test and it was done the noninvasive prenatal test which showed a low risk of the trisomies 13, 18, and 21. The 2nd trimester ultrasound (22w2d) highlighted an enlarged cavum septum pellucidum (CSP) of 5.9 mm of width and 9, 1 mm of length (CSP ratio >1.5). This rectangular-shaped and fluid-filled cavity presented low density, being an anechoic structure in the anterior part of brain cavity. Besides that, it was found an hyperechogenic focus in the left cardiac ventricle [Figures 1 and 2]. At the 3rd trimester ultrasound (32w3d), the intracardiac focus disappeared. Besides that, CSP width measurement has grown to 8.7 mm, CSP length has decreased to 8.7 mm (ratio of 1) and its appearance has become as an anechoic square-shaped structure [Figure 3]. The pregnant woman was submitted to a fetal complementary magnetic resonance study at 34 weeks and 1 day, which diagnosed an enlarged CSP (11.5 mm) and a small cystic aspect formation with hyposignal on T1 and hypersignal on T2 which was diagnosed as a CSP cyst [Figure 4].

INTERPRETATION

As shown in Figure 1, the cerebral transverse transventricular plan at the 2nd trimester ultrasound showed an image of an anechoic rectangular-shaped and enlarged CSP of 5.9 mm of width and 9.1 mm of length and a normal cerebral lateral ventricle. No other fetal malformations appeared at this anatomical

surveillance, besides the hyperechogenic focus in the left cardiac ventricle presented at the four-chamber view of Figure 2. During the fetal neuroassessment, the width measurement of CSP was reviewed in the 3rd trimester ultrasound and it showed higher dimensions this time (8.7 mm), unlike its length which decreases (8,7 mm). Moreover, its appearance has become as an anechoic square-shaped structure. With a complementary cerebral magnetic resonance study, it was confirmed the finding of an enlarged CSP (11.5 mm of width) and it was understood its cause – A small cystic aspect formation with hyposignal on T1 and hypersignal on T2 which was diagnosed as a CSP cyst [Figure 4].

DISCUSSION

A CSP is a cerebrospinal fluid-filled cavity situated between the lateral ventricles and its cysts are defined as fluid-filled structures

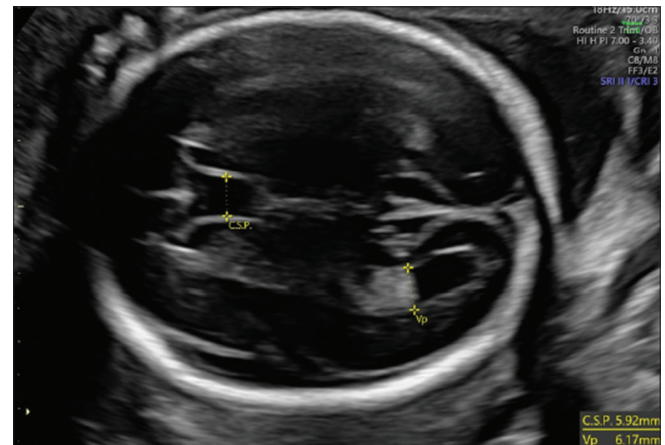


Figure 1: 2nd trimester ultrasound image of cerebral transventricular transverse plan. An rectangular-shaped and anechoic cavum septum pellucidum with 5.9 mm of width and 9.1 mm of length and a normal cerebral lateral ventricle are shown

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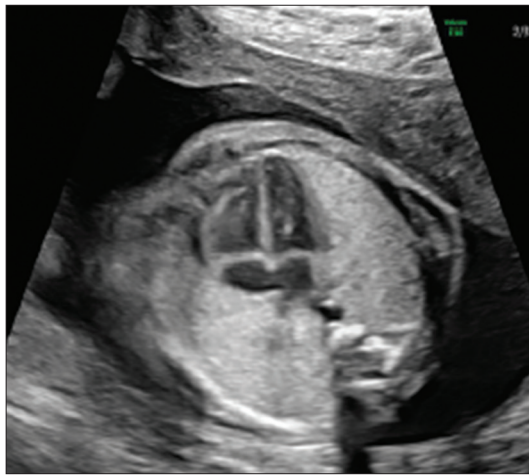


Figure 2: 2nd trimester ultrasound image of transverse heart plan at the four-chamber view. A hyperechogenic focus in the left cardiac ventricle is present

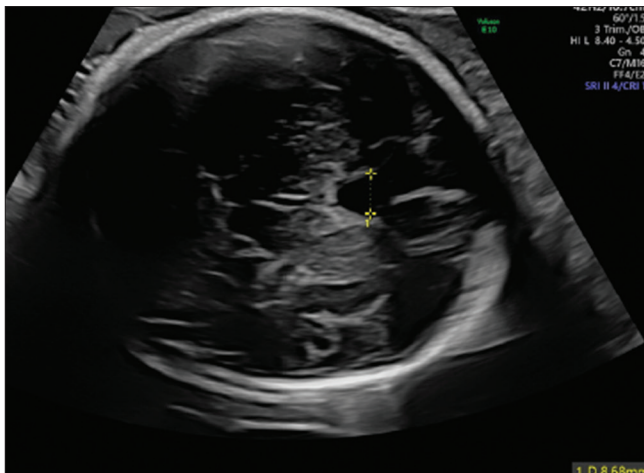


Figure 3: 3rd trimester ultrasound image of cerebral transventricular transverse plan. An square-shaped and anechoic cavum septum pellucidum with 8.7 mm of width and 8.7 mm of length is shown

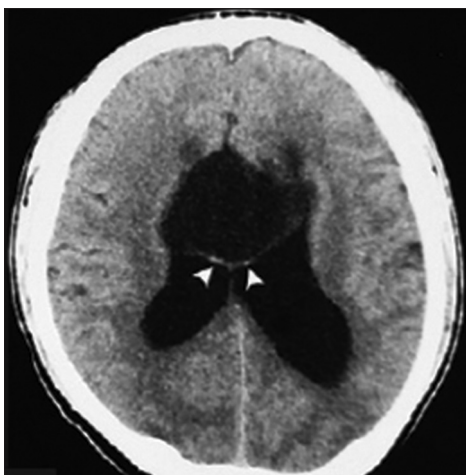


Figure 4: Magnetic resonance scan of cerebral transventricular transverse plan showing of the cyst within the cavum septum pellucidum - hypodense cystic lesion with marginal calcification (arrowheads) and hypointense signal on T1

with lateral bowing of the walls and membranes separated by at least 10 mm or more.^[1] Obstetric ultrasound typical findings of

abnormal CSP are its presentation as an anechoic square-shaped structure (short and wide CSP), with a decreased CSP ratio (<1.5).^[2] The fetal complementary magnetic resonance is the most precise examination to confirm the prenatal ultrasound diagnosis.^[3] Most often asymptomatic, the symptomatic ones are very rare.^[4] Differential diagnosis of anterior midline intracranial cysts must include CSP cysts, cavum vergae cysts, and cavum velum interpositum cysts.^[5] The intracranial midline cyst named as cavum vergae was first described by verga and is an extension of CSP posteriorly past the columns of the fornix and foramina of Monro. The velum interpositum space is the subarachnoid space between the connected fornix and its respective choroid plexus, and the choroid forming the roof of the third ventricle inferiorly. If this potential space is dilated, then it is known as the cavum velum interpositum, which on axial imaging shows a distinct triangular appearance with an apex directed anteriorly toward the forniceal columns.^[5] Its clinical presentation is varied and can be associated with headache and other symptoms of increased intracranial pressure, neurological deficit, and mental status changes. If necessary, the neurosurgical treatment is the preferred one, but there is still no agreement about the ideal operative technique.^[6] Endoscopic or stereotactic fenestrations showed better clinical outcomes and lower recurrence rates and the relief or complete cure of the symptoms was achieved in most of the cases.^[7]

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient has given her consent for her images and other clinical information to be reported in the journal. The patient understands that name and initials will not be published and due efforts will be made to conceal identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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