Mega Cisterna Magna (MCM) and Arachnoid Cysts (AC)

Patient Information Series – What you should know, what you should ask.

What are mega cisterna magna (MCM) and arachnoid cysts (AC)?

MCM involves the enlargement of normal fluid-filled space in the brain with no other structural differences anomaly in other cerebral structures. ACs are usually benign, cerebro-spinal fluid-like collections that develop within the layers of the membranes that wrap the brain.

How do MCM and AC cysts happen?

Both are considered cystic lesions of the posterior brain. In the early development of the fetus an alteration occurs in the making of the system and spaces where the spinal fluid normally travels, and mega cisterna magna results as a consequence of the accumulation of spinal fluid in this space. ACs develop when there is a failure of the development of an embryological structure important in the formation of the early fetal brain (neural tube).

How is genetic testing relevant to an MCM and AC?

Studies show that a fetus with MCM or AC and no other structural differences in the brain or other organ systems, does not require genetic testing. Testing is advised when MCM or AC is not of an isolated nature. The type of genetic test to be done should be selected based on the nature of the associated findings after a complete evaluation of the baby.

Should I have more tests done?

Pregnant individuals may be offered additional tests to know more about the extent of the condition of the baby. The tests available depend on your location. Mothers should be reassured that both MCM and AC ultrasound diagnosis is readily available and highly accurate. Additional tests can include:

- A complete evaluation of the fetal anatomy using ultrasound, to rule out additional structural differences in other fetal organ systems.
- A focused ultrasound review of fetal brain structures by a highly trained expert, called detailed neurosonography, to visualise every structure in the brain in a detailed form.
- An MRI scan, where available, can be done to rule out additional subtle changes in the fetal brain and ensure that no surrounding structures are compressed. This scan uses strong magnetic fields and radio waves to create detailed images of the inside of the body.

What are the things to watch for during the pregnancy?

In some cases, MCM can be a transient finding, or it can enlarge during fetal life, so follow-up is recommended. For AC, follow up is recommended to assess the cyst size and progression and check up on other brain structures that can be altered by the mass effect.

What does it mean for my baby after it is born?

After birth, a complete ultrasound examination of the baby´s brain should be made, to correlate with the prenatal diagnosis and/or to rule it out.

Will it happen again?

If no other genetic reason is found to explain the MCM or AC, the risk of this happening again is rare. If there is a genetic explanation the recurrence risk will be determined by the underlying condition, and a consultation with a genetic specialist or fetal medicine specialist may be helpful in planning future pregnancy.

What other questions should I ask?

- Is this cyst or space getting bigger over time?
- Are there any other associated malformations?
- How often will I have ultrasound examinations done?
- Is surgery during pregnancy available for my baby's condition?
- Where should I deliver?
- Where will the baby receive the best care after it is born?
- Can I meet the team of doctors that will be assessing my newborn baby before birth?

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