Mid Cheshire Hospitals
NHS Foundation Trust

Guide to fetal Ventriculomegaly

Important information for patients

Contact numbers

Should you require any additional information or help, please contact:

FETAL MEDICINE UNIT
Tel: 01270 273775

Introduction

The surfaces of the brain and spinal cord are bathed in cerebrospinal fluid which helps protect them. Cerebrospinal fluid is produced deep within the brain and flows through a system of interconnecting cavities called ventricles to coat the surface of the brain, spine and major nerve roots where it is reabsorbed. The ventricles are imaged routinely as part of the ultrasound scan of the fetal brain at 18 to 20 weeks of pregnancy. The sizes of these ventricles are recorded at this examination. When one or both of the ventricles are dilated and measure larger than normal, it is termed Ventriculomegaly (or you may also hear it being called hydrocephalus).

Ventriculomegaly affects approximately one in every 500 babies born, with boys being almost twice as likely to be affected as girls.

Normal measurements are between 4-10mm. A measurement greater than 10mm is considered dilated. Having a measurement above 10mm is not necessarily abnormal, but is simply outside of our “normal” range. However, a ventricle measurement above 10mm could suggest that there may be a potential problem with your baby and as such you will be offered further investigations. This information leaflet is designed to answer some of the questions you may have.

Types of Ventriculomegaly

Ventriculomegaly is usually described as being mild, moderate or severe based on the measured size of the ventricles. If there are no other abnormalities or specific causes identified at the time of the examination, it is described as ‘isolated’. However, Ventriculomegaly can be associated with other abnormalities.

Mild Ventriculomegaly: the ventricles measure between 10–11mm.

Moderate Ventriculomegaly: the ventricles measure between 12–14mm.

Severe Ventriculomegaly: the ventricles measure 15mm or more.

What causes Ventriculomegaly?

Ventriculomegaly may occur for many reasons which lead either to overproduction or under reabsorption of the cerebrospinal fluid. Common causes of Ventriculomegaly can include structural brain abnormalities, infection, chromosomal abnormalities (e.g. Down’s Syndrome) and tissue injury, but sometimes the cause may not be evident. It is not possible to pick up all abnormalities on ultrasound scan and some develop as pregnancy progresses.

There is not an absolute correlation between the measurement and the outcome however, the closer the measurement is to 10mm the more likely the outcome will be normal. **At least 95% of babies with a measurement of between 10 and 12mm in mid pregnancy will have a normal outcome**.

Three important points need to be considered.

1. The size of the ventricle
2. Are there any other abnormalities evident?
3. Is this a marker for a chromosome anomaly, such as Down’s Syndrome?

The long-term outcome depends on all three points and therefore it will only be possible to provide advice for you as an individual, when we have had the opportunity to assess each of these factors.

The chance of the cause being due to Downs’s Syndrome or any other chromosome abnormality is between 1-5%. This may sound high but there is a 95-99% chances the chromosomes are normal.

If the measurement is greater than 15mm there is a significant chance of long-term problems. It is important to remember even with very marked dilatation some babies will have a normal outcome.

What happens next?

The first step is to confirm the findings. A repeat scan will be arranged in the Fetal Medicine Unit.

This scan is to look very carefully at your baby and will include repeating the measurements of the ventricles. For some, the ventricles will change in size and may differ from the original findings. If the repeat measurement remains above 10mm we will discuss the potential implications and significance of dilated ventricles and offered further investigations. Ongoing management varies according to the severity and cause of the Ventriculomegaly. Follow-up involves serial ultrasound assessment of your baby’s growth and assessment of any changes in the size of the ventricles. Progressive dilatation in ventricle size over the course of the pregnancy may be associated with an increased possibility of long-term developmental problems.

Multidisciplinary counselling with a Neonatologist (specialist for newborn babies), Neurologist and/or Neurosurgeon will be arranged if appropriate to the diagnosis before you have the baby.

What further tests may I be offered?

- Amniocentesis - Ventriculomegaly can be associated with a chromosomal problem and, as such, you will be offered the opportunity of having this checked. This means having an amniocentesis. Amniocentesis carries a small risk of miscarriage (pregnancy loss). We will give you further information about this test if offered.

- Viral screen - Some viral infections in the mother can be passed to the baby in the womb (utero) and can give rise to Ventriculomgegaly. We can check this by taking a blood sample from the mother, or in some cases by sending the fluid from around the baby for further testing.

- MRI scan - You may be offered further imaging with MRI to investigate the anatomy of your baby's brain. MRI is safe during pregnancy as it does not rely on radiation exposure. It is performed in order to provide additional information about your baby. This test is carried out in a different hospital, and means travelling to Alder Hey Hospital in Liverpool. It is often not performed until after 28 weeks of pregnancy. This is to ensure they are able to obtain the best images possible.

All this information obtained from these tests is important to determine a cause and to establish whether the Ventriculomegaly is isolated or associated with other problems with your baby. This information is crucial if appropriate information regarding outcome and pregnancy management is to be provided.

What are my options?

Once we have all the information from our ultrasound assessment and the results of any further tests we will be able to discuss in more detail what this means for your pregnancy and your baby. Please be aware this may take a few weeks. You will be offered the opportunity to meet the Paediatric Neurosurgeon who can also give you additional information regarding treatment options available after birth, its success and its effect on neurodevelopmental outcome. In certain circumstances some couples may consider not to continue with the pregnancy. The details around this will be discussed at length and we will support you in whatever decision you make.

Contact details and support groups

Antenatal Results and Choices (ARC)
https://www.arc-uk.org/
Tel: 0845 077 2290 via landline or 0207 713 7486 via mobile

Spina Bifida Hydrocephalus Information Networking Equality (SHINE)
https://www.shinecharity.org.uk/
Tel: 01733 555988

This information is available in audio, Braille, large print and other languages. To request a copy, please telephone 01270 273775.

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