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VENTRICULOMEGALY

The lateral ventricles should be measured at the routine mid-trimester scan in the axial plane at the level of the cavum septi pellucidi, with the calipers aligned with the internal borders of the medial and lateral walls of the ventricle; this should be at the level of the glomus of the choroid plexus. Fetal ventriculomegaly is characterized by a dilatation of the lateral ventricles, with or without dilatation of the third or fourth ventricles. There is no internationally agreed upon terminology, but Table 1.1 shows two systems used. It can affect one (unilateral) or both ventricles (bilateral).

Table 1.1 *Different classifications of ventriculomegaly used in the literature*

Normal measurement: <10 mm	Normal measurement: <10 mm
Mild ventriculomegaly: 10–12 mm Moderate ventriculomegaly: 12–15 mm	Mild ventriculomegaly: 10–15 mm
Severe ventriculomegaly: >15 mm	Severe ventriculomegaly: >15 mm

When mild or moderate, it may be due to normal variation, but it also represents a common endpoint of various pathologic processes. As the outcome and prognosis depend on the underlying cause, investigations are aimed at determining this.

Apart from the underlying etiology and the presence of associated structural/chromosomal anomalies, post-natal outcome depends on the progression of ventricular dilatation.

In isolated abnormality (absence of pathology and progression), the outlook for mild ventriculomegaly (<15 mm) is good with >95% of babies having normal neurodevelopment.

Associated major anomalies (cranial and extracranial) can be present in 50% of fetuses with VM, of which the most common are agenesis of the corpus callosum, posterior fossa malformations, and open spina bifida. The rate of associated anomalies in severe VM is higher than in mild VM.

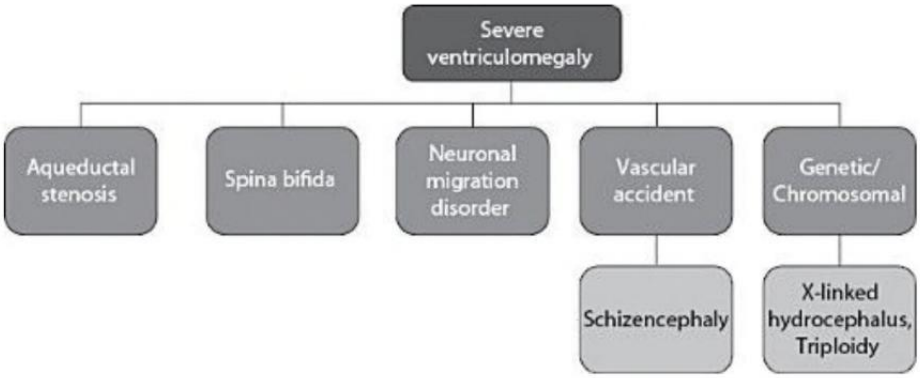
Investigations needed

The prognosis is highly dependent on:

- Other fetal anomalies
- The cause of the ventriculomegaly
- Progression of the ventriculomegaly

Investigations are therefore centered around these issues:

- Optimal imaging is needed: undertake (or refer for) detailed multiplanar neurosonography; transvaginal scanning is helpful. This should include assessment of:
  - The entire ventricular system
  - The periventricular zone/signs of hemorrhage
  - The pericerebral spaces and cortical fissures
- Consider fetal MRI.
- Review nuchal translucency and any previous chromosomal anomaly screening or prenatal diagnosis results.
- Consider karyotype by amniocentesis.
- Maternal serology for toxoplasma/CMV infection.
- Platelet group of parents to look for alloimmune thrombocytopenia should be considered if there is any possibility there could be intracranial bleeding.
- Follow up with further scans in the third trimester to assess for progression: It is important to explain to parents that prenatal imaging cannot completely rule out associated anomalies and that some may become evident only later in pregnancy or even at birth. The rate of associated anomalies detected only at follow-up scan is around 7%; progression of



Algorithm 1.2 *Classifications of severe ventriculomegaly.*

Figure 1.2 *Severe ventriculomegaly.*

Figure 1.1 *Moderate ventriculomegaly.*