Polyhydramnios

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

What exactly is polyhydramnios or hydramnios?

Polyhydramnios (hydramnios) means the presence of an excess amount of amniotic fluid in the amniotic sac (or 'bag of waters'). This is evaluated according to the gestational age of the fetus (meaning how far along the pregnancy is). It is a fairly common condition, affecting about 1-4% of all pregnancies. It occurs during the 2nd and 3rd trimesters of pregnancy and is a condition that is linked with increased perinatal morbidity and mortality. Usually its diagnosis is incidental during a routine pregnancy scan. Its causes are numerous and can be any one of the following:

- Idiopathic (meaning arising spontaneously or of unknown cause – occurring in one third of all cases)
- Gestational diabetes mellitus
- Anatomic fetal disorders and fetal hydrops
- Genetic fetal disorders (mostly trisomy 21,18 and 13)
- Multiple gestation and twin-twin transfusion syndrome (TTTS)
- Fetal anemia
- Rhesus isoimmunisation
- Infections (toxoplasma, CMV, rubella, parvovirus, syphillis)
- Maternal metabolic disorders (such as hypercalcemia)
- Other rare fetal or maternal conditions (such as Bartter syndrome, Dandy Walker syndrome, maternal lithium use)

The likelihood of there being an underlying pathologic condition increases according to the severity of the polyhydramnios. That is to say that while mild polyhydramnios is usually idiopathic, when the polyhydramnios is either moderate or severe, an underlying disease will typically be found.

Fetal malformations associated with polyhydramnios are mainly:

- Central nervous system defects (e.g. anencephaly and neural tube defects)
- Gastrointestinal system defects (e.g. atresia or obstruction)
- Abdominal wall defects
- Cardiovascular system defects (e.g. high cardiac output, tumors)
- Musculo-skeletal system defects (e.g. achondroplasia, dwarfism)
- Urogenital system defects (e.g. tumors)
- Cleft lip and cleft palate
- Trisomy 21, 18 and 13

How can ultrasound help in the diagnosis of polyhydramnios?

Although an ultrasound scan needs subjective assessment by the doctor, it is nevertheless the most important diagnostic test for polyhydramnios. This is because it allows direct evaluation of the volume of amniotic fluid. It also permits measurement of the deepest pocket of amniotic

fluid and determination of the amniotic fluid index: in this way, the classification of mild, moderate or severe can be achieved.

In polyhydramnios, during the 2nd trimester the ratio between the amniotic fluid and the baby is greater than 1 to 1, whereas by the 3rd trimester an excessive amount of amniotic fluid is observed between the baby and the uterine walls. Two other important sonographic measurements can be taken for the evaluation of amniotic fluid volume. These are: 1) "deepest pocket" (DP) evaluation, this being a vertical measurement within the largest amniotic fluid pocket, free of the umbilical cord and fetal parts; 2) "amniotic fluid index" (AFI), which is the sum of the deepest vertical measurements within each quadrant (when the uterine cavity is divided into 4 equal segments). A DP greater than 8 cm and an AFI greater than 20 cm are defined as polyhydramnios.

Will I need any other tests?

If polyhydramnios is identified, then the following examinations need to be performed:

- Glucose tolerance test to rule out maternal diabetes mellitus
- Rhesus isoimmunisation test if there is suspicion for fetal anemia and fetal hydrops
- Screening for congenital infections (TORCH viruses)
- Amniocentesis and karyotyping in the event that additional fetal malformations are present

Is there anything else that ultrasound can tell me about polyhydramnios?

Ultrasound, or sonography, examination can also diagnose multiple gestation (i.e. the presence of two or more embryos in the uterus), the chorionicity of the pregnancy (to find out if the embryos share a placenta or have different placentas) and the number of gestational sacs. Ultrasound can also identify any fetal defects associated with polyhydramnios. Finally, it can diagnose a possible pregnancy complication sometimes associated with polyhydramnios, namely intrauterine growth restriction (IUGR, when a fetus is very small for the week of pregnancy), as well as fetal macrosomia (when a fetus is very large for the week of pregnancy) which may result from gestational diabetes.

What does it mean to have polyhydramnios?

Polyhydramnios can result in:

- Preterm labour and premature rupture of the membranes
- Maternal discomfort and dyspnea (difficulty breathing) due to uterine overdistension, i.e over-expansion.
- Placental abruption and umbilical cord prolapse
- Postpartum hemorrhage
- Fetal malpresentations and increased possibility of cesarean delivery

What is the goal of treatment?

The goal of treatment is both to prevent fetal complications and to relieve maternal symptoms that are brought about by the excessive amount of amniotic fluid. While mild polyhydramnios is normally managed in a conservative manner (i.e. bed rest and monitoring), more severe cases might require intervention to reduce the excess amniotic fluid. You may be given steroid injections after 24 weeks to protect the baby, if the baby is likely to be born premature.

The most common treatment options are:

- Medications: Indomethacin and sulindac are prostaglandin synthetase inhibitors that reduce amniotic fluid volume,. This is achieved after approximately a week of therapy.

- Therapeutic amniocentesis (amnioreduction): This means the aspiration of an amount of amniotic fluid using the same procedure as amniocentesis.

Also of great importance is the management of the maternal or fetal causes of polyhydramnios, if the cause is known. One example is the management of blood glucose levels in the case of gestational diabetes. If severe IUGR is identified, and provided that fetal lung maturity is seen to be adequate, labour induction can also be considered.

What is the prognosis of polyhydramnios?

The prognosis of mild idiopathic polyhydramnios is generally excellent. When a cause of polyhydramnios is identified, the prognosis depends much more on that cause, and the degree of severity of polyhydramnios.

Are there things that ultrasound cannot tell me about polyhydramnios?

As mentioned above, the ultrasound scan is a subjective diagnostic tool used for the evaluation of amniotic fluid volume and, therefore, its sensitivity may be affected by a number of factors, including body-mass index, the mother's use of skin solutions, fetal position in the uterus, as well as the examiner's experience and ability. This means that amniotic fluid volume could possibly be either overestimated or underestimated. Also, in a few cases, co-existing fetal malformations cannot be identified—which results in a mistaken diagnosis that the existing polyhydramnios does not result from other underlying pathological conditions. This is why routine monitoring is essential, even when polyhydramnios is the only finding. Lastly, ultrasound scan cannot precisely predict the final pregnancy outcome and possible perinatal complications, nor can it determine the clinical outcome of a fetal malformation after the baby's birth.

Are there any other important tips I should know?

As mentioned, the reliability of the diagnosis depends on the examiner's experience and ability. Therefore, our recommendation is that sonographic exams be carried out in a prenatal

center staffed by highly trained and experienced sonographers and physicians to avoid any critical oversights, for example of the presence of underlying fetal malformations.

What other questions should I ask?

The following are questions you could ask the sonographer:

- How definite is the diagnosis of polyhydramnios?
- Is the polyhydramnios isolated or are there any coexisting pathological conditions?
- Just how severe is it?
- Is fetal development normal?
- Should I have any additional tests?
- Should I repeat the ultrasound scan, and, if so, how often?
- What are the risks for my pregnancy and labour due to polyhydramnios?

Last updated September 2019