Oligohydramnios

Oligohydramnios is a condition in pregnancy where there is too little amniotic fluid around the baby. It can be caused by certain fetal urinary tract abnormalities, uteroplacental insufficiency or premature rupture of membranes. Diagnosis is made via ultrasound which shows an amniotic fluid index less than five cm. Complications of oligohydramnios include spontaneous abortion, intrauterine growth restriction, musculoskeletal abnormalities and pulmonary hypoplasia. There is no long term treatment for oligohydramnios, but management may be aimed at treating the underlying cause. If the pregnancy is viable, delivery may be a treatment option.



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Decreased Amniotic Fluid
Down-arrow Onion Fluid
Oligohydramnios is defined as an amniotic fluid volume that is less than expected for gestational age. On ultrasound (US), oligohydramnios can be quantitatively defined as amniotic fluid index less than five cm. When there is a decreased volume of amniotic fluid, normal fetal growth and movement are restricted, and complications can arise.

Etiologies

Renal Agenesis (Fetal Urinary Tract Abnormalities)
Fetus with Kidney Abnormalities
Amniotic fluid is largely comprised of fetal urine. Urinary tract abnormalities, such as fetal renal agenesis (absence of one or both kidneys) or fetal genitourinary obstruction, can result in decreased fetal urine output. Decreased fetal urine output can cause oligohydramnios.

Uteroplacental Insufficiency
Uterus-placenta-present Broken
Another cause of oligohydramnios is uteroplacental insufficiency due to conditions such as preeclampsia, placental thrombosis, maternal hypertension or maternal diabetes. In these conditions, the placenta may not provide enough blood and nutrients to the fetus for appropriate recycling of amniotic fluid.

Premature Rupture of Membranes (PROM)
Premature Rupture of Membranes
Premature rupture of membranes is defined as the rupture of the fetal membranes (amniotic sac) more than one hour before the onset of labor.

Diagnosis

Ultrasound
Ultrasound-machine
Ultrasound is currently the best way to measure amniotic fluid volume and to diagnose oligohydramnios. An amniotic fluid index (AFI) less than five cm, or the maximum deepest vertical pocket of fluid less than two cm at term found on ultrasound is diagnostic.

Amniotic Fluid Index (AFI) < 5 cm
Onion Fluid Less-than (5) Hand
During an ultrasound, AFI is determined by dividing the uterus into four quadrants with the umbilicus as the midpoint, and taking the sum of deepest vertical pocket in each quadrant. An AFI less than five cm is diagnostic of oligohydramnios.

Complications

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Spontaneous Abortion

Spartan Aborting-fetus

Complications of oligohydramnios may include spontaneous abortion. Oligohydramnios in the first trimester usually results in spontaneous abortion. In the third trimester, umbilical cord compression due to decreased amniotic fluid can result in fetal heart rate abnormalities and fetal distress.

Pulmonary Hypoplasia

Lungs and Hippo-plates

Bilateral renal agenesis causing oligohydramnios results in Potter sequence. In Potter sequence, decreased amniotic fluid causes compression of the fetus by the uterine wall, resulting in features such as clubfoot, compressed facial features and pulmonary hypoplasia.

Musculoskeletal Abnormalities

Muscle-skeleton with Abnormalities

Decreased amniotic fluid may result in intrauterine restraint causing musculoskeletal abnormalities including clubfoot and facial distortion.

Intrauterine Growth Restriction (IUGR)

Restrictive-belt on Uterus

When there is not enough amniotic fluid, IUGR may occur. IUGR is a term used to describe a fetus that cannot reach its growth potential due to genetic or environmental factors, such as multiple gestations, placenta previa, maternal systemic disease and maternal drug abuse. IUGR is defined as weight below the tenth percentile for gestational age.

Treatment

Treat Underlying Cause

Treat Underlying Attacker

There is no effective long term treatment for oligohydramnios. Oftentimes, treatment is aimed at identifying the underlying cause and if possible, treating it.

Delivery (When Viable)

Stork Delivering-baby

For women in the third trimester with a viable pregnancy diagnosed with oligohydramnios, delivery is often recommended. If fetus is not determined to be viable, hydration and bed rest are recommended.

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