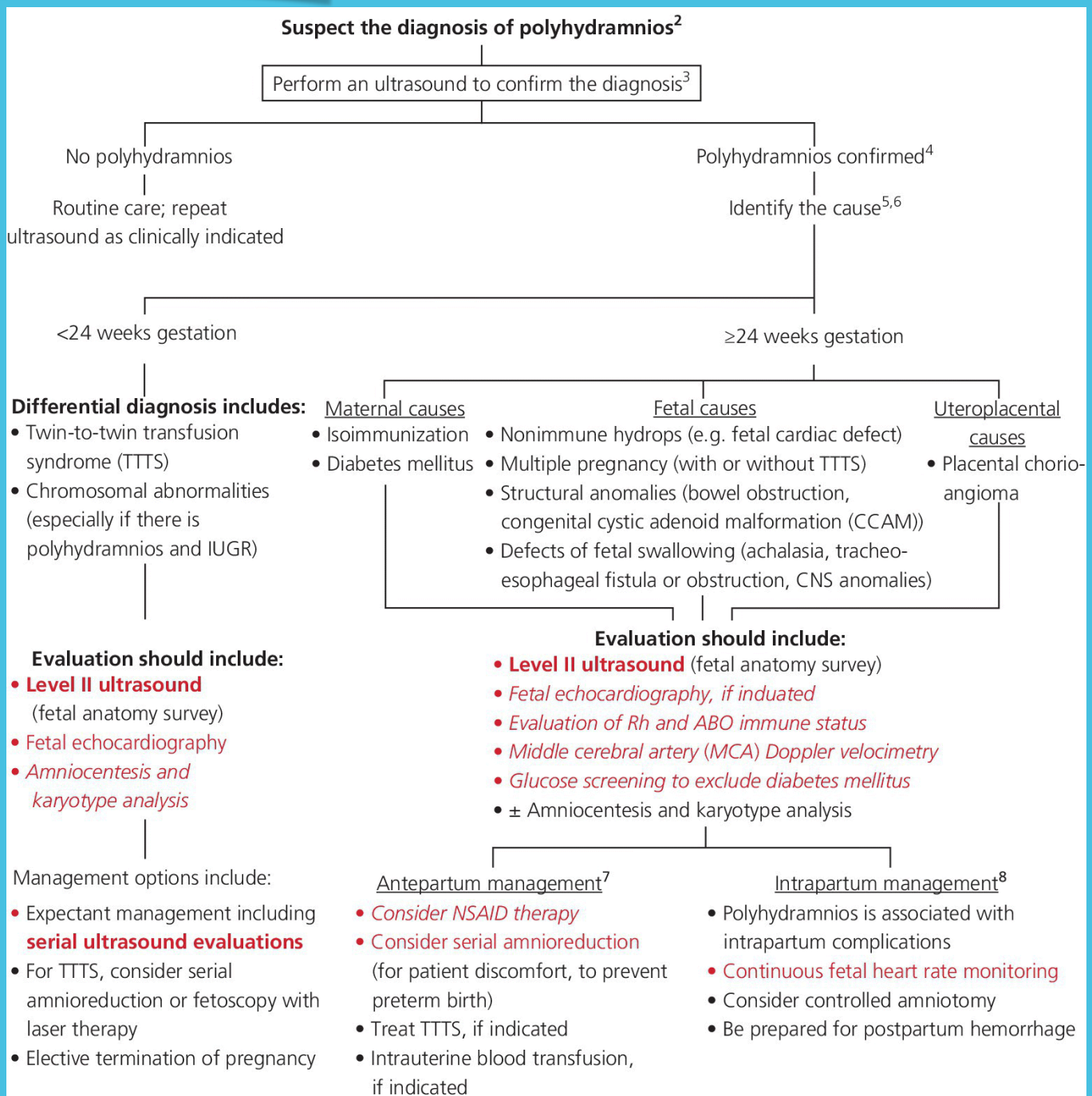




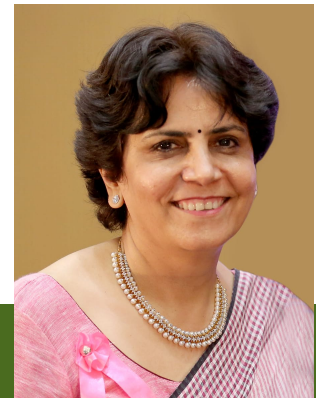
Learn simply

Polyhydramnios

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1. The amnion is a thin fetal membrane that begins to form on the eighth day postconception as a small sac covering the dorsal surface of the embryonic disc.
2. The amnion gradually encircles the growing embryo. It is filled with amniotic fluid which has a number of critical functions:
 - (i) it cushions the fetus from external trauma;
 - (ii) it protects the umbilical cord from excessive compression;
 - (iii) it allows unrestricted fetal movement, thereby promoting the development of the fetal musculoskeletal system;
 - (iv) it contributes to fetal pulmonary development;
 - (v) it lubricates the fetal skin;
 - (vi) it prevents maternal chorioamnionitis and fetal infection through its bacteriostatic properties; and
 - (vii) it assists in fetal temperature control.
3. Amniotic fluid volume is maximal at 34 weeks (750-800 mL) and decreases thereafter to 600 mL at 40 weeks.
4. The amount of fluid continues to decrease beyond 40 weeks. Amniotic fluid volume is a marker of fetal well-being. Normal amniotic fluid volume suggests that uteroplacental perfusion is adequate. Abnormal amount of amniotic fluid volume is associated with an unfavorable perinatal outcome.
5. Polyhydramnios refers to an abnormally large amount of amniotic fluid surrounding the fetus. It is seen in 0.5-1.5% of all pregnancies. It should be suspected if the fundal height is significantly more than expected for gestational age.



1. Ultrasonography is a more accurate method of estimating amniotic fluid than measurement of fundal height. Several ultrasound techniques are described, including: (i) subjective assessment of amniotic fluid volume; (ii) measurement of the single deepest pocket (free of umbilical cord); (iii) Amniotic Fluid Index (AFI), which is a semi-quantitative method for estimating amniotic fluid volume which minimizes inter- and intra-observer error. AFI refers to the sum of the maximum vertical pocket of amniotic fluid (in cm) in each of the four quadrants of the uterus. Normal AFI beyond 20 weeks' gestation ranges from 5-20 cm.
2. Polyhydramnios is an ultrasound diagnosis. It is defined sonographically in a singleton pregnancy as either a total amniotic fluid volume >2 L, a single vertical pocket ≥ 10 cm, or an AFI measurement >95 th percentile for gestational age or >20 cm at term. In twins, a single vertical pocket ≥ 10 cm is used to define polyhydramnios.]
3. Maintenance of amniotic fluid volume is a dynamic process that reflects a balance between fluid production and absorption. Prior to 8 weeks' gestation, amniotic fluid is produced by the passage of fluid across the amnion and fetal skin (transudation). At 8 weeks, the fetus begins to urinate into the amniotic cavity. Fetal urine quickly becomes the primary source of amniotic fluid production. Near term, 800-1000 mL of fetal urine is produced each day.
4. The fetal lungs produce some fluid (300 mL per day at term), but much of it is swallowed before entering the amniotic space. Prior to 8 weeks' gestation, transudative amniotic fluid is passively reabsorbed. At 8 weeks' gestation, the fetus begins to swallow. Fetal swallowing quickly becomes the primary source of amniotic fluid absorption.



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1. Near term, 500-1000 mL of fluid is absorbed each day by fetal swallowing. A lesser amount of amniotic fluid is absorbed through the fetal membranes and enters the fetal bloodstream. Near term, 250 mL of amniotic fluid is absorbed by this route every day. Small quantities of amniotic fluid cross the amnion and enter the maternal bloodstream (10 mL per day near term).
2. Every effort should be made to identify the cause. However, no cause will be found in 50-60% of cases of polyhydramnios.
3. Uterine overdistension may result in maternal dyspnea or refractory edema of the lower extremities and vulva. It can also lead to preterm PROM as well as premature labor and delivery. Antepartum treatment options are limited. Nonsteroidal anti-inflammatory drugs (NSAID) (such as indomethacin) can decrease fetal urine production, but may also cause premature closure of the ductus arteriosus in utero especially if given after 32 weeks' gestation, leading to persistent pulmonary hypertension. Removal of fluid by amniocentesis is only transiently effective as fluid will typically reaccumulate within 24-72 hours. Treatment of the underlying disorder (such as laser therapy for TTTS or intrauterine transfusion for pregnancies complicated by isoimmunization and severe fetal anemia) may reverse the polyhydramnios.
4. During labor, polyhydramnios can result in fetal malpresentation, dysfunctional labor, and/or postpartum hemorrhage. Controlled amniotomy may reduce the incidence of complications resulting from rapid decompression of the uterus (such as placental abruption and cord prolapse).



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