Frimley Health
NHS Foundation Trust

Diagnosis and Management of Polyhydramnios

Key Points

- Polyhydramnios is defined as Deepest Vertical Pool (DVP) ≥10cm.
- Most of the time is unexplained, but can be caused by maternal, fetal or placental conditions.
- Polyhydramnios is classified as mild, moderate or severe.
- Further investigations include glucose tolerance test and blood test for toxoplasmosis/CMV infection.
- Referral to Fetal Medicine Unit is indicated in cases of suspected fetal abnormality, severe polyhydramnios or concerns about fetal movements.
- Consider induction of labour at 39-40 weeks.
- Routine postnatal neonatal check and advice to parents about any feeding difficulties.

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Contents

Abbreviations

AFI	Amniotic fluid index
ANC	Antenatal Clinic
CMV	Cytomegalovirus
DAU	Day Assessment Unit
DVP	Deepest Vertical Pool
FADS	Fetal Akinesia Dyskinesia Syndrome
FGR	Fetal Growth Restriction
IM	Intramuscular injection
IOL	Induction of Labour
iu	International unit
LSCS	Lower Segment Caesarean Section
MAC	Maternity Assessment Centre
mcg	Microgram
NIPE	Newborn and Infant Physical Examination
OGTT	Oral glucose tolerance test
PPH	Postpartum Haemorrhage
PPROM	Preterm prelabour rupture of membranes
PTB	Preterm Birth
TOPS	Twin Oligohydramnios-Polyhydramnios Sequence

INTRODUCTION

Polyhydramnios is defined as excessive accumulation of amniotic fluid, based on ultrasound evidence of a constant value of amniotic fluid index (AFI) ≥ 25 cm or deepest vertical pool (DVP) ≥ 10 cm across all gestational ages. The reported incidence of this condition is between 0.2 and 3.9%. Clinical suspicion is based on rapidly increasing symphysis fundal height measurements above the 90th centile on customised growth charts. Despite extensive prenatal assessment, in 60-70% of pregnancies, polyhydramnios remains unexplained.

In most cases, polyhydramnios develops late in the second or in the third trimester of pregnancy. Acute polyhydramnios at 16–22 weeks is mainly seen in association with twin-to-twin transfusion syndrome.

Polyhydramnios has been associated with a variety of adverse pregnancy outcomes including congenital anomalies, preterm prelabour rupture of membranes (PPROM), preterm Birth (PTB), placental abruption, cord prolapse and admission to neonatal unit. Maternal complications include increased risk of postpartum haemorrhage (PPH) and lower segment caesarean section (LSCS). There is a two- to five-fold increase in perinatal mortality. Perinatal morbidity and mortality are higher if, polyhydramnios develops at an earlier gestation.

AETIOLOGY

A wide variety of maternal, fetal and placental conditions are associated with polyhydramnios.

Maternal

- Uncontrolled diabetes mellitus (pre-gestational and gestational)
- Rhesus and other blood group isoimmunisation leading to immune hydrops
- Drug exposure, such as lithium leading to fetal diabetes insipidus.

Fetal

- Impaired amniotic fluid swallowing: trachea oesophageal fistula, oesophageal atresia, duodenal and intestinal atresia.
- Increased urine output: macrosomia, high output cardiac states, renal abnormalities and osmotic fetal diuresis.
- Chromosomal and genetic abnormalities: trisomies, Noonan syndrome, Bartter syndrome and Greig cephalopolysundactylt, Beckwith-Wiedemann syndrome and Fetal Akinesia Dyskinesia Syndrome (FADS).
- Congenital infections: parvovirus B19, toxoplasma, rubella, cytomegalovirus and herpes simplex.
- Fetal tumours: teratomas, nephromas, neuroblastoma, and haemangioma[6].

Placental

- Multiple gestations, particularly monochorionic twins (may present as TOPS).
- Placental tumours such as chorioangiomas and metastatic neuroblastoma are associated with an increased incidence of polyhydramnios in approx. 30%.
- Unexplained: In 60-70% of cases no maternal, placental or fetal cause is found. It is a diagnosis of exclusion and it should be noted that approximately 10 % of these are found to have an anomaly after birth, usually gastrointestinal atresia.

CLASSIFICATION AND DIAGNOSIS

Accurate amniotic fluid volume (AFV) assessment is required, with ultrasound methods of deepest vertical pocket (DVP) and amniotic fluid index (AFI) preferred. The DVP measurements refer to the vertical dimension of the largest pocket of amniotic fluid which must not contain umbilical cord or fetal extremities and which is measured at a right angle to the uterine contour. This requires an assessment of the entire cavity before measurement.

Using DVP measurement the following definitions apply:

a. Mild Polyhydramnios (80%) DVP measuring 10.0 to 12.9cms
b. Moderate Polyhydramnios (15%) DVP measuring 13.0 to 14.9cms
c. Severe Polyhydramnios (5%) DVP >=15.0cms

Using AFI measurement the following definitions apply:

d. Mild Polyhydramnios (80%) AFI measuring 24.0 to 29.9cms
e. Moderate Polyhydramnios (15%) AFI measuring 30.0 to 34.9cms
f. Severe Polyhydramnios (5%) AFI >=35.0cms

ASSESSMENT AND INVESTIGATIONS

Rapidly increasing symphysis fundal height measurements, above the 90th centile on customised growth charts, may be indicative of polyhydramnios. A detailed ultrasound examination is important to exclude congenital fetal infection (such as hydrops/ascites, intracranial calcifications, hydrocephalus/microcephaly and hepatosplenomegaly) or any fetal abnormalities.

Further tests include:

- Oral glucose tolerance test (gestational diabetes) OGTT or HbA1c and random blood glucose if ≥ 36+0 and delivery planned after ≥ 38+0 weeks
- Blood test to exclude fetal infection **ONLY** in cases of moderate or severe polyhydramnios, where no other cause has been identified. The request should include test **ONLY** for toxoplasmosis and cytomegalovirus. Testing for parvovirus should be requested, after discussion with a Fetal Medicine Consultant.
- Check maternal blood-group status for any atypical red cell antibodies (booking and 28 weeks).
- In cases of severe polyhydramnios, transvaginal ultrasound scan should be offered to assess cervical length and quantify risk of preterm labour and need for administration of steroids.

ADVERSE OUTCOMES RELATED TO POLYHYDRAMNIOS

Adverse outcomes related to polyhydramnios

- Maternal respiratory compromise
- Increased chance of fetal anomaly
- Prelabour rupture of membranes
- Umbilical cord prolapse
- Fetal malposition
- Macrosomia complicated by shoulder dystocia
- Placental abruption
- Longer second stage labour
- Postpartum haemorrhage due to uterine atony

INDICATIONS FOR REFERRAL TO THE FETAL MEDICINE UNIT

A referral to Fetal Medicine Unit is indicated in case of:

- Suspected fetal anomaly
- Signs of congenital fetal infection (such as hydrops/ascites, intracranial calcifications, hydrocephalus/microcephaly and hepatosplenomegaly)
- Small for gestational age (<10th centile and/or restricted growth) with moderate polyhydramnios
- Concerns with fetal movement and rapid onset of moderate polyhydramnios (could indicate muscular dystrophy)
- Severe polyhydramnios (DVP >=15.0cms)

MANAGEMENT

- Transfer care of all women with diagnosed polyhydramnios to consultant led care. The scan needs to be reviewed in DAU/MAC and then referral to antenatal clinic, should be arranged.
- Antenatal management and surveillance as per flowchart and it depend on the underlying cause and patient symptoms.
- On diagnosis of polyhydramnios a detailed scan should be performed, with focus on stomach, bowel, kidneys, spine and heart due to the association with VACTERL anomalies (vertebral defects, anal atresia, cardiac defects, tracheooesophageal fistula, renal anomalies, and limb abnormalities).
- At each ANC appointments, enquire whether mothers are symptomatic, e.g., have regular tightenings or shortness of breath and perform an abdominal palpation (to assess and document fetal lie, engagement, how tense the uterus feels).
- Advise women diagnosed with polyhydramnios of the small risk of cord prolapse if the membranes rupture, increased risk of premature labour and placental abruption. The patient must therefore contact triage if suspicions of labour, rupture of membranes or vaginal bleeding.
- Symptomatic treatments include amnioreduction, this should only be performed by a Fetal Medicine Consultant, with the necessary expertise, and when the pregnant woman is experiencing respiratory complaints and restrictive diaphragmatic movement related to polyhydramnios.

- Indomethacin therapy is no longer recommended by the Society of Maternal-Fetal Medicine for the sole purpose of decreasing amniotic fluid due to its association with a number of perinatal complications for the baby.
- Consider admission of women with unstable/transverse/breech lie from 38 weeks gestation
- For mild/moderate polyhydramnios individual plan of care, depending on risk factors identified/ head engagement. Consider induction of labour at 39-40 weeks. For cases of severe polyhydramnios, Fetal Medicine Consultant to arrange plan of delivery, depending on additional risk factors.
- In cases of severe polyhydramnios admitted for induction of labour, a controlled ARM should be performed by a doctor or with a doctor present due to the risk of cord prolapse.
- Active 3rd stage of labour with Syntometrine 500mcg/5iu IM. In cases of severe polyhydramnios or signs of uterine atony when the placenta is delivered, administer oxytocin infusion.
- Routine NIPE and patient information leaflet to be given to the parents to monitor for any feeding difficulties.
- In cases of severe polyhydramnios, neonatal review must take place prior discharge home.
- Alert neonatal team if any feeding difficulties at birth.

FLOWCHART OF MANAGEMENT

Polyhydramnios

Mild
(DVP 10 - 12.9cms)

Refer to DAU/MAC
Screen for GDM (OGTT or HbA1c and RBS as per diabetes guideline)

Moderate
(DVP 13 - 14.9cms)

Refer to DAU/MAC
Screen for GDM (OGTT or HbA1c and RBS as per diabetes guideline) and blood tests for toxoplasmosis and CMV

Severe (DVP ≥ 15.0cms) or:
- suspected fetal anomaly
- signs of congenital fetal infection (such as hydrops/ascites, intracranial calcifications, hydrocephalus/microcephaly and hepatosplenomegaly)
- small for gestational age (<10th centile and/or restricted growth)
- concerns with fetal movement and rapid onset of polyhydramnios (could indicate muscular dystrophy)

Refer to Fetal Medicine

Arrange Antenatal Clinic and Serial growth scans every 3 weeks

Mild/moderate polyhydramnios:
Individual plan of care,
consider IOL 39-40 weeks
Severe polyhydramnios:
Fetal Medicine Consultant to arrange plan of delivery, depending on the additional risk factors/findings on USS

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This guideline is for use in Frimley Health Trust hospitals only. Any use outside this location will not be supported by the Trust and will be at the risk of the individual using it.

Version History

Version	Date	Guideline Lead(s)	Status	Comment
1.0	April 2022	Consultant Obstetrician & Gynaecologist	Final	First cross site version, Ratified at OCGC meeting 25.04.2022
2.0	August 2025	A Kermack, Consultant Obstetrician & Gynaecologist, FPH	Final	Scheduled review.

Related Documents

Document Type	Document Name
Patient Leaflet	Polyhydramnios
Patient Leaflet	Polyhydramnios Postnatally