POLYHYDRAMNIOS

INTRODUCTION

Background

Polyhydramnios occurs in around one percent of pregnancies in the general obstetric population.

The most common cause of severe polyhydramnios are fetal anomalies (often associated with an underlying genetic diagnosis). Maternal diabetes, multiple gestation and idiopathic factors are more often associated with milder cases.

The degree of the excess amniotic fluid can range from mild (66% of cases), to moderate (22%), and severe (12%).[1]

DEFINITION

AETIOLOGY

The likelihood of identifying the aetiology of polyhydramnios prenatally correlates with the severity of the condition. An underlying disease is only detected in 17% of cases in mild polyhydramnios, in contrast to 91% of cases in moderate to severe polyhydramnios.

- **Fetal malformation and genetic anomalies**
  - Well-known malformations which impair fetal swallowing and gastrointestinal absorption include oesophageal atresia, duodenal atresia
- **Maternal diabetes**
- **Multiple pregnancies**
- **Fetal anaemia**
- **Other causes**, eg.
  - Viral infections (parvovirus B19, rubella, cytomegalovirus, toxoplasmosis, syphilis infections, but the strength of this correlation is unknown)
  - Maternal hypercalcaemia
  - Maternal drug use (eg. lithium)

DIAGNOSIS

The diagnosis of polyhdramnios is based upon ultrasound assessment of the amniotic fluid volume. This may be qualitative or quantitative, but generally has a strong subjective component.

The following thresholds are used for polyhydramnios at the CDHB:

- Single deepest pocket ≥ 10 cm
- Amniotic fluid index (AFI) ≥ 25 cm

It is important to note that the goal of amniotic fluid volume measurement is to detect underlying pathologies associated with poor outcomes. A systematic review of randomized studies found no evidence that one method was superior to another [(2).]

Reference ranges below for interest:

- Single deepest pocket measurement
  - normal = 3-8 cm
  - mild polyhydramnios = 10-11 cm
  - moderate polyhydramnios = 12-15 cm
  - severe polyhydramnios = > 16 cm
- The 4-quadrant method/amniotic fluid index (AFI)
  - normal = 8-24 cm^3
  - mild polyhydramnios = 25-30 cm
  - moderate polyhydramnios = 30.1 – 35 cm
  - severe polyhydramnios = > 35.1 cm^{15}

PROGNOSIS

Polyhydramnios is independently associated with increased perinatal morbidity and mortality.[4]

The prognosis varies depending on the cause and severity of the polyhydramnios. Small for gestational age (SGA) fetuses with polyhydramnios generally have the poorest prognosis.

Overall perinatal mortality in pregnancies with polyhydramnios is increased two- to five-fold compared to pregnancies without polyhydramnios.[3]

Obstetric complications include:

- Maternal dyspnoea, abdominal discomfort, uterine irritability
- Preterm labour, premature rupture of membranes, preterm birth
- Fetal malposition
- Umbilical cord prolapse
- Placental abruption following rupture of membranes
- Postpartum haemorrhage
- Higher rates of caesarean sections for fetal indications

Neonatal complications:[5]

- Higher rates of admissions to neonatal intensive care units
- Higher birth weight
- Higher rates of congenital malformations and neurological disorders.[6]

MANAGEMENT

Following diagnosis, consider:

- Detailed anomaly scan
  - The anomalies most commonly missed are tracheoesophageal fistula, cardiac septal defects and cleft palate.
  - In the presence of fetal anomaly, refer women to FMU as per Referral Guideline. The prevalence of aneuploidy in fetal anomalies was found to be 10% in a large study.[7]
- Exclude maternal gestational diabetes
  - Oral glucose tolerance test
- If fetal anaemia or fetal hydrops suspected, exclude
  - Immunological causes (maternal blood group, Rhesus factor, screening for red cell antibodies)
  - Fetomaternal haemorrhage (Kleihauer)
  - Acute Parvovirus infection
  - Haemoglobinopathy
  - TORCH screens are not indicated for women who have polyhydramnios with an otherwise normal ultrasound scan given the low prevalence of TORCH infections and the limited implications on management.[8]

ANTENATAL SURVEILLANCE

No randomised trials have evaluated whether pregnancies complicated by idiopathic polyhydramnios benefit from any method of antenatal surveillance, therefor no additional monitoring is required.

Where a cause has been identified, antenatal surveillance to be directed accordingly.

INFORMATION PROVIDED TO WOMEN

- Inform LMC immediately on spontaneous rupture of membranes.
- Inform LMC at onset of regular uterine contractions, early admission in labour is advised.
- Women to be informed about knee-chest positioning in the event that membranes rupture and there is evidence of cord prolapse Cord Prolapse (WCH/GLM0039).
- If this occurs outside of the hospital, advise woman to call 111 for immediate transfer to Christchurch Women's Hospital.

MANAGEMENT OF LABOUR

- Women with pregnancies complicated by moderate- to severe polyhydramnios should labour and birth at CWH with electronic fetal monitoring (EFM).
- Frequent assessment of fetal position to be undertaken during labour to confirm maintenance of vertex position.

- Rupture of membranes can lead to acute uterine decompression with risk of cord prolapse or placental abruption.
- Artificial rupture of membranes is only be done under controlled conditions.
- It is important to rule out cord prolapse/presentation and confirm presentation following rupture of membranes.
- Active management of the third stage of labour is advised due to the increased risk of post-partum haemorrhage
- Neonatal team to be in informed of a birth in the case of moderate and severe polyhydramnios or if any fetal abnormality.

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