



Prevalence and Neonatal Outcome by Ultrasonically Detected Polyhydramnios

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ABSTRACT

Objectives: To diagnose polyhydramnios ultrasonically and their relationship with perinatal outcome and also to find out the cause and to detect any foetal congenital anomaly.

Methods: The study group consisted of 100 pregnancies with poly-hydramnios as diagnosed by ultrasound during the period of 1 year January 2013 to December 2013. Polyhydramnios is diagnosed by ultrasound when AFI is more than the 95th percentile for the gestational age.

Results: Total number of deliveries in one years was 10045. Total number of polyhydramnios in one year was 147 out of which 100 cases of polyhydramnios were studied. The incidence of polyhydramnios was 1.4% during this period. Most of the cases were mild polyhydramnios (84%) and idiopathic (57%). Preterm labour and CPD were the major maternal complications during pregnancy. 61% babies were alive and perinatal death was 31%.

Interpretation and Conclusion: Ultrasonography is the best means for early detection polyhydramnios as a complication of pregnancy and it is also useful for early detection of foetal congenital anomalies.

Keywords: Polyhydramnios, amniotic fluid, ultrasonography.

Introduction

Perinatal morbidity and mortality are significantly increased with polyhydramnios Fetal conditions that are associated with polyhydramnios include major congenital anomalies (open neural tube defects ,upper gastrointestinal tract obstruction or malformation etc.) and both the immunologic

and non-immunologic forms of hydrops foetalis. Maternal medical conditions are also known to be associated with polyhydramnios and subsequent altered perinatal outcome (eg. Diabetes mellitus). Pre-eclampsia, malpresentation, premature rupture of membrane, preterm labour and accidental haemorrhage are the very well

known complications of polyhydramnios during pregnancy and cord prolapse, uterine inertia, retained placenta and postpartum haemorrhage are the expected complications of polyhydramnios during labour. So by diagnosing these cases as early as possible, we can prevent these maternal complications.¹

If maternal complications are associated with foetal anomalies, we can even terminate the pregnancy as early as possible. Accurate antepartum estimation of amniotic fluid volume by clinical means alone is exceedingly difficult. Amniotic fluid is easily identified by current diagnostic ultrasound methods. By application of ultrasound method it is now possible to measure the amount of amniotic fluid present, particularly the amniotic fluid index (AFI).

Today polyhydramnios (also known as hydramnios) can be detected with USG before rupture of the membranes². Anatomically Polyhydramnios is defined as a state where liquor amni exceeds >2000 ml during pregnancy. Its incidence varies from 0.2% to 3.3% and depends on how this abnormality is defined³.

Ultrasonically Polyhydramnios defined as AFI is more than the 95th percentile of gestational age.

The purpose of the study is to determine the relationship between amniotic fluid volume as determined by ultrasound studies and perinatal outcome.

Material & Methods

The present study was conducted in the Department of Obstetrics and Gynaecology, J.L.N. Medical College, Rajkiya Mahila Chikitsalya, Ajmer during the period of one year January 2013 to December 2013. 100 cases of Polyhydramnios studied in one year period.

Several pregnancies were evaluated in our institution during second and third trimester period. A thorough obstetric ultrasound examination done using a linear or curvilinear transducer. For routine obstetric ultrasound examination, a 3.5-5 MHZ transducer was used. Assessment of amniotic fluid volume

was done by using ultrasound method. The amniotic fluid index (AFI) is a semiquantitative technique to assess the amniotic fluid volume. Possibility of Polyhydramnios will be concerned when the AFI was more than 95th percentile for the gestational age. In addition, standard fetal biometric data were obtained. The fetal lie, presentation, position, assessment of gestational age and placental site were determined. A systematic fetal organ review then were performed in an attempt to detect any gross congenital abnormalities. Pregnancy outcome was recorded for patients who were classified as having an excess amount of amniotic fluid. Gestational age was established by a reliable last menstrual period or the patient's ultrasound examination.

Inclusion criteria

- Pregnancy associated with excess of amniotic fluid ie. if the amniotic fluid index (AFI) is greater than the 95th percentile for the gestational age.
- Irrespective of age and parity.
- Second and third trimester period.
- Multiple pregnancy with polyhydramnios.

Exclusion criteria

- Pregnancy associated with over distended abdomen other than hydramnios.
- Pregnancy with huge ovarian cyst.
- Ascites.
- Multiple pregnancy without polyhydramnios.
- First trimester.

Results

Total number of deliveries in one year: 10045. Total number of polyhydramnios in one year: 147. Finally 100 cases of polyhydramnios were included for the study which fulfilled the inclusion criteria. The incidence of hydramnios in pregnancy for this period was 1.4%. The present study showed 51% of the patients were in the age group of 21-25 years (table 1), maternal

conditions associated with polyhydramnios in which 54 cases were anaemic, pre-eclampsia in 4 cases, gestational hypertension in 2 cases (table 2). Majority of the cases were diagnosed at term and these were mild polyhydramnios at less than 37 weeks (table 3). In this study most of the

congenital anomalies were associated with mild polyhydramnios (table 4). The present study showed mild polyhydramnios is most commonly associated with alive babies (55 cases), after that perinatal death (23 cases) are common with mild polyhydramnios.

Table- 1: Age distribution of cases

AGE (YEARS)	NO. OF CASES
16-20	23
21-25	51
26-30	24
31-35	1
>35	1
TOTAL	100

Table- 2: Maternal conditions associated with polyhydramnios

MATERNAL CONDITIONS	NO. OF CASES
Pre-eclampsia	4
Gestational hypertension	2
Gestational diabetes mellitus	2
Anaemia	54
Rh-ve Mother	8

Table 3: Gestational age associated with severity of polyhydramnios

Gestational age (weeks)	No. of cases	SEVERITY OF POLYHYDRAMNIOS		
		Mild (%)	Moderate (%)	Severe (%)
24-27	8	6 (75)	-	2 (25)
28-32	19	15 (79)	1 (5)	3 (16)
33-37	10	6 (60)	2 (20)	2 (20)
>37	63	57 (90)	5 (8)	1 (2)
Total	100	84	8	8

Table – 4: Severity of polyhydramnios associated with congenital anomalies

Congenital Anomalies	SEVERITY OF POLYHYDRAMNIOS		
	Mild (%)	Moderate (%)	Severe (%)
1. Anencephaly	5		
2. Anencephaly + spina bifida	1		
3. Hydrocephalus	1		
4. Hydrocephalus + lumbar meningomyelocele + cervical spina bifida + club foot	1		
5. Cleft palate and cleft lip	1		
6. Hydrocephalus + lumbar meningocele	1		
7. Hydrops foetalis	1		
8. Foetal ascites		1	
9. Nonimmune hydrops foetalis	3		1
10. Diaphragmatic hernia	1		
11. Multicystic kidney	1		
12. Club foot	1		
13. Ambiguous genitalia + oesophageal Atresia	1		
14. Oesophageal atresia + tracheo-oesophageal fistula	2		1
15. Thanatophoric dysplasia	1		
16. Tracheo oesophageal fistula			1
17. Short neck + short limb	1		
18. Oesophageal atresia + imperforate anus	1		
19. Tracheo oesophageal fistula + anal Atresia	1		

Table – 5: Type of delivery / abortion

S. No.	TYPES	NO. OF CASES
1	Abortion	7
	Induced	1
	Spontaneous	
2	Vaginal	26
	Preterm	41
	Fulterm	
3	Caesarean section	25
	TOTAL	100

Table – 6: Maternal complications during pregnancy

MATERNAL COMPLICATIONS	NO. OF CASES
Placenta praevia	2
Preterm labour	14
Premature rupture of membrane	3
Transverse lie with hand prolapsed	1
Unstable lie	1
Compound presentation	1
Right occipito-posterior position	1
Cephalopelvic disproportion	10
Face presentation	2
Breech presentation	1

Table-7: Foetal outcome associated with severity of polyhydramnios

FOETAL OUTCOME	SEVERITY OF POLYHYDRAMNIOS		
	MILD	MODERATE	SEVERE
Alive	55	5	1
Perinatal death	23	3	5
Dead abortus	6	-	2
TOTAL	84	8	8

Discussion

The ultrasound study of polyhydramnios with neonatal outcome was conducted on 100 cases to ascertain the various etiological factors, maternal complications and foetal outcome due to polyhydramnios. The diagnosis of polyhydramnios was done by ultrasound method by using amniotic fluid index (AFI). A study was conducted by Nezaam M et al (1982) on 78 cases of polyhydramnios in second and third trimester of pregnancy⁴.

A study was conducted by Lyndon M. Hill et al (1987) on 102 cases of polyhydramnios which was diagnosed by ultrasound for a period of 4.5 years at Mayo clinic, southeastern Minnesota, Rochester⁵. Another study was conducted by S. Vaid et al (1987) on 100

cases of polyhydramnios for a period of 1 year at Zenana Hospital, Jaipur. Incidence of polyhydramnios⁵: Various authors quoted various incidence of polyhydramnios.

We found that the incidence of polyhydramnios in 1 years was 01.4%

According to S. Vaid et al⁶, the incidence was 1.08%.

In the present study, nearly 98% of cases were in the age group of 20-30 years as compared to S Vaid et al⁶ study, where 90% of the cases were in the age group of 20-30 years.

In this study, 84%, 8%, 8% patients were mild, moderate and severe polyhydramnios respectively as compared to Ariel Many et al⁷ where 82.3%, 10% and 7.7% patients were mild, moderate and severe polyhydramnios respecti-

vely. Majorities of the severe polyhydramnios were diagnosed at less than 37 weeks whereas majority of mild polyhydramnios were diagnosed at term in present study.

According to present study, 18% cases were induced because of foetal congenital anomalies (14 cases), maternal distress (3 cases) and severe pre-eclampsia (one case) as compared to S.Vaid et al⁶ where induction rate was 16%. The rate of caesarean section was 25% in present study as compared to Nezaam M. Zamah et al⁴ where caesarean section rate was 22.8%. Preterm labour (14%), cephalopelvic disproportion (10%) and premature rupture of membrane (3%) were the major complications during pregnancy as compared to S.Vaid et al⁶ where cephalopelvic disproportion was the major complication (5%). In the present study, most of the perinatal deaths were associated with mild polyhydramnios.

Conclusion

Ultrasonography is the best means for early detection of polyhydramnios. Simple observer judgement of an excessive amount of amniotic fluid by an experienced sonographer is a useful means for identification of high risk cases and may often lead to a successful search for congenital anomalies. A careful study must be done for detection of etiological factors in all cases of polyhydramnios, to improve the foetal outcome as well as to prevent the maternal complications.

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