

Ayurvedic Perspective and Management of Garbhodaka Kshaya with Improvement in Amniotic Fluid Index: A Case Report

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ABSTRACT

Amniotic fluid plays a vital role in fetal growth and protection throughout intrauterine life, and its adequacy is commonly assessed by the Amniotic Fluid Index (AFI), with normal values ranging between 8–24 cm. Reduced amniotic fluid, termed oligohydramnios (AFI <8 cm), is associated with increased risks such as fetal compromise and adverse pregnancy outcomes. In Ayurvedic perspective, this condition can be understood as Ksheena Garbhodaka, predominantly resulting from Vata dosha prakopa and impaired Rasa dhatu poshana. This case report describes a primigravida at 28 weeks and 5 days of gestation presenting with an AFI of 6 cm. An Ayurvedic management protocol was adopted with administration of Balamoola Ksheerapaka and Kalyanaka Ghrita, along with supportive dietary and lifestyle measures aimed at Brimhana (nourishment) and Vata shamana. Follow-up ultrasonography demonstrated a steady improvement in amniotic fluid volume, with AFI increasing from 6 cm to 10.6 cm over the course of treatment. The therapeutic effect may be attributed to the Balya and Brimhana properties of Balamoola (*Sida cordifolia*) as described in Charaka Samhita (Sutrasthana 4/8; Chikitsasthana 30), and the Medhya, Tridosha shamaka, and Garbhashthapaka actions of Kalyanaka Ghrita referenced in Ashtanga Hridaya (Uttarasthana 6/25–27). These interventions potentially enhance maternal nutrition, improve Rasa dhatu, and support adequate formation of Garbhodaka. This case highlights the potential effectiveness of Ayurvedic interventions in the management of oligohydramnios and suggests a safe, non-invasive approach to improving amniotic fluid volume and promoting favorable pregnancy outcomes.

KEYWORDS: Oligohydramnios, Ksheena Garbhodaka, Balamoola Ksheerapaka, Kalyanaka Ghrita, Amniotic Fluid Index (AFI), Garbhini Chikitsa

INTRODUCTION

Amniotic fluid is a vital component of the intrauterine environment, surrounding the embryo and fetus throughout gestation and playing a crucial role in normal growth and development. It provides a cushioning effect that protects the fetus from external trauma and umbilical cord compression, facilitates free fetal movements essential for musculoskeletal development, and supports lung maturation through

fetal breathing movements. It also aids in gastrointestinal tract development by permitting fetal swallowing and maintains a stable thermal environment. Additionally, amniotic fluid possesses bacteriostatic properties that help in preventing intrauterine infections.¹

The volume of amniotic fluid changes dynamically during pregnancy, increasing progressively from early gestation and reaching approximately 800–1000 ml in the third trimester.² The Amniotic Fluid Index (AFI) is widely used for clinical assessment, with normal values ranging between 8–24 cm.³ Values below 8 cm are considered oligohydramnios, while borderline oligohydramnios is defined between 5–8 cm. Reduced amniotic fluid volume is associated with adverse outcomes such as fetal growth restriction, congenital anomalies, placental insufficiency, and increased risk of operative delivery.⁴

Oligohydramnios can result from various etiological factors, including maternal dehydration, hypertensive disorders, uteroplacental insufficiency, premature rupture of membranes, and certain medications.⁵ In many cases, especially in the third trimester, the cause may remain idiopathic. Clinically, it may present with reduced fundal height and decreased perception of fetal movements. Persistent oligohydramnios poses a significant risk to fetal well-being and requires timely diagnosis and management.⁶

In Ayurveda, the amniotic fluid is described as Garbhodaka, which nourishes and protects the fetus within the garbhashaya. The condition of reduced amniotic fluid can be correlated with Ksheena Garbhodaka, primarily caused by aggravation of Vata dosha and depletion of Rasa dhatu.⁷ Rasa dhatu plays a pivotal role in fetal nourishment, and its impairment leads to inadequate formation of supportive fluids including Garbhodaka. Classical texts such as Sushruta Samhita describe conditions like Garbhakshaya and Manda Spandana that resemble features of compromised fetal growth and reduced intrauterine support.⁸

Ayurvedic management focuses on correcting the underlying Dosha imbalance, particularly pacifying Vata, and enhancing Dhatu poshana through Brimhana and Rasayana therapies. Milk-based preparations (Ksheerapaka) and medicated ghee formulations (Ghrita) are widely advocated for their nourishing, rejuvenating, and Garbhasthapaka (fetal stabilizing) properties. Drugs like Balamoola (*Sida cordifolia*) possess Balya and Brimhana effects, while formulations such as Kalyanaka Ghrita are described as Medhya, Tridosha shamaka, and supportive for fetal well-being.⁹

Despite advances in modern obstetrics, management options for oligohydramnios remain limited, often focusing on hydration and close monitoring, with early delivery in severe cases. Therefore, exploring safe and effective alternative approaches becomes essential. In this context, Ayurvedic interventions may offer a promising, non-invasive strategy for improving amniotic fluid volume and ensuring favorable pregnancy outcomes. The present case study aims to evaluate the role of Ayurvedic management in a case of oligohydramnios and its impact on amniotic fluid restoration.

PATIENT INFORMATION

A 25-year-old Primi gravida attended the outpatient department of Prasutitantra and Streeroga on 17/06/2025 with a history of 1½ months of amenorrhea. Ultrasonographic evaluation at the initial visit confirmed a single live intrauterine pregnancy corresponding to 7 weeks 2 days of gestational age, with no abnormalities detected. The patient was counselled regarding regular antenatal check-ups, adequate hydration, and a nutritionally balanced diet supplemented with iron and calcium, along with periodic ultrasound monitoring.

The patient was subsequently followed up throughout her antenatal period. On 22/11/2025, ultrasonography revealed a single live intrauterine fetus of 28 weeks and 5 days of gestation, with reduced amniotic fluid volume, with an amniotic fluid index (AFI) of 6 cm, suggestive of oligohydramnios and a

biophysical profile of 10/10, with a fetal heart rate of 152 bpm. The patient was treated with Ayurvedic management, including balamoola ksheera paka and kalyanaka gritha for 4 months.

CLINICAL FINDINGS

GENERAL EXAMINATION

Decubitus – Sitting

Nourishment – Well nourished

Appearance – Normosthenic

Pallor – Absent

Icterus – Absent

Cyanosis – Absent

Clubbing – Absent

Lymphadenopathy – Absent

Height – 5'3"

Weight – 71.5Kg

VITAL SIGNS

Blood pressure : 110/70 mmHg

Temperature : 98.4 F

Respiratory rate : 20 rpm

Pulse : 78 beats per minute

SYSTEMIC EXAMINATION

R/S: B/L NVBS Heard

CVS: S1 S2 Heard, no added sounds, no murmurs

CNS: conscious and well oriented to time and place

PERSONAL HISTORY

Appetite: Normal

Sleep: Disturbed

Bowel Movements: Clear

Bladder: Clear

Addiction: None

Diet: Vegetarian

MENSTRUAL HISTORY

1. Age of Menarche: 13 years
2. Duration of Menses: 3-4 days
3. Interval of Menses: 28-30 days
4. Last Menstrual Period: 27/04/2025
5. Expected Date of Delivery: 1/02/2026

PER ABDOMEN EXAMINATION

1. Fundal Height: approx. 28-29 weeks of gestation
2. Fetal Lie: Longitudinal
3. Fetal Presentation: Cephalic
4. Fetal Heart Rate: 142 bpm
5. Uterus: Relaxed

OBSTETRIC HISTORY:

G1 P0 A0 L0 D0

ANTENATAL INVESTIGATION:

All blood and urine investigations normal

TIMELINE

The patient was advised intake of Balamoola Ksheerpakaa and kalyanaka gritha for 3 months. After the course, another ultrasound was recommended to assess changes in amniotic fluid volume.

METHOD OF PREPARATION AND ROUTE OF ADMINISTRATION OF KSHEERAPAKA

To prepare ksheerapaka, a coarse powder of Balamoola qwatha churna- 10 gm is taken and boiled with 100 ml of milk on medium heat and reduced to 40 ml. This is strained and filtered through fine sieve. It is then brought to lukewarm temperature and administered orally.

SCHEDULE OF ADMINISTRATION

1. Balamoola ksheerapaaka (40 ml-0-40ml)
2. Kalyanaka gritha (5gm-0-5gm)

DATE	GESTATIONAL AGE	TIME PERIOD
22/11/25	29 WEEKS 6 DAYS	1 WEEK
13/12/25	32 WEEKS 6 DAYS	1 WEEK
27/12/25	34 WEEKS 6 DAYS	1 WEEK
3/01/26	35 WEEKS 6 DAYS	15 DAYS

ULTRASONOGRAPHY FINDINGS

SCAN	FINDINGS
USG (27/09/2025)	SLIUG of 20 weeks 6 days Estimated fetal weight – 396gm FHR – 169 bpm Placenta – grade I maturity Cervix – 3.5cm AFI – 14cm
USG (22/11/2025)	SLIUG of 28 Weeks 5 days Estimated fetal weight– 1295 gm FHR – 152 bpm BPP- 10/10 Placenta – grade I maturity Cervix – 3.4 cm AFI – 6 cm
After 2 weeks of treatment	
USG (13/12/2025)	SLIUG of 32 Weeks Estimated fetal weight – 1900 gm FHR – 146 bpm BPP- 10/10 Placenta – grade I maturity Cervix –3.5 cm AFI –7 cm
After 2 weeks of treatment	
USG (03/01/2026)	SLIUG of 33 weeks 6 days Estimated fetal weight – 2353gm FHR – 149 bpm BPP-10/10 Placenta – Posterior, grade I maturity Presentation – cephalic Cervix –3.5 cm AFI –10.6 cm

OUTCOME

Following initiation of therapy, the patient reported a gradual improvement in fetal movements. Serial antenatal assessments showed appropriate increase in fundal height corresponding to the gestational age. Ultrasonographic monitoring demonstrated progressive improvement in amniotic fluid volume and overall fetal parameters. A scan performed on 13/12/2025 (32 weeks) revealed a single live intrauterine fetus with an estimated fetal weight of 1900 gm, fetal heart rate of 146 bpm, and an AFI of 7 cm. Further follow-up ultrasound on 03/01/2026 (33 weeks 6 days) showed continued improvement, with an estimated fetal weight of 2353 gm, fetal heart rate of 149 bpm, normal biophysical profile (10/10), and AFI increased to 10.6 cm. The placenta was posterior with grade I maturity and the presentation was cephalic. The

progressive rise in AFI along with stable fetal growth parameters indicates a positive response to the Ayurvedic management and improvement in overall fetal well-being.

ANTENATAL ULTRASONOGRAPHY REPORT (GROWTH SCAN)		
NAME : MRS. PAVITHRA		AGE / SEX: 25 YRS / F
REF BY: DR. ANUSHA M		DATE : 22/11/2025
Many thanks for the kind reference		
LMP: 27/04/2025	GA By LMP: 29 Weeks 6 Days	EDD by LMP: 01/02/2026
GA By Present USG: 28 Weeks 5 Days		Corrected EDD: 08/02/2026

Single live intra uterine fetus noted with head in the lower pole during the time of scan.
Fetal cardiac activity present. The limbs and body movements are normal.

FETAL BIOMETRY

BIPARIETAL DIAMETER	: 07.05 cm.
HEAD CIRCUMFERENCE	: 25.95 cm.
ABDOMEN CIRCUMFERENCE	: 24.44 cm
FEMUR LENGTH	: 05.55 cm.
FETAL WEIGHT	: 1295 gm $\pm$ 15%
FHR	: 152 bpm

PLACENTA— Posterior and left lateral wall in the body with grade – I maturity. The lower limit of the placenta is well (6 cm) away from the internal os.

Biophysical profile:

Foetal movements	: 2
Foetal tone	: 2
Foetal respiration	: 2
Foetal reactivity	: 2 Accelerations of more than 15 seconds & 15 beats.
Amniotic fluid	: 2, Single deepest pocket measures 3.5 cm-normal
BPP	: 10/10

Liquor is inadequate for the period of gestation. AFI: 6.0 cm.
Cervix is normal (3.4 cm). Internal Os is closed.

IMPRESSION:

- SINGLE LIVE INTRA- UTERINE GESTATION OF 28 WEEKS 5 DAYS $\pm$ 2 WEEKS IN CEPHALIC PRESENTATION WITH MODERATE OLIGOHYDRAMIOS.
- NORMAL INTERVAL GROWTH.

Suggested: Follow up scans.
Please Note: All congenital anomalies and chromosomal abnormalities cannot be detected on ultrasound.

I, DR. BASAWARAJ N G, DECLARE THAT WHILE CONDUCTING ULTRASONOGRAPHY ON MRS. PAVITHRA I HAVE NEITHER DETECTED NOR DISCLOSED THE SEX OF HER FOETUS TO ANYBODY IN ANY MANNER.

USG SCAN (22/11/2025)
AFI – 6 CM

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ANTENATAL ULTRASONOGRAPHY REPORT (GROWTH SCAN)

NAME : MRS. PAVITHRA
 REF BY: DR. ANUSHA M
 Many thanks for the kind reference

AGE / SEX: 25 YRS / F
 DATE : 13/12/2025

LMP: 27/04/2025 GA By LMP: 32 Weeks 6 Days EDD by LMP: 01/02/2026
 GA By Present USG: 32 Weeks 0 Days Corrected EDD: 08/02/2026

Single live intra uterine fetus noted with head in the lower pole during the time of scan.
 Fetal cardiac activity present. The limbs and body movements are normal.

FETAL BIOMETRY

BIPARIETAL DIAMETER : 08.10 cm.
 HEAD CIRCUMFERENCE : 28.68 cm.
 ABDOMEN CIRCUMFERENCE : 28.78 cm
 FEMUR LENGTH : 05.95 cm.
 FETAL WEIGHT : 1900 gm $\pm$ 15%
 FHR : 146 bpm

PLACENTA - Posterior and left lateral wall in the body with grade - I maturity. The lower limit of the placenta is well (6 cm) away from the internal os.

Biophysical profile:
 Foetal movements : 2
 Foetal tone : 2
 Foetal respiration : 2
 Foetal reactivity : 2 Accelerations of more than 15 seconds & 15 beats.
 Amniotic fluid : 2. Single deepest pocket measures 3 cm-normal
 BPP : 10/10

Liquor is inadequate for the period of gestation. AFI: 7.0 cm.
 Cervix is normal (3.5 cm). Internal Os is closed.

IMPRESSION:

- SINGLE LIVE INTRA- UTERINE GESTATION OF 32 WEEKS 0 DAYS $\pm$ 2 WEEKS IN CEPHALIC PRESENTATION WITH MILD OLIGOHYDRAMIOS.
- NORMAL INTERVAL GROWTH.

Suggested: Follow up scans.
 Please Note: All congenital anomalies and chromosomal abnormalities cannot be detected on ultrasound.

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AFTER 2 WEEKS OF Rx

USG SCAN (13/12/2025)

AFI – 7 CM

ANTENATAL ULTRASONOGRAPHY REPORT (GROWTH SCAN)		
NAME : MRS. PAVITHRA		AGE / SEX: 25 YRS / F
REF BY: DR. ANUSHA M		DATE : 03/01/2026
Many thanks for the kind reference		
LMP: 27/04/2025	GA By LMP: 35 Weeks 6 Days	EDD by LMP: 01/02/2026
GA By Present USG: 33 Weeks 6 Days		Corrected EDD: 08/02/2026

Single live intra uterine fetus noted with head in the lower pole during the time of scan. Fetal cardiac activity present. The limbs and body movements are normal.

FETAL BIOMETRY

BIPARIETAL DIAMETER	: 08.58 cm.
HEAD CIRCUMFERENCE	: 29.99 cm.
ABDOMEN CIRCUMFERENCE	: 30.80 cm
FEMUR LENGTH	: 06.42 cm.
FETAL WEIGHT	: 2353 gm $\pm$ 15%
FHR	: 149 bpm

PLACENTA— Posterior and left lateral wall in the body with grade – II maturity. The lower limit of the placenta is well (6 cm) away from the internal os.

Biophysical profile:

Foetal movements	: 2
Foetal tone	: 2
Foetal respiration	: 2
Foetal reactivity	: 2 Accelerations of more than 15 seconds & 15 beats.
Amniotic fluid	: 2. Single deepest pocket measures 3.5 cm-normal
BPP	: 10/10

Liquor is adequate for the period of gestation. AFI: 10.6 cm.
Cervix is normal (3.5 cm). Internal Os is closed.

IMPRESSION:

SINGLE LIVE INTRA- UTERINE GESTATION OF 33 WEEKS 6 DAYS $\pm$ 2 WEEKS IN CEPHALIC PRESENTATION.

Please Note: There is growth lag of 7 days compared to dating scan-within normal limits.

Suggested: Follow up scans.

Please Note: All congenital anomalies and chromosomal abnormalities cannot be detected on ultrasound.

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AFTER CONTINUED 2 WEEKS OF Rx

USG (3/01/2026)

AFI – 10.6 Cm

DISCUSSION

Oligohydramnios is a clinical condition characterized by decreased amniotic fluid volume, which is essential for maintaining fetal growth, cushioning, and overall intrauterine well-being. From an Ayurvedic perspective, this condition can be correlated with Ksheena Garbhodaka, resulting from Vata dosha prakopa and insufficient nourishment of Rasa dhatu. The depletion of fluid components (Jala mahabhuta) leads to an imbalance in intrauterine homeostasis, thereby affecting fetal development. Classical descriptions such

as Garbhashosha and Garbhakshaya mentioned by Acharya Sushruta reflect conditions where fetal nourishment and growth are compromised, which may be comparable to reduced amniotic fluid states.¹⁰ The management of such conditions in Ayurveda primarily focuses on restoring Vata balance and enhancing Dhatu poshana through Brimhana and Rasayana chikitsa. In the present case, Balamoola Ksheerapaka and Kalyanaka Ghrita were administered considering their nourishing and stabilizing properties. Balamoola (*Sida cordifolia*) is well known for its Balya and Brimhana effects, promoting tissue nourishment and improving maternal strength. Kalyanaka Ghrita, described as Medhya, Tridosha shamaka, and Garbhasthapaka, plays a supportive role in maintaining fetal stability and enhancing overall garbaposhana.^{11, 12}

The Snigdha (unctuous) and Sheeta (cooling) guna of these formulations help in replenishing depleted body fluids and restoring Rasa dhatu, which is directly responsible for the formation of Garbhodaka. The milk-based preparation (Ksheerapaka) further enhances hydration and provides essential nutrients, thereby supporting uteroplacental circulation. This may facilitate improved exchange of nutrients and fluids across the placenta, contributing to an increase in amniotic fluid volume.

In this case, a gradual rise in AFI from 6 cm to 10.6 cm was observed, along with improvement in fetal parameters, indicating a positive response to the intervention. The observed outcome suggests that Ayurvedic management can play a beneficial role in improving amniotic fluid volume and promoting fetal well-being in cases of oligohydramnios. However, further studies with larger sample sizes and controlled designs are necessary to validate these findings and establish evidence-based protocols.

CONCLUSION

The present case highlights the potential role of Ayurvedic management in Ksheena Garbhodaka (oligohydramnios). The administration of Balamoola Ksheerapaka and Kalyanaka Ghrita appears to act through Vata shamana, Brimhana, and Rasayana effects, thereby improving Rasa dhatu poshana and supporting adequate formation of Garbhodaka. The Snigdha and Sheeta guna of these formulations help in restoring the Jala mahabhuta balance, while their Garbhasthapaka and Balya properties contribute to fetal stability and maternal strength.

The observed improvement in Amniotic Fluid Index along with better fetal parameters indicates a favorable response to therapy, suggesting that such interventions can help in maintaining proper Garbha poshana and intrauterine environment. This reflects the importance of adopting Ahara, Vihara, and Aushadha in a holistic manner during Garbhini paricharya.

Although the outcome is encouraging, it is based on a single case observation. Therefore, further systematic clinical studies are required to establish the efficacy, safety, and standardization of these Ayurvedic interventions in the management of oligohydramnios.

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