

An ayurvedic management of Amniotic band syndrome with a focus on antenatal care and complication free outcome - A case study

Case Report

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Abstract

Ayurveda explains *Jarayu* as the membranous covering of foetus. The liquor amni secreted from amnion can be considered as *ambu / garbhodaka*. According to *Sarangadhara*, *jarayu dosha* can be considered under all abnormalities of amnion and chorion that includes unusual friability, amnionitis, cyst, amnionnodosum, amniotic adhesions along with poly-hydramnios and oligo-hydramnios. Amniotic Band Syndrome (ABS) is a rare condition caused by the strands of amniotic sac that separate and entangle digits, limbs or other parts of the fetus. It is believed that ABS occurs when inner membrane (amnion) ruptures, tears, without injury to outer membrane (chorion). A 21-year-old pregnant woman at 14 weeks of gestation came to *Prasuti Tantra and Stree Roga* OPD of KLE Ayurveda medical college Belagavi and diagnosed as Amniotic Band Syndrome (ABS) and it was effectively managed by using Ayurvedic formulations such as *Laghu Malati Vasant Rasa* and *Shatavari Ksheera Paka* focusing on enhancing amniotic fluid levels and supporting fetal growth. This holistic approach led to a healthy delivery without complications, showcasing the potentiality of Ayurveda in addressing rare and challenging prenatal conditions.

Keywords: Amniotic Band Syndrome, Antenatal Care, Laghu Malati Vasant Rasa, Shatavari Ksheera Paka..

Introduction

Jarayu (Amniotic membrane) is outer most covering of *garbha* (fetus) and situated in interior side of *garbhashya* (uterus). The problems associated with *jarayu* are called as *jarayu dosha* (1). Complications of membranes are premature rupture of membranes, chorioamnionitis, amniotic cysts, amniotic bands (2). Complications of membranes are premature rupture of membranes, chorioamnionitis, amniotic cysts, amniotic bands. Amnion bands are disruption of amnion leads to the formation of bands or strings that adhere to fetus. They impair growth & development of the involved structure (3). Two pathogenesis theories have been put forward: the exogenous theory, which proposes the early partial rupture of the amniotic sac leading to fibrous bands; these fibrous bands float in the amniotic fluid and can encircle and entrap a part of the fetus. These acts as constricting bands as the fetus grow, causing reduced blood circulation, which can lead to auto amputation of a digit or limb in utero. In some cases, it leads to necrosis requiring surgical amputation following birth. The other endogenous theory seconds vascular compromise (4).

Laghu Malini Vasant Rasa a herbo-mineral preparation consists of *Rasak bhasma* (Zinc oxide) (2 parts), *Maricha* (*Piper nigrum* Linn) (1 part), *bhavana* with *Nimbuk* (*Citrus indica*) *swarasa* (Juice) and *Navaneet* (butter) quantity sufficient). It acts *Kaphapitta vardhaka*, *Rasayanakaraka*, *Balya*, Zinc which is one of the main chemical constituent present act as a catalyst and has direct effect on ion channels helps in maturation of T-helper cells, also in cell mediated immune dysfunction, protein synthesis etc. Act as an antioxidant, and has a role in normal growth and development during pregnancy (5). *Shatavari Ksheerapaka* (25 ml twice daily). Tab Iron and Calcium Continued. *Shatavari*: It is a popular medicinal plant botanically identified as *Asparagus racemosus* Willd belongs to *Liliaceae* family. It is perennial climber with many edible underground tubers. It posses *madhura* (sweet), *tikta* (bitter taste) *rasa*, *guru snigdha guna* (heavy, unctuous properties), *sheeta veerya* (cold in potency) and *Madhura vipaka* (undergoes sweet metabolism). It acts as *Vata-Pitta shamaka* (mitigates vatapitta), *Rasayana* (rejuvenator), *Medhya* (brain tonic), *Pusthivardhana* (nutrients), *Balya* (strengthening), *Shothahara* (Anti-inflammatory), *Gulmanashaka* (anti-tumour) (6).

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Case Report

A 21 year old primigravida with no history of consanguinity or pathological conditions visited to the *Prasuti Tantra evam Stree Roga* OPD of KLE Ayurveda hospital at 8 weeks of gestation life. The patient is

moderately built and well-nourished. In terms of obstetric history, she has been married for one year and is a primigravida, indicating this is her first pregnancy.

The patient has a history of dysmenorrhea. Her menstrual cycles are regular, occurring every 28-30 days with moderate flow. The last menstrual period (LMP) was on 18th May 2023, and the estimated due date (EDD) is 26th March 2024. The patient has no

known history of diabetes mellitus, tuberculosis, hypertension, cardiac issues, or thyroid disorders. The patient was monitored during follow-up visits for any signs of complications, including threatened abortion or abnormal fetal development. Regular check-ups and ultrasounds were performed to ensure the health of both the mother and the baby.

Table 1: Visit wise observations and management

Visits	1 st visit 12-8-2023	2 nd visit 29-9- 2023	3 rd visit 7-11- 2023	4 th visit 12-1-2024	5 th visit 1-3-2024	6 th visit 9-3-2024
P/A	Non palpable	Just palpable uterus	At umbilicus	Above the umbilicus	Uterus corresponds to 32-34 weeks	Uterus corresponds 34-36 weeks
Gestation	8 weeks	14 week	20 weeks	28 weeks	36 weeks	37weeks 3 days
Vitals	BP-110/70 Wt-45kg PR-80/min	BP-120/70 Wt-46kg PR-78/min	BP-110/70 Wt-50kg PR-80/min	BP-130/80 Wt-45kg PR-72/min	BP-110/70 Wt- 62kg PR-78/min	BP-130/80 Wt- 62kg PR-80/min
FHS	-	-	142b/min	138 b/min	148 b/ min	152 b/min
Scan	Single live intrauterine foetus corresponding to 8 wks 0	Fetal cardiac activity noted.	Nuchal translucency thickness is normal 1.5 mm. - lower amniotic band is noted measuring about 4.1 mm in thickness, arising from the inferior placenta traversing through the cavity towards the superior end of placenta	-	* Fetal movements were observed to be normal. *A growth scan confirmed normal fetal growth, adequate amniotic fluid (AFI: 11 cm), with no evidence of amniotic band. *Estimated fetal weight was 2.8 kg at 36 weeks of gestation, indicating healthy development	-
Doppler scan	-	-	-	-	Normal Doppler study	-
Inj. TT	-	1 st dose	2 nd dose	-	-	-
Treatment	5 mg folic acid I HS given	Iron & calcium started	1) Tab. <i>Laghu malini Vasant</i> 1 BID advised for 2 months 2) <i>Shatavari ksheera pak</i> 25 ml BID for 2 months started 3) Iron & calcium continued	Iron & calcium continued Tab <i>Laghumalinivasa nt</i> 1 BID advised for 2 months <i>Shatavari ksheerapak</i> 50 ml BID for 2 months started		Uterus corresponds 36 weeks Cephalic presentation With PROM, Pt came with PV leak Latent labour

Events of case

The initial confirmation scan was normal, indicating a healthy start to her pregnancy. The morphological ultrasound showed a progressive monofetal pregnancy with Single intrauterine gestational sac noted.

2nd Scan: The NT scan performed on 29th September 2023 (at 14 weeks and 4 days gestation) revealed a lower midline, shelf-like amniotic band measuring approximately 4.1 mm in thickness. This band extended from the inferior placenta, traversing the uterine cavity towards the superior end of the placenta Picture 1. Despite this finding, the nuchal translucency thickness was within normal limits at 1.5 mm, indicating no immediate concerns regarding chromosomal abnormalities.

Picture No. 1 and 2, Showing presence of ABS



3rd SCAN was done on 7th November 2023 (at 20 weeks' gestation), an upper midline shelf like amniotic band is noted measuring about 2.7 mm in thickness, arising from the inferior placenta traversing through the cavity towards the superior end of placenta.

4th SCAN: During the fourth scan, fetal movements were observed to be normal. A growth scan confirmed normal fetal growth, adequate amniotic fluid (AFI: 11 cm), and normal Doppler findings, with no evidence of an amniotic band. The estimated fetal weight was 2.8 kg at 36 weeks of gestation, indicating healthy development

Treatment plan

To promote optimal fetal growth and maintain proper amniotic fluid levels, we initiated *Laghu Malini Vasant Rasa* (1 tablet twice daily and *Shatavari Ksheerapaka* (25 ml twice daily) along with Iron and Calcium Continued.

This combination leverages Ayurvedic principles to support fetal development and enhance the pregnancy's overall health. The patient was monitored monthly for any signs of threatened abortion, abnormal fetal development, or other complications. Regular evaluations included clinical examinations and ultrasonography to ensure maternal and fetal well-being.

Discussion

Amniotic band syndrome is a rare condition that can't be prevented and occur when the fetal membranes break or due to chromosomal issues. This causes tissue from the amniotic sac to float in the fluid and wrap around the fetus's body parts, sometimes causing them to stick together as the fetus moves

Ultrasound examination is a valuable tool for quickly and accurately diagnosing severe fetal disorders or disabilities. If amniotic band syndrome is detected during the second trimester, the obstetrician may consider options, including pregnancy termination, depending on the severity and potential impact on the fetus. However, if the amniotic bands are present but not causing any organ involvement or significant harm, the pregnancy is usually allowed to continue until full term

In Ayurvedic point of view amniotic band syndrome can be considered under broad spectrum of *jarayu dosha* mentioned in *Sarangadhara Samhitha*. According to, *Acharya Sarangadhara jarayu* is the membranous covering of the foetus in its intra-uterine life. The liquor amnii secreted from amnion can be considered as *ambu / garbhodaka*. Any abnormality of *jarayu* includes all abnormalities like amniotic band syndrome. To promote optimal fetal growth and maintain proper amniotic fluid levels, we started Ayurvedic treatment by administering *Laghmalini Vasanta Rasa* with *Shatavari Ksheerapaka*.

Laghmalini Vasanta Rasa (LMV) is a well-known remedy, especially used during pregnancy. It acts as a *rasaposhaka* (nourishing), *yogavahi* (enhancing the effect of other herbs), *deepana* (stimulating digestion), and *pachana* (digestive support) for the *rasavaha* (nourishing) and *raktavaha* (circulatory) channels in the body. *Laghmalini Vasanta Rasa* (LMV) helps ensure proper nourishment of the fetus during pregnancy, supporting overall health for both the mother and baby.

Mode of action: The presence of an amniotic band attached to the placenta raises concerns about placental insufficiency, affecting fetal growth and circulation, with risks like oligohydramnios, PROM, and premature delivery. However, a reduction in the band size was observed, likely due to *Maricha's chedana* (scraping) property in *Laghmalini Vasanta Rasa*, which helped mitigate its impact. This formulation, containing zinc, supports pregnancy by increasing progesterone levels. To maintain amniotic fluid levels, *Shatavari Ksheerapaka* was recommended. *Shatavari* balances *vata*, nourishes the fetus, and, combined with *goksheera* (cow's milk), enhances fluid levels and fetal development. Cow's milk, rich in casein and whey proteins, naturally boosts amino acid levels, serving as an alternative to amnioinfusion (7).

Conclusion

In this case, we can conclude that *Ayurvedic* management, when combined with timely monitoring, can help support the continuation of pregnancy in cases of amniotic band syndrome without significant complications. Proper Ayurvedic interventions, such as the use of *Laghmalini Vasanta Rasa* and *Shatavari Ksheerapaka*, along with regular ultrasound monitoring, may help reduce risks and support fetal development, allowing the pregnancy to continue safely.

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