'website : www.ijacare.in e-ISSN No.: 2457-0443
INTERNATIONAL JOURNAL OF AYUSH CASE REPORTS (IJA-CARE)

An Ayurvedic Management in Primary Infertility Associated with Anovulatory Cycle with Diminished Ovarian Reserve: A Case Report

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ABSTRACT:

Infertility, defined as the inability of a sexually active couple to conceive after one year of regular, unprotected intercourse, affects a significant portion of the population. Among the various causes of female infertility-ovulatory dysfunction accounts for approximately 35% of cases. In Ayurveda, this condition can be correlated with "*Ksheenartava,*" This case study explores the efficacy of an Ayurvedic intervention, *Rasnadi Churna Basti*, in the management of infertility due to anovulatory cycles with diminished ovarian reserve. A 29-year-old female with primary infertility and a married life of 2.5 years presented to the *Stree Roga evum Prasuti Tantra* outpatient department at AIIA, New Delhi. Despite having regular menstrual cycles, she was diagnosed with Bilateral Polycystic Ovarian Disease (PCOD) via ultrasonography and had a history of anovulatory cycles as confirmed by transvaginal ultrasound (TVS). Her Anti-Müllerian Hormone (AMH) levels were low, indicative of diminished ovarian reserve, though other hormonal assays were within normal limits. The patient had been previously advised to pursue IVF with donor oocytes and intracytoplasmic sperm injection (ICSI) at a reputed hospital in Delhi. Ayurvedic treatment plan was initiated, beginning with *Deepana-pachana* & *Koshtha shuddhi* (therapeutic purgation) followed by *Rasnadi Churna Basti* (medicated enema) administered post-menstruation for three consecutive cycles. TVS was performed during each cycle to monitor follicular growth and ovulation**.** After completing three cycles of *Rasnadi Churna Basti*, the patient resumed ovulation, as evidenced by TVS and during the follow-up period, she conceived naturally. This case demonstrates the potential of *Rasnadi Churna Basti* as a safe, effective, and cost-efficient treatment for Infertility caused by anovulatory cycles, particularly in cases with diminished ovarian reserve.

KEYWORDS: Anovulation, Diminished Ovarian Reserve, Infertility, *Rasnadi Churna Basti.*

Received: 18.01.2025 Revised: 10.02.2025 Accepted: 28.02.2025 Published: 10.03.2025

Quick Response Code

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DOI: https://doi.org/https://doi.org/10.70805/ija-care.v9i1.685
Link: https://ijacare.in/index.php/ijacare/article/view/685

INTRODUCTION:

Infertility is defined as the inability of a sexually active couple to conceive after one year of regular, unprotected intercourse. [1] It could be either primary or Secondary. Primary infertility is when a couple has never been able to conceive despite having unprotected intercourse for at least one year (or six months for women over 35), the cause could be ovulatory disorders, blocked fallopian tubes, or endometriosis. [2] Secondary infertility is when a couple has previously conceived but is now unable to do so, despite trying for one year or more, it could be due to complications from previous pregnancies, age-related factors, or new health issues that have developed since the first pregnancy. According to the World Health Organization, 15% of couples globally are affected, translating to approximately 48.5 million individuals. [3] Among the various causes of female infertility, ovulatory dysfunction is responsible for about 35% of cases. The most common leading cause of ovulatory dysfunction is Polycystic Ovary Syndrome (PCOS). [4]. PCOS accounts for about 70-85% of cases of ovulatory dysfunction, making it the primary culprit other causes are Hypothalamic Amenorrhea, Hyperprolactinemia, Premature ovarian insufficiency, Thyroid disorders and Obesity. The modern treatment approaches such as ovulation induction, in vitro fertilisation (IVF), intrauterine insemination (IUI), and other assisted reproductive technologies (ART) offer solutions, they are often associated with high costs, significant side effects like ovarian hyperstimulation syndrome (OHSS), multiple gestations, and long-term risks such as ovarian cancer. In Ayurveda classics, *Ksheenartava* has been described as a condition that hinders ovulation & the most common cause of *khsenearatava is mithya Ahara-vihara*, Vitiation of *doshas* in *Beeja* (ovum). [5]

CASE REPORT

A 29-year-old female patient visited the *Stree roga evum Prasuti Tantra* outpatient department of AIIA, New Delhi with a complaint of want issue for 1.5 years, her married life was 2.5 years. She was a software engineer. The patient had been advised of Donor oocyte IVF & ICSI in one of the reputed hospitals of Delhi. She was very depressed and lost hope. She came to our hospital for the same problem.

History

- **Menstrual History:** The duration of her menstrual cycle was 5 days with intervals of 28 to 30 days. It was regular, with moderate flow and mild pain. She used 2 pads/day. The menstrual cycle was normal.
- **Married Life –** 2.5 years.
- **Contraceptive History-** Nil
- **Contact History –** 3-4 times/week
- **Obstetric History –** Nil
- **NO/H/O-**DM/HTN/TB/Thyroid dysfunction
- **Family history** - No relevant family history
- **Past surgical history -**No history of surgery in the past was found
- **Occupation history-**____Both Husband & Wife were Software engineer
- **Addiction history -** Nil

Personal History: Appetite- Decreased, Bowel- Unsatisfactory Evacuation, Urine- Clear, Sleep- Sound

Clinical Examinations:

The patient underwent General and systemic examinations as per Ayurveda and contemporary methods.

Gynaecological Examination

Vulva- Healthy

P/S

Cx – Healthy

Discharges- Minimal watery D/s

P/V

Uterus- AVNS, mobile, non-tender

B/L Fornices – Clear

No, any mass palpable

General Examinations:

P/A-soft, non-tender, no organomegaly was detected

Pallor – Absent

Cynosis – Absent

Icterus- Absent

Lymphadenopathy – Nil

Temperature – Afebrile

Blood pressure -110/70 mmHg

Pulse rate - 76 bpm

Systemic Examination:

CVS – S1-S2 heard, Normal

R/S – B/L Air entry clear, No added sound

- No abnormality found on other system

Investigations Advised based on history

- Blood- CBC, ESR, TFT, Hormonal Essay (Sr.FSH, LH, Estrogen, Progesterone, Prolactin & AMH)
- USG (Pelvis)
- TVS (Follicular study) from the 9th day of menses.
- HSG
- HSA (Husband semen Analysis)

Diagnostic Assessment

CBC with ESR (20/9/24)

Hb- 10.2 gm/dl

Platelet count – 1.78 lac/cm

TLC- 7045 /cu mm

ESR – 18 mm/first hr

TFT – Within the normal limit

Hormonal Essay-(On D2 of menses)

Sr. FSH – 4.78 mIU/mL

Sr.LH – 8.23 mIU/mL

Sr.AMH – 0.36 ng/ml

Sr.Prolactin – 21 ng/mL

Sr Estrogen – 15 pg/ml

Sr.progesterone – 0.5 ng/ml

USG (pelvis) (25/9/24)

Uterus – AVNS (7.7*3.6*4.6 cm)

Endometrial Thickness – 7.4mm

Both ovaries are slightly small and normal in shape, showing few developing follicles at the present scan.

R.O.- 23*11*21mm

L.O.- 29*11*22mm

No free fluid was seen in POD

S/O – Premature Ovarian Failure

HSG (15/10/24)

Imp: - Free peritoneal spill seen on both sides' s/o Normal Study

HSA (Husband semen analysis__– 20/10/24)

- Total sperm count - 52milon/ml
- Rapid progressive - 60%
- Slow progressive - 20%
- Non-progressive - 10%
- Immotile – 10%
- Total motile – 90%
- Vitality - 70%
- Normal forms - 70%
- Abnormal forms - 30%
- Pus cell - 2-3 /hpf
- Fructose – present
- Agglutination – Negative

TVS (follicular study)

On Day 15th – R.O. showing 6*6mm follicle

-L.O. showing 6*6mm follicle

- **ET** – 9.8mm & mild free fluid in POD

Carried out for 2 consecutive cycles to diagnose & confirm the Anovulatory cycle

THERAPEUTIC INTERVENTION:

In this particular case, the main Doshas involved were *Vata-kapha* predominance *Tridosha* and there was also *Rasa, Raktha & Artava Dushti*. So, the Chikitsa adopted were according to the *Dosha* predominance along with *Nidana Parivarjana*. Before undergoing the main procedures, *Deepana pachana* was done followed by *koshtha Shuddhi* then *Rasnadi churna basti* was administered post-menstrually along with some *pathya- Apathya.* [6]

Pathya-apathya

- Avoid psychological stress & excessive screen time.
- Early to bed & early to wake up
- Follow *Rajaswala Paricharya* during menses.
- Avoid baked items, fermented foods, fast food (pasta, peaches, pizza), cold beverages, and overly spicy & deep-fried items as all these foods are heavy to digest & cause *Agnimandya* and *vitiated Kapha-pitta*
- Intake of fresh and home-made food.
- *Anuloma-viloma & Pranayama*

Observations and Result:

The observation was made based on follicular study carried out in every cycle after therapy from the 9th day of menses and repeat hormonal assay after completion of treatment. It was observed that after 1 cycle of *Rasnadi Churna Basti* the follicle size started to increase and ovulation was also achieved the therapy was continued for 2 months more. All Hormonal assays were within normal limits after completion of treatment and there was improvement seen in Sr.AMH level also.

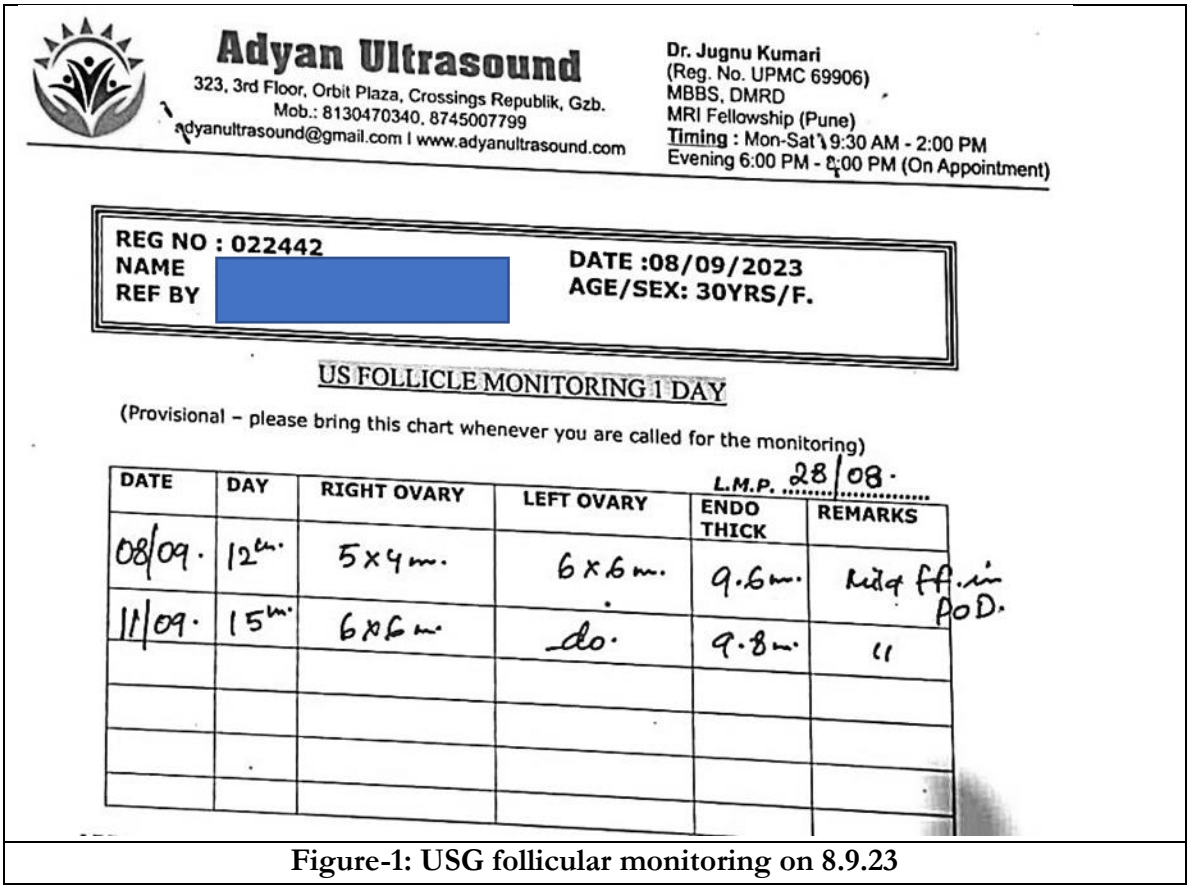
In this case study, the assessment was done based on TVS (follicular study) before, during, and after the treatment. Before treatment, the patient was assessed to diagnose and confirm the anovulation. During treatment, the size of follicles and ovulation were tracked, and after the treatment, the same was done to see the sustainability effect of therapy.

Table-1: Therapeutic intervention:

Deepana-Pachana	*Guduchi & Musta churna*
Koshtha shhudhi	*Phalatrikadi kwatha*
Basti	*Rasnadi churna basti* for 7 days, post menstrually for 3 consecutive cycles
Follow up period	2 months – *Rasayana chikitsa* was given to strengthen the *Artava*

Table-2: Time line and Summary

Before Treatment	The Follicle size was 6*6mm in both Ovaries, and ET was good at 9.8mm
In Cycle 1	The follicle size increased to 14.7*14.8mm (Lt ovary -on Day10) and ruptured on Day12th
In Cycle 2	The follicle size increased to 16*18mm (Rt. Ovary) and then ruptured on Day 11th
In cycle 3	The follicle size increased to 18*19 mm (Lt.Ovary)and then ruptured on Day 11th
Follow-up 1	
	The follicle size was 16*17mm and the ruptured on Day 12th
Follow-up 2	The follicle size was 15*16mm and ruptured on Day 11th and the patient conceived in this cycle.



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Timing : Mon-Sat 9:30 AM - 2:00 PM
Evening 6:00 PM - 8:00 PM (On Appointment)

REG NO : 022442
NAME
REF BY
DATE :08/09/2023
AGE/SEX: 30YRS/F.

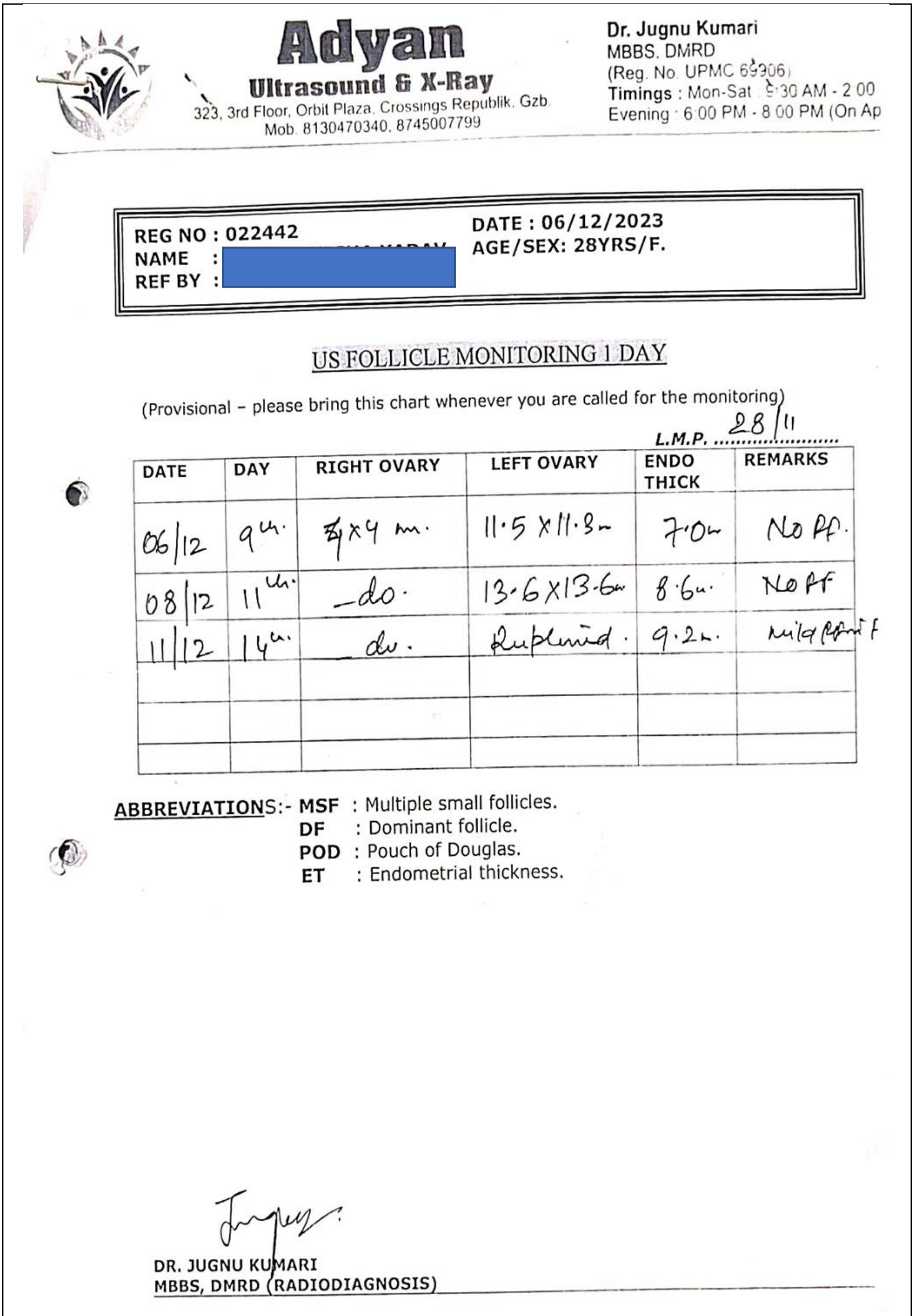
US FOLLICLE MONITORING 1 DAY

(Provisional – please bring this chart whenever you are called for the monitoring)

L.M.P. 28/08.

DATE	DAY	RIGHT OVARY	LEFT OVARY	ENDO THICK	REMARKS
08/09.	12th.	5x4m.	6x6m.	9.6m.	Mild ff. in POD.
11/09.	15th.	6x6m.	do.	9.8m.	"

Figure-1: USG follicular monitoring on 8.9.23



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REG NO : 022442
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REF BY :
DATE : 06/12/2023
AGE/SEX: 28YRS/F.

US FOLLICLE MONITORING 1 DAY

(Provisional – please bring this chart whenever you are called for the monitoring)

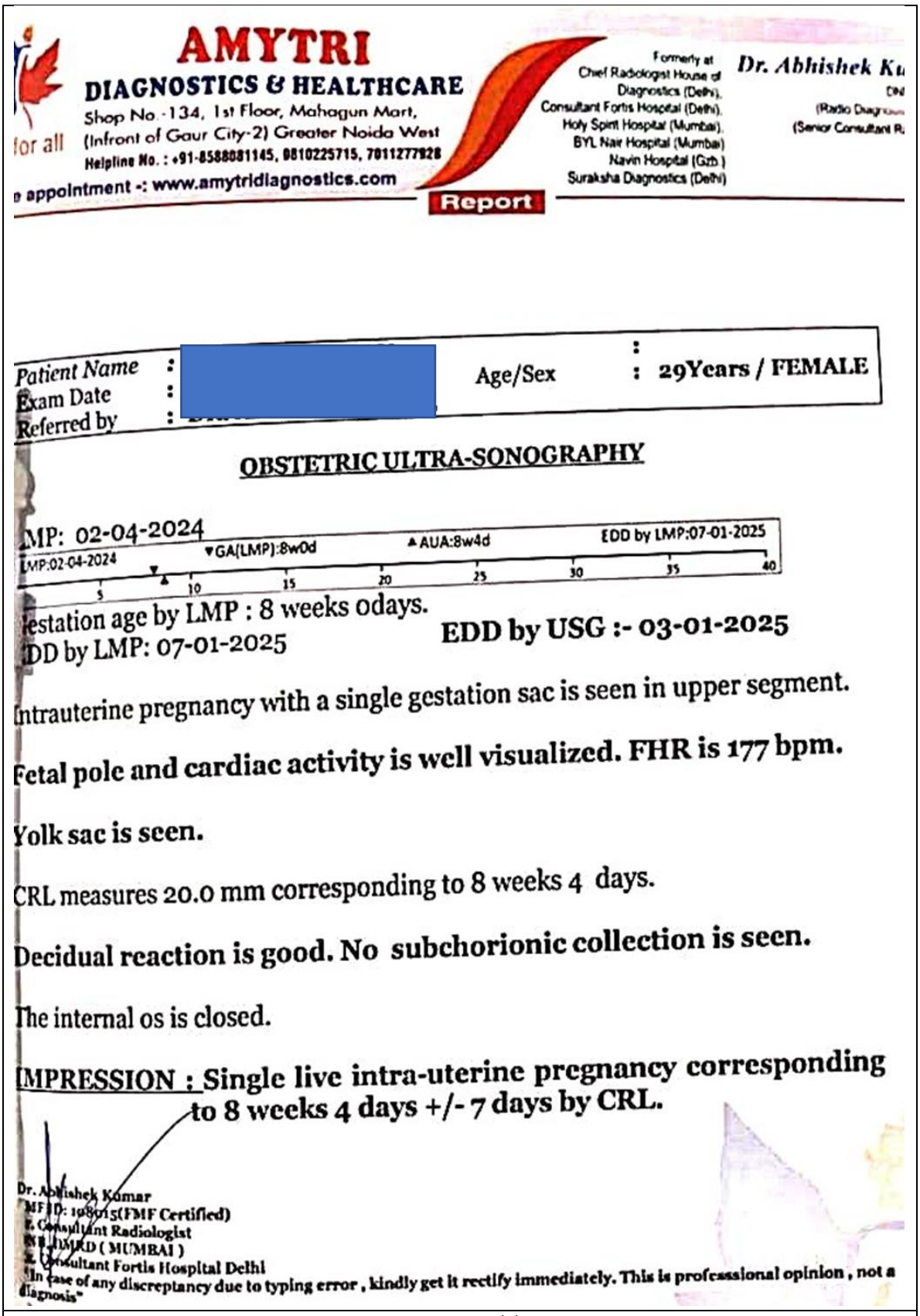
L.M.P. 28/11

DATE	DAY	RIGHT OVARY	LEFT OVARY	ENDO THICK	REMARKS
06/12	9th	3x4 mm	11.5 x 11.3 mm	7.0 mm	No FF.
08/12	11th	-do-	13.6 x 13.6 mm	8.6 mm	No FF
11/12	14th	-do-	Ruptured	9.2 mm	Mild FF

ABBREVIATIONS:- MSF : Multiple small follicles.
DF : Dominant follicle.
POD : Pouch of Douglas.
ET : Endometrial thickness.

DR. JUGNU KUMARI
MBBS, DMRD (RADIODIAGNOSIS)

Figure-2: USG follicular monitoring on 6.12.23



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Dr. Abhishek Ku
Dm
(Radio Diag
(Senior Consultant R

Report

Patient Name : [redacted] Age/Sex : 29Years / FEMALE
Exam Date :
Referred by :

OBSTETRIC ULTRA-SONOGRAPHY

LMP: 02-04-2024

Gestation age by LMP : 8 weeks 0days.
EDD by LMP: 07-01-2025 **EDD by USG :- 03-01-2025**

Intrauterine pregnancy with a single gestation sac is seen in upper segment.

Fetal pole and cardiac activity is well visualized. FHR is 177 bpm.

Yolk sac is seen.

CRL measures 20.0 mm corresponding to 8 weeks 4 days.

Decidual reaction is good. No subchorionic collection is seen.

The internal os is closed.

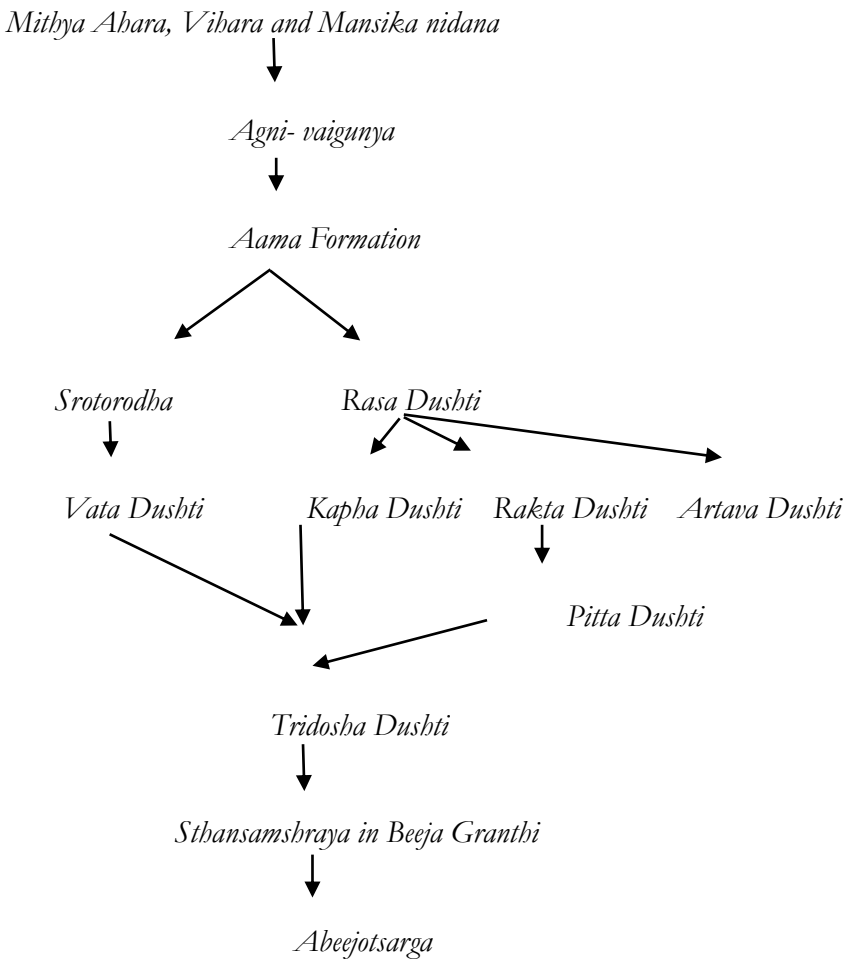
IMPRESSION : Single live intra-uterine pregnancy corresponding to 8 weeks 4 days +/- 7 days by CRL.

Dr. Abhishek Kumar
MF ID: 198015(FMF Certified)
Consultant Radiologist
MD (MUMBAI)
Consultant Fortis Hospital Delhi
"In case of any discrepancy due to typing error , kindly get it rectify immediately. This is professional opinion , not a diagnosis"

Figure-3: US after Treatment

DISCUSSION:

In the *Ksheenartva* condition, the Vitiated *Vata-Pitta* is mainly responsible, and it also resembles *Santarpanjanya Aartvakshya* in which vitiated *kapha* and *vata dosha* suppresses the *pitta dosha*. In this case, the *sanga* type of *srotodushti* and *Agnimandhya* was found which hinders the proper formation and nourishment of *Rasa dhatu,* as *Aarta* is *updhatu of rasa Dhatu*. So *Srotoduhsti* and *Agnimandhya* lead to *tridosha dushti* and *Abeejotsrga* as follows. [7]



Thus, the drug which is *kapha-vata dosha shamaka,* and which increases the *Agneya guna* of *pitta*, is required for it, hence *Rasandi Churna* was selected for the same.

Probable Mode of Action:

Basti is considered a superior treatment in *Ayurveda,* particularly for conditions related to *Vata* and *Vata-Kaphaja* imbalances. [8] It is regarded as half of the treatment process (*Ardha Chikitsa*) in Ayurvedic practice. [9] *Acharya Charaka* also emphasizes the

efficacy of *Basti* for women suffering from *Vata*-associated disorders who face difficulties in conceiving despite coitus with their partner. For such cases, *Basti* is deemed the most effective therapeutic approach. [10]

The Mechanism of *Basti Dravyas* as follows. [11]

Basti dravya administered through *Guda Marga* (Rectal route)

↓

Reaches *Pakvashya* (Large Intestine)

The Virya (Potency) of the *Basti* reaches the reproductive tract and removes all the toxins and pacifies the viatiated *doshas* and helps in correcting the normal physiology of *Aartava chakra* and also nourishes the reproductive organs & stimulates and enables the ovary to produce healthy ova.

↓

Various branches of the *Adhogami dhamani*(vessels moving downward) present in *pakvashya* absorbs the *virya* and carry it to *urdhvagami* & *Tiryakgami dhamani* & spread all over the body through micro & macro channels.

↓

Reaches *sarva sharira* (whole body)through *rasavaha* & *raktvaha srotasa* (systemic circulation) Action in *sarva sharira.*

Thus the Content of *Rasnadi churna* mainly acts on *vata-kapha doshas,* These are the main *doshas* which are responsible for Anovulation. So *rasnadi churna* pacify the vitiated *vata-kapaha dosha* which obstructs *Artvaha srotasa,* Due to its *ushna* & *teekshna gunas rasnadi churna* has *Deepana pachana* properties and helps in attaining *Agni deepti* which ultimately clear the *Aama Avastha* makes the channels *Nirama* and pacify the *Srotorodha*. Once the *Aama* eliminated the *Dhatvagni* gets stimulated and it nourishes the *Rasa dhatu* which in turn helps in *Artava* production and also helps in increases *pitta* which is responsible for the maturation of graffian follicle, aromatization process and in turn helps in improving the Endometrial receptivity. So the combination of *Rasanadi churna* may help to remove the *sanga or avarana* (obstruction) caused by the *vata* and *kapha* in the *artvaha srotasa* y promoting *aama-pachana (*digestion of incomplete chyme metobolic toxin), *Agneedeepana* (increases metabolic fire) which increases *Pitta guna* also & *vata-kaphashamaka.*

The case was managed using this approach, leading to successful outcome.

CONCLUSION:

In Ayurvedic classics, *Acharya Sushruta* has considered *Ksheenartava* under *Artava Dushti* and these *Artava dushti* can lead to *Vandhyatva* (Infertility) and in *Vandhyatava* the main culprit is *Vata*. But in this case, the *Vata-Kapha doshas* are notified which also involved the *pitta dosha*. That is why here, the *Vata-kapha* hara and *Piitajanya* treatment modality was adopted.It is managed with *Rasnadi Churna Basti* for three consecutive cycles. After completion of the treatment, significant improvement was noticed in the follicular size, it increased in every cycle and Patient got conceived in follow-up period.

The treatment was administered outpatient, with no need for hospitalisation. This study demonstrates promising results, highlighting the approach as highly effective, cost-efficient, time-saving, minimally invasive, and free from side effects. It is straightforward to perform and worthy of documentation.

Consent of patient:

The consent of the patient has been taken for publication and procedure without disclosing the identity of the patient.

Conflict of interest: The author declares that there is no conflict of interest.

Guarantor*:* The corresponding author is the guarantor of this article and its contents.

Source of support: None

How to cite this article:

Saba Naaz, Kamini Dhiman. An Ayurvedic Management in Primary Infertility Associated with Anovulatory Cycle with Diminished Ovarian Reserve: A Case Report. Int. J. AYUSH CaRe.2025;9(1): 9-19. https://doi.org/https://doi.org/10.70805/ija-care.v9i1.685

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