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Ayurvedic management of Tubal Block Infertility Associated with Polycystic Ovarian Syndrome: A Case Study

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ABSTRACT

Polycystic Ovary Syndrome (PCOS) is a common endocrine disorder in women of reproductive age, characterized by hormonal imbalances that cause irregular menstruation and ovarian cysts. A significant but often overlooked complication of PCOS is its association with tubal infertility, resulting from issues such as tubal blockages or dysfunctions, making conception more challenging. Infertility affects roughly 1 in 6 people globally, with about 70% of women with PCOS experiencing infertility, and tubal factor infertility accounting for 25-35% of female infertility cases. This case study examines the management of tubal blockage and PCOS through Ayurvedic treatments. A 36-year-old married woman with a history of PCOS reports no significant issues over the past six years of marriage, with irregular menstrual cycles. Clinical findings from a USG revealed bilateral polycystic ovaries, and an HSG indicated a blockage in the right fallopian tube. This infertility case was treated with a combination of *Shodhana* and *Shamana Chikitsa* was given to resolve the underlying *Samprapthi* from 10/7/2022 to 26/7/2023. After 12 months of treatment, the tubal blockage was resolved, PCOS had decreased, and epileptic attacks were reduced. Additionally, the absence of Reidel's lobe of the liver was noted, and the fatty liver decreased from Grade II to Grade I. The patient received a positive urine pregnancy test result on July 26, 2023, and gave birth on June 6, 2024. In this instance, Ayurveda demonstrated its reliability in treating infertility and PCOS, offering effective and holistic methods for managing these conditions.

Key words: Tubal Block Infertility, Polycystic Ovarian Syndrome (PCOS), Vandhyatva, Ayurveda

INTRODUCTION

Polycystic Ovary Syndrome (PCOS) is a complex endocrine disorder affecting women of reproductive age, characterized by hormonal imbalances that can lead to irregular menstruation, anovulation, and the

development of multiple small cysts on the ovaries. One of the lesser-known complications of PCOS is its association with tubal infertility, where the fallopian tubes are affected either directly or indirectly due to chronic hormonal disruptions.^[1]

Tubal infertility, resulting from conditions like tubal blockages or dysfunction, poses significant challenges to conception, even in the absence of ovarian abnormalities commonly associated with PCOS. Understanding relation between PCOS and tubal factors is crucial in managing infertility in affected individuals, as it demands a multifaceted approach to treatment.^[2]

Infertility impacts approximately 1 in 6 people globally of reproductive age, with consistent prevalence across diverse economic settings. This widespread health concern affects about 17.5% of adults worldwide.^[3] In India, infertility is estimated to affect 10% to 15% of the

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population, including both primary and secondary infertility cases. Among women with PCOS, infertility affects roughly 70%, while tubal factor infertility accounts for 25-35% of female infertility cases.^[4]

Overall, PCOS is a major public health concern due to its impact on fertility and the associated long-term health complications. Addressing this condition requires awareness, proper diagnosis, and effective management strategies tailored to different populations.

In this case study, tubal blockage and PCOS were managed through treatment strategies that included Shodhana (cleansing therapies), a combination of *Shamana Aushadhi* (palliative medications), and the use of some *Ekamoolika Dravyas* (single herbs).

In Ayurveda, infertility is explained as *Vandhyatva*. *Susrutha* explained factors responsible for successful pregnancy (*Garbha Sambhava Samagri*) in detail. They are *Rithu*, *Kshetram*, *Ambu*, and *Beejam*. Any abnormality in any of these four can lead to infertility. *Rithu* stands for the fertile period in the cycle. *Kshetram* represents healthy reproductive organs. *Ambu* represents proper nutrition after fertilization. It can be correlated with corpus luteal function up to the establishment of the placenta and then onwards placental function. *Beejam* stands for healthy ovum and sperms.^[5]

Acharya Charaka opines that *Soumanasyam* (peaceful mind) is the best remedy for getting a progeny.^[6] So psychological factors are also important in conception. *Arunadatta* comments '*Dimbamsyat Drakta Mamsasya Prasaadaadaantra Sambhava*'. The ovary is taken as *Kosthnga* by the name *Dimba* or *Dimbham*, formed from *Rakta* and *Mamsa*.^[7] PCOS symptoms can be correlated with conditions like *Dimba Roga*, *Jatiharini*, *Vataja Artava Dusthi*, *Artava Kshaya*, *Ksheenartava*, etc.

In this case study, tubal blockage and PCOS were managed through treatment strategies that included *Shodhana* (cleansing therapies), a combination of *Shamana Aushadhi* (palliative medications), and the use of some *Ekamoolika Dravyas* (single herbs).

CASE STUDY

Patient Information

A 36-year-old married woman from Hebbal, Bangalore, Karnataka, visited a private clinic on [31/6/2022] for primary infertility. She had previously experienced two pregnancies, both resulting in abortions (G2A2).

Chief Complaints

- No issues noted in the past six years of married life.
- Complaints of bloating, reduced appetite, increased weight (95 kgs), anxiety, irritation, and fear for the past year.

Medical History

- **PCOS:** Since 13 years.
- **Epilepsy:** Since 10 years, under medication (Levacetum 500mg: (1-0-1) A/F)
- Not a known case of diabetes, thyroid, hypertension.

Menstrual History

- Menarche: 12 years
- Irregular Cycles: Present for the past six years with a frequency of 30-60 days and a length of 7-10 days.
- Spotting noted in between the cycle for 5-10days.
- Last Menstrual Period (LMP): 10/02/2021
- Amount of Bleeding: Heavy, with 6-7pads/day on Day 1, 5-6 pads/day on Day 2, and 4-5 pads/day on Days 4 and 5.
- Clots: Present on Days 1 and 2.
- Dysmenorrhea: Mild.

Marital History

- Marital History: Since 2016
- Married age: 26 years

Personal History

- **Bowel:** Regular
- **Appetite:** Good

- **Bladder:** Regular
- **Sleep:** Normal
- **Allergy:** None
- **Food Habits:** Consumes junk foods, fried food, pastries, and ice cream.

Past Illness: None reported.

Diagnostic Assessment

Transvaginal Scan: 2nd day of period

B/L features of PCOS seen

- 30Gfs <1cm
- ENDOMETRIUM: 4mm
- POD: Clear

Hysterosalpingography (HSG) (21/1/22)

- No spillage seen on right side.
- Impression: Right tubal block

Ultrasonography: (4/4/22)

- B/L polycystic ovaries
- Reidel’s lobe of liver
- Grade II fatty liver

Treatment History

The patient underwent conventional treatments, including two cycles of intrauterine insemination (IUI) and hormonal therapy, both of which were unsuccessful. Hence, approached the clinic on June 31, 2022, for further assistance.

SN	Treatment	Number of days
1.	Udvardana	7 days
2.	Vamana	16 (including Samsarjana Krama)
3.	Internal Medication (Shamana Aoushadi)	4 months
4.	Virechana	16 (including Samsarjana Krama)
5.	Internal Medication (Shamana Aoushadi)	4 months

Treatment Plan and Timeline

A combination of *Shodhana* and *Shamana Chikitsa* was utilized to address the complexity of the case and to resolve the underlying *Samprapthi*.

SN	Treatment	Medicines used	Number of days	Commencement of treatment	Completion of treatment
1.	Udvardana	Triphala, Devadaru, Haridara	7 days	10/7/22	17/7/22
2.	Vamana	Deepana - Pachana Hinguvastaka Churna (½ Spoon with Ghritanna) Rookshana Continued with Pathya (Yava, Takra, Upma) Snehapana Varunadi Ghrita Vishrama Kaala Banana, Curd Rice, Dahi Vada, Payasa Vamana Ksheera, (Akantapana) Madanapipali-10gm, Yastiphanta, Saindava Jala Samsarjana Krama Anna Peya, Vilepi, Yavagu	3 days 2 days 4 days 1 day 1 day 5 days	20/7/22 - 6/8/22	

Shamana Aoushada given after Vamana

SN	Medicines	Treatment/ formulation	Dose	Anupana	Commencement	Completion	Duration
1.	Kanchanara Guggulu		2-0-2 (after food)	With Varunadi + Sukumara	15/8/22 - 20/12/22		4 months

				Kashaya	
2.	Varunadi Kashaya		20ml-0-20ml (after food)	With equal warm water	
3.	Sukumara Kashaya		20ml-0-20ml (after food)	With equal warm water	
4.	Brahmi Ghrita	Pratimarsha Nasya	2drops - 0 - 2drops Early morning and night		

Virechana

Procedure	Treatment	Ingredients	Number of days	Commencement - Completion of treatment
Virechana	Deepana-Pachana	Musta-Shunti Jala	3 days	5/3/23 - 21/3/23
	Snehapana	Maha Kalyanaka Ghrita	4 days	
	Vishrama Kaala	Ganji, Pongal With Pomegranate-1 Each Day Lemon Juice	3 days	
	Virechana	Trivrut Lehya - 50gm	1 day	
	Samsarjana Krama	Laja Peya, Anna Manda,	5 days	

		Vilepi, Yavagu		
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Shamana Aoushada given after Virechana

SN	Medicines	Treatment/ formulation	Dose	Anupana	Commencement	Completion	Duration
1.	Bhrami Taila	Shiro Pichu	Alternate days	-	25/4/23 - 26/8/23		4 months
2.	Bhrami Ghrita	Pratimarsha Nasya	0 - 0 - 2drops Night (Nishikaala)				
3.	Yastimadhu	Ksheerapaaka	50ml	-			
4.	Yastimadhu +Shatavari Ksheerapaka	Ksheerapaaka	50ml	-			
5.	Shatavari (rub the fresh root with milk on stone)	Lehya	1tsp	Milk			
6.	Mahakalyanaka Ghrita	Ghrita	2tsp	Yasti+ Shatavari Ksheerapaka			

Lifestyle Modification (Based on Dinacharya)

- Regular Yoga practice: 1 hour each morning

- *Abhyanga*: Every morning before taking bath
- Consuming *Satmya Pathya Ahara* (healthy food)
- Reading books: 1 hour per day
- *Dhyana/Deva Nama Japa*: 30 minutes each early morning and before bedtime
- *Pada Abhyanga*: performed at bedtime

OBSERVATIONS AND RESULTS

- No spotting observed
- Regularisation of periods with frequency of 30-35days
- No clots present.

Ultrasonography (27/3/23)

- Grade I Fatty liver
- Mild polycystic pattern of both ovaries

Hysterosalpingography (Hsg) (21/4/23)

- Both tubes are patent with good spillage.
- IMPRESSION: Right tubal block.

Hsg Report

Before Treatment

Age: 33 yrs
Sex: Female
Date: 21.01.2022

Technique:
HSG was performed after injecting 20 ml of ionic contrast medium into the uterine cavity

Findings:
Uterus outlined clearly.
Left tube spillage seen.
Right tube partially seen.
No spillage on right side.

IMPRESSION:
➤ Right tube block.
Needs further evaluation by laparoscopy.

After Treatment

UHD | Episode No : 12434...
Order No | Order Date : 11/11/2022
Admitted On | Report Date : 21-Apr-2023 17:42:11
Order Doctor Name : Dr.RR Phyllina

HYSTEOSALPINGOGRAPHY

EXAMINATION: XR – HSG (HYSTEOSALPINGOGRAPHY/ TUBAL CANNULATION)

Ref by : Dr. Devika
Clinical data : Primary, secondary (A2)
Prev HSG: 21/01/2022
TB/Endometriosis/PID: Nil.
Prior Surgery/Lap : Nil.

Uterine cavity: Normal in size, shape and contour.

Rt tube:
Normal proximal and mid tube.
Ampullary coiling, clumping.
Distal folds preserved.
Fimbrial end normal.
Tubal pressures not elevated.
Good spill seen.

Lt tube:
Normal proximal and mid tube.
Ampullary coiling, clumping, mild dilatation.
Distal folds preserved.
Fimbrial end normal.
Tubal pressures not elevated.
Good spill seen.

IMPRESSION:
1. Both tubes are patent with good spillage. There appears to be peritubal adhesions.
2. Category 2A.

Pregnancy Report

- Last Menstrual Period (LMP): June 26, 2023.
- Urine Pregnancy Test (UPT): Positive on July 26, 2023.
- Ultrasound (USG) Report: November 7, 2023.
- Estimated Due Date (EDD): June 1, 2024.

IMPRESSION:

- Single intra uterine live fetus of 14 weeks 5 days gestational age.
- No obvious early fetal anomalies at present gestational age.
- Estimated gestational age correlates with LMP dates.
- Uterine artery doppler shows normal mean PI -Screening Negative For PE/Early onset IUGR.

Suggested follow up at 20 weeks for detailed anomaly scan.

NOTE: Not all anomalies can be detected on sonography.
I, Dr SHASHIDHARA S, declare that while conducting ultrasonography on Mrs. ANUSHRI S A I have neither detected nor disclosed the sex of her fetus to any body in any manner.

DISCUSSION

PCOS is a disorder involving *Kapha-Pitta Doshas, Rasa, Medo, Shukra (Arthava) Dhatu and Rasa, Rakta, and Artava Vaha Srotas.*^[8] Formulations Such as *Hingvashtaka Churna, Kanchanara Guggulu, Varunadi Kashaya, and Ghritha* are used, Especially

after *Vamana*. These formulations predominantly feature *Katu-Tikta-Kashaya Rasa*, *Ushna Virya*, and *Katu Vipaka*, with common actions of *Kapha-Medohara* and *Lekhaniya Karma*. Research has shown that these formulations can regulate hormonal levels and enhance menstrual regularity. Additionally, their anti-inflammatory properties aid in reducing inflammation, improving insulin resistance in PCOS by boosting metabolism.^[9] They also help in lowering cholesterol levels, which is beneficial for women with PCOS who often struggle with lipid metabolism and obesity.^[10] The detoxifying effects can help clear blockages in the reproductive organs, potentially boosting fertility.^[4] Furthermore, the antioxidants in these formulations reduce oxidative stress and are associated with improved fertility outcomes.^[11]

Additionally, *Sukumara Kashaya* helps with PCOS and infertility by regularizing menstrual cycles, which improves ovulation and boosts fertility.^[12]

It also enhances blood circulation to the reproductive organs, providing better nourishment, reducing period cramps, and improving overall reproductive health.^[13]

Mahakalyanaka Ghritha was administered as both *Shodhana* and *Shamana Aushadi* due to its effectiveness in treating both *Vandhyatwa* (infertility) and *Apsmara* (epilepsy).^[14] It contributed to reducing epileptic attacks, alleviating anxiety and fear, and enhancing fertility. Research indicates that it has neuroprotective effects, providing a calming and stabilizing impact on the nervous system, and improves fertility by enhancing the quality of reproductive tissues and overall reproductive function.^[15]

Shodhana procedures like *Udvardana* and *Vamana* can effectively balance hormonal levels and alleviate symptoms of PMS and PCOS by improving insulin resistance, boosting metabolism, managing weight, and enhancing overall reproductive health.^[16] These therapies address tubal blockages through *Sroto Shodana*, *Deha* and *Kshetra Shodhana*, and strengthening the *Dhatu*s and *Beeja*.^[17]

Kashyapa states that *Akarmanya Beeja*, which is associated with anovulation, is best treated with

Virechana. He quotes "*Beejam Bhavathi Karmukam*," meaning that *Virechana* enhances effectiveness or trajectory outcome of the action of the *Beeja* (sperm and ovum). As a result, it positively affects germ cells and improves their quality.^[18]

Yastimadhu: (*Shonithasthapana*, *Medhya Rasayana*) was given in the form of *Ksheerapaaka*. *Yastimadhu* is known for its adaptogenic properties, which help in balancing hormones.^[19] It has phytoestrogens that can mimic the action of estrogen, thus potentially aiding in the regulation of menstrual cycles and improving ovulation and help to ease symptoms of PMS and PCOS. It helps in maintaining a healthy endometrial lining, which is essential for implantation and successful pregnancy.^[20]

Shatavari: (*Vrushya*, *Rasayana*). *Shatavari* is renowned for its uterine tonic properties. It strengthens the uterine muscles and enhances the endometrial lining, which is crucial for implantation and sustaining pregnancy.^[21] The mucilage in *Shatavari* tones and protects the mucous membranes of the cervix, helping it produce sufficient mucus to facilitate sperm and egg fertilization.^[22]

Bhrami: (*Prajasthapana*, *Medhya Rasayana*) was given in the form *Ghritha* and *Taila*. *Brahmi* rich in antioxidants like bacosides supports reproductive health by reducing oxidative damage and alleviating psychological stress, which in turn decreases oxidative stress (OS). It helps regulate the hypothalamic-pituitary-ovarian axis and supports ovulation.^[23]

Initially, *Shamana Aushadis* used before and after *Vamana*, with *Lekhaniya* properties, helped reduce weight, leading to a decrease in the size and number of cysts, alleviation of inflammation in the reproductive organs, and clearance of blockages in the fallopian tubes. After *Virechana*, *Rasayana Dravyas*, known for their nourishing qualities, were chosen to support the maintenance of the endometrial lining, essential for implantation and successful pregnancy. Additionally, these *Dravyas*, with their *Rasayana* and *Medhya* effects, also contributed to a reduction in epileptic episodes.

CONCLUSION

Treating the present case with necessary *Shodana* (purification therapies), along with *Ekamoolika Dravyas* (single-herb formulations), and incorporating counselling and lifestyle modifications facilitated *Samprapti-Vighatana* (breaking the pathogenesis) by promoting *Aartavajanana* (enhancement of menstrual function), *Sroto Suddhi* (purification of channels), *Kshetra Suddhi* (purification of the reproductive organs), and *Prajasthapana* (promoting fertility). Regular monitoring and patient adherence to the treatment plan were essential for achieving successful outcomes. Tailoring treatments according to the patient's progress ensured effective therapy. Following 12 months of treatment, the patient found a positive urine pregnancy test result on July 26, 2023 and gave birth on June 6, 2024. In this instance, Ayurveda demonstrated its reliability in treating infertility and PCOS, offering effective and holistic methods for managing these conditions. Ayurveda also holds potential for further adaptation to address similar cases in the future.

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