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Fertility with Ayurveda - A Single Case Study on Treatment of Primary Infertility due to Tubal Blockage with Polycystic Ovarian Syndrome

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ABSTRACT

Infertility associated with Polycystic Ovarian Syndrome (PCOS) is a major cause of concern in the present generation among the reproductive age groups due to unhealthy lifestyles in the modern era. This is a case report of an infertile couple who had not been able to conceive for 4 yrs. The female was diagnosed with PCOS with left tubal blockage. The objective of the present treatment included Ayurvedic management of PCOS, ensuring regular ovulation and thereby helping to develop healthy pregnancy and successful childbirth. Based on Ayurvedic science this case was diagnosed as Vandhyatva (Infertility) due to Nashtartava (that can be related with Polycystic ovarian disease) And Tubal blockage that can be related with Artava Vaha Strotosangha. This research paper presents a case study of the effectiveness of a comprehensive Ayurvedic treatment approach involving Uttarbasti with Kasisadi Tail along with oral medicines i.e., Pushpadhanva Ras and Kanchnar Guggulu as major medications in the successful treatment of a primary infertility patient having history of Polycystic Ovarian Syndrome (PCOS) And Tubal blockage. In Ayurveda primary infertility can be correlated with Anapatya type of Vandhyatava and its causative factor PCOD can be correlated with Nashtaartava as per Sushrut and Pushpaghnijataharni as per Kashyap and tubal blockage as Sanga variant of Artavavaha Strotodushti. Treatment plan included both Shodhana (Purification) and Shamana (mitigation) therapies. The outcome of the Ayurvedic intervention was the conception of the patient within 1 year of treatment.

Key words: Ayurveda, Vandhyatva, Nashtartava, Uttarbasti, Pushpadhanva Ras, Kanchnar Guggulu, Primary Infertility, Polycystic Ovarian Syndrome, Case Study.

INTRODUCTION

Polycystic Ovarian Syndrome is a condition that has cysts on the ovaries which prevents ovaries functioning normally. Symptoms of Polycystic Ovarian Syndrome include Amenorrhea or irregular menstruation and bleeding pattern, anovulation, multiple immature follicles, increased levels of male hormones, male pattern baldness or thinning hair, excess facial and

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body hair growth, acne, oily skin or dandruff, dark coloured patches of skin specially on neck, groin, underarms, chronic pelvic pain, increased weight or obesity, diabetes, lipid abnormalities and high blood pressure.^[2]

Primary infertility affects a significant portion of the population, and one of its underlying causes is Polycystic Ovarian Syndrome (PCOS). Around 48 million couples and 186 million individuals live with infertility globally. 1 in 7 couples need specialist help to conceive, including some couples who have conceived before. Prevalence of infertility has not changed although more couples are seeking help than previously. Infertility can be primary or secondary. An estimated 1 in 10 women between the ages of 15 and 44 have trouble conceiving.^[5]

NEED OF STUDY

According to WHO-

Polycystic ovary syndrome (PCOS) affects an estimated 8–13% of reproductive-aged women.

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- Up to 70% of affected women remain undiagnosed worldwide.
- PCOS is the commonest cause of anovulation and a leading cause of infertility.
- PCOS is associated with a variety of long-term health problems that affect physical and emotional wellbeing.
- PCOS runs in families, but there are ethnic variations in how PCOS manifests itself and how it affects people.^[6]

Infertility has significant negative social impacts on the lives of infertile couples and particularly women, who frequently experience violence, divorce, social stigma, emotional stress, depression, anxiety and low selfesteem.

Fertility problems experienced by women with Polycystic Ovarian Syndrome may be related to the elevated hormone, insulin or glucose levels, which can interfere with ovulation, implantation as well as development of the embryo. Increased Luteinizing hormone reduces the chance of conception and increases miscarriage. Additionally abnormal insulin levels may also contribute to poor egg quality, making conception more difficult.^[2]

Ayurveda has great potential for the management of various Infertility causing factors including Poly Cystic Ovarian Syndrome and Tubal blockage. There is no absolute treatment available in other pathies for this kind of cases, so this study was carried out to evaluate the efficacy of *Ayurveda* treatment regimen in this particular case of primary infertility due to Polycystic Ovarian Syndrome with unilateral tubal blockage.

LITERATURE REVIEW

Polycystic ovarian syndrome (PCOS) was originally described in 1935 by Stein and Leventhal as a syndrome manifested by amenorrhea, hirsutism and obesity associated with enlarged polycystic ovaries. This heterogeneous disorder is characterized by excessive androgen production by the ovaries mainly. PCOS is a multifactorial and polygenic condition.

Infertility is defined as a failure to conceive within one or more years of regular unprotected coitus.^[14]

In Ayurveda different Acharya's have described various disorders whose sign and symptoms can be correlated with PCOS i.e., *Nashtaartava* mentioned by *Sushruta Samhita* and *Ashtanga Sangraha*, *Pushpaghnijataharni* by *Kashyap Samhita*. *Nashtaartava* is characterized by absence of *Artava* due to obstruction of *Yoni Marga* by vitiated *Dosha*. Mainly *Vata* and *Kapha Dosha* vitiation is mentioned as cause of *Nashtaartava*.^[7]

Tubal blockage is one of the most important factors for female infertility. This condition is not described in Ayurvedic classics, as the fallopian tube itself is not mentioned directly there. Correlating fallopian tubes with the Artava Vaha (Artava-Bija-Vaha) Srotas, its blockage can be compared with the Sanga Sroto Dushti of Artavavaha Srotas.^[13]

Srotas (channels) are defined as transporting passages of *Dhatus* undergoing transformation.^[19] *Artavsrotas* are the channels which carry *Artava* to *Garbhashaya*.

Artava Kshaya, According to Sushruta Samhita, vitiated Dosha causes obstruction in Arta Vaha Srotas leading to Nashtaartava. Nashtaartava occurs due to Vata Kapha Vriddhi and Pitta Kshaya.^[20]

Thus, it is crystal clear that any organ or bodily structure must be under the umbrella of any one of the Srotamsi, and accordingly an attempt has been made to understand the fallopian tubes as Artavavaha Srotas, as described by Sushruta.^[9] These are two in number having roots in the Garbhashaya and Artavavahi Dhamnis, injuries to which causes Bandhyatva (infertility), Maithun Asahishnuta (dyspareunia), and Artavanasha (anovulation or amenorrhea). It is compared with uterine arteries, especially their capillary bed, because these arteries are responsible for carrying menstrual blood, which is compared to Artava in several places, and injuries to these vessels may cause infertility.[10,11]

Bandhyatva as a disease entity is described in Harita Samhita.^[12] However, Harita has defined Bandhyatva as failure to get a child rather than conception, as he has included Garbhasravi (Habitual abortions) and Mritavastha (still birth) also under his classification. He has described six types of Bandhyatva: (1) Kakabandhya (secondary infertility) - a woman who

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does not conceive after giving birth to one child; (2) Anapatya (primary infertility) - a woman, who never conceives; (3) Garbhasravi - a lady, who suffers from habitual abortions; (4) Mritavatsa - a woman, who repeatedly gives birth to stillborn babies; (5) Dhatu Kshaya - a woman, who does not conceive because of losing the Bala or strength, and (6) Infertility due to Garbhasamkocha caused by coitus with a girl before menarche (Ajatarajasa).^[12]

Among all types of *Bandhyatva* described by *Harita*, *Garbhasravi* and *Mritavatsa* cannot be considered as *Bandhyatva* caused by tubal blockage, because true infertility is not seen here. *Anapatya* and *Kakabandhya* are the primary and secondary types of infertility respectively, and tubal blockage can lie behind these disorders along with several other possible causes.^[13]

Thus, the fallopian tube is the Kshetra of Garbhadhana and is guite near to the Artava Vaha (Artava-Bija-Vaha) Srotas, as it carries the gametes before and the zygote after fertilization. Although, Bandhyatva caused by fallopian tube blockage is not mentioned in Ayurveda directly, it can be understood by collecting all the disorders, where it can be assumed to be either an underlying cause (some types of Bandhyatva and Jataharini) as a complication (some Yonivyapada, Artavadushti, Asrigdara, Rati-Janya Vikara). Tubal blockage can be understood in terms of Prakriti, Adhisthana, Linga, and Aayatana, as advocated by Charaka. Bandhyatva caused by tubal block is a Krichhrasadhya, Pakvashayottha Vyadhi with Daruna Bala, and finds Adhisthana in the Sharira and can be caused by both the Nija as well as the Agantuja etiological factors. It seems to be a Vata dominated Tridoshaja Vyadhi, where Kapha can be another dominant Dosha. Hence, local instillation by Intrauterine Uttar Basti of Vata Kapha Shamaka and Tridoshaqhna drugs with Sukshma, Sara, Katu, Ushna, and Pramathi properties can be helpful to remove the blockage and to restore the tubal functions.^[13]

ΑιΜ

To present a case study on the use of *Ayurvedic* therapies, specifically *Uttarbasti* and oral administration of *Pushpadhanva Ras*, in combination

with *Kanchnar Guggulu*, along with other medicines as a holistic approach to treat *Vandhyatva* i.e. Primary Infertility, PCOS and tubal blockage.

OBJECTIVES

- 1. To study the effect of *Uttarbasti* with *Kasisadi* oil in the treatment of tubal blockage.
- To study the probable mode of action of drugs. Such as Kanchnar Guggulu, Pushpadhanwa Ras and Ashoka Kwath in the treatment of PCOD
- 3. To study the role of *Vatakaphashamak* treatment for treating *Nashtaartava*.

CASE PRESENTATION

Patient history and diagnostic assessment

A 29 year old female patient came with the complaint of primary infertility for 3 years. The female patient had following symptoms:

- Scanty Menstruation: The female experiences oligomenorrhea, characterized by unusually light and infrequent menstrual periods. This is indicative of disruptions in the normal menstrual cycle, potentially affecting ovulation and fertility.
- Irregular Menstrual Cycles: The menstrual cycles exhibit irregularity, marked by unpredictable variations in cycle length and timing. Such irregularities can hinder accurate ovulation prediction, reducing the chances of successful conception.
- Polycystic Ovarian Syndrome (PCOS): The female has been diagnosed with PCOS, a common endocrine disorder. PCOS is characterized by hormonal imbalances, multiple small cysts on the ovaries, and can lead to irregular menstruation, anovulation (lack of ovulation), and difficulties in achieving pregnancy.
- Left Fallopian Tube Blockage: Diagnostic evaluation reveals the presence of a blockage in the left fallopian tube. This obstruction can impede the passage of a fertilized egg from the ovary to the uterus, diminishing the likelihood of natural conception.

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 Complex Ovarian Condition (Left Ovary): A left ovarian complex is observed, indicating the presence of structural anomalies, cysts, or other irregularities. Such complexities can interfere with normal ovarian function and ovulation.

Then the *Ayurvedic* treatment approach began and continued for a year.

The basic treatment protocol includes *Vata Kapha Shamak* medicines and procedure in order to treat primary infertility due to tubal blockage along with polycystic ovarian syndrome as we found at primary infertility was related with *Anapatya Vandhyatva*.

Menstrual history

Patient attained menarche at 12 years of age

LMP - 1/9/2022

M/H - 5-6 days /40-45 days

Detailed menstrual history

Regularity	Irregular
Pain	Aggravates during menses
Abdominal pain	Persistent mild pain
Clots	Small coin shaped clots
Number of pads per day	2-3 pads

Various investigations have made before treatment

- 1. Ovarian factor Normal
- 2. Endometrial disease not found
- 3. No anatomical disturbance was found in the investigations
- 4. Semen analysis was normal.
- 5. Tubal factor was found to be blocked

Characteristics of infertility

Infertility is characterized by the inability of a couple to conceive after one year of regular, unprotected intercourse. In this case the couple was trying to conceive for more than 2 years.

Diagnostic results before treatment

- 1. TVS (Transvaginal Sonography) dated 18-10-2022 reveals
- Bulky right ovary showing polycystic echo pattern with largest dominant follicle of 19.6mm in diameter seen in right ovary.
- A complex cystic structure of size 47.4 × 37.4 mm seen in left and adnexa adjacent to the left ovary containing septations and nodules in it -Hydrosalpinx
- Nabothian cyst of size 8.5mm seen in cervix
- Left ovary shows tiny immature follicles.
- Uterus appears normal in size, shape and echo structure ET = 9.6mm
- 2. Follicular maturation study (single scan) dated 4-6-2022 reveals
- Uterus Anteverted, Measures 8.10 × 2.85 × 4.12cms it is of normal size
- Adnexa bilateral ovaries are normal right ovary measures 3.2cms in diameter, left ovary measures 4.1cms in diameter.
- 3. Thyroid hormone dated 26-10-2022 reveals
 - T3 1.41 Normal (0.80-1.90) ng/ml
 - T4 9.43 Normal (4.50-12.00) ug/dl
 - TSH 1.97 Normal (0.30-5.50) mIU/ml
- 4. HSG (Hysterosalpingography) Dated 7-11-2022 reveals
 - Left fallopian tube block

METHODOLOGY

Ayurvedic treatment protocol

Treatment plan included both *Shodhana* (Purification) and *Shamana* (mitigation) therapies. The major treatment includes *Uttarbasti* with *Kasisadi* oil, *Kanchnar Guggulu* and *Pushpadhanva Ras* and *Ashoka Kwath* along with other medications.

Kanchnar Guggulu

Contains Kanchnar (Bauhinia variegata) bark, Guggulu (Commiphora wightii) resin, and various herbs and minerals. Its intake helps to balance Kapha and

promotes the healthy function of *Agni* (digestive fire) because of its *Kapha* balancing nature. Improves the functioning of ovaries.

Pushpadhanva Ras

It contains *Pushrpadhanva Ras* contains various minerals, herbs, and metallic compounds such as *Swarna* (gold) and *Rajata* (silver). All the ingredients have *Tridosha*. *Nashak* properties which act pinpointedly in *Samprapti Vighatana*.

Ashok Kwath

Ashok Kwath is an herbal decoction that typically includes Ashoka (Saraca asoca) bark, Lodhra (Symplocos racemosa) bark, and other beneficial herbs. Effect of Ashoka is Kapha Pitta Shamak and hence it is used to balance Kapha and Pitta Dosha here. Ashok decoction acts as a tonic for the endometrium and many diseases of the uterus.

Uttarbasti

Procedure: Uttarbasti is an Ayurvedic Panchakarma procedure that involves the administration of medicated oils, ghee, or decoctions through the vaginal or urethral route. The Srotoshodhak property treats Strotosangha.

In this case *Kasisadi* oil was used for *Uttarbasti* procedure. The *Uttarbasti* procedure was done for 3 days consecutively just after the bleeding phase of menstrual cycle.

1. Monitoring follow-up and Treatment Regimen

Date	Observations/ remarks	Treatment
21-10- 2022	Want to conceive for 2.5 years.	 Kanchnar Guggulu Ashok Kwath Panchola Churna + Haritaki Churna + Yavani Churna
7-11- 2022	Want to conceive previous diagnosis reveals history of PCOD (Polycystic ovarian disease)	Treatment repeated <i>Phaltrikadi Kwath</i> added in the treatment regimen.

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	T3, T4 and TSH was found to be under normal parameters. Scanty bleeding	
6-12- 2022	Relief in scanty bleeding HSG reveals left fallopian tube block	Treatment repeated Pushpadhanva Ras and Nashtapushpantak Ras added.
4-1- 2023	Follow up	Treatment repeated Ashokarishta added to the treatment regimen and Ashok Kwath and Panchokoladi Churna discontinued.
6-2- 2023	Follow up L.M.P 2/2/2023 P.M.P 1/1/2023	 Kumaryasava, Laxmanaras was added in the treatment regimen Matra Basti with Mahanarayan Tail Anutail Nasya Uttarbasti recommended for 3 days First sitting - Uttar Basti with Kasisadi oil
7-2- 2023		 Second sitting - Uttarbasti with Kasisadi oil
8-2- 2023		 Third sitting - Uttarbasti with Kasisadi oil
28-4- 2023	Follow up L.M.P 16/4/2023 P.M.P 5/3/2023	Treatment repeated Avipattikar Churna added as per underlying complaints. Uttarbasti sittings completed

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1-11- 2023	Amenorrhea for 2 months along with associated complaints of cough and cold for 4-5 days.	Sitopaladi Churna, Prajasthapak Gan along with folic acid tablets were
	Urine pregnancy test was found positive.	prescribed.

Along with above medications other *Viharaja Karma* are also instructed to the patient.

- Kapalbhati Pranayama regular Kapalbhati is good for the uterus as it improves blood circulation and regulates hormones in our body.
- Yoga for weight loss increases metabolic activity of the body
- Dietary factor patient was instructed to avoid rice, high fibre fruits and whole grains were suggested for diet.

Diagnostic results after treatment

- 1. Abdominal Sonography dated 21-10-2023 reveals
- Bulky uterus showing intrauterine single gestational sac with live embryo with cardiac activity.
- G.S. 18.48mm, H.R. 176/ Min Regular
- Total average gestational age 6 week 5 day

RESULTS

The research paper presents a single case study on the treatment of primary infertility in a female patient diagnosed with Polycystic Ovary Syndrome (PCOS). The therapeutic approach involved a one-year regimen of Uttarbasti, utilizing Kasisadi oil and Kanchnar Guggulu, in conjunction with Pushpadhanva Rasa. The study reported a successful outcome with the patient achieving conception. Furthermore, notable improvements were observed in the patient's menstrual cycle, including the resolution of symptoms related to scanty and delayed menses. This case study highlights the potential efficacy of this integrated Ayurvedic treatment protocol in addressing PCOSrelated primary infertility and associated menstrual irregularities.

Abdominal Sonography reveals presence of 6 week 5 day old embryo hence successful conception achieved after holistic treatment approach.

DISCUSSION

Probable mode of action of intrauterine *Uttarbasti* on tubal blockage

While analyzing the effect of *Uttarabasti* on tubal blockage, highly significant results show the potency of the drugs used and also the efficacy of *Uttarabasti*. It is clear that its action on various disorders is in two ways, local as well as systemic. In case of tubal blockage, this effect seems to be more local than systemic. *Kasisadi Taila* is *Vranashodhaka*, *Vranapachaka* and *Krimighna*. In addition, its specific action also helps in *Garbhashaya Shodhana* and *Yonishulaprashamana*. These properties indicate its antiseptic as well as antiinflammatory actions. Its *Vyavayi* and *Vikasi Guna* show its potency to enter in minute channels and spread easily. Thus, the best medium for any drug to reach in tubal cavity and remove the blockage.^[4]

Kasisadi Taila exhibits Vranashodhana and Arshashatana activity. Generally, Kasisa is not soluble in the oil but in Kasisadi Taila the particles of Kasisa i.e., Fe++ and So4- were found present. It indicates that we can utilize the properties of Kasisa i.e., Astringent/Sankochak and Vatakaphahara externally with the help of this oil preparation.

In this case major vitiated *Dosha* are *Vata* and *Kapha* so this *Tail* was found to be effective in treatment of PCOD.^[15]

Probable mode of action of the Kanchnar Guggulu

As mentioned in Sharangdhar Samhita, Madhyam Khand, Kanchanar Guggulu is therapeutically important for the management of Gulma (Abdominal lump), Apachi (Chronic lymphadenopathy / scrofula), Granthi (Cyst), Vrana (Ulcer). By virtue of its Lekhaneeya Guna & anti-inflammatory property helps in reducing the size and arrest the further growth of existing cyst.

Probable mode of action of Pushpadhanva Rasa

In *Rasatarangini*, improper growth of ovaries, fallopian tubes leading to *Vandhyatva* is mentioned as an indication of *Pushpadhanva Rasa*.

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- It contains Naga Bhasma it performs the Karmas namely, Lekhana, Deepana, Stambhana, Firanga, Shotha, Yoni and Guda Kandu are mentioned as its indications in Classics.
- It contains Vanga Bhasma which acts as Garbhashaya Chyutihara, Kamavardhana, Karshyahara, Vranahar, Raktapittaghna and Agnimandya Hara.
- Most of the ingredients of Pushpadhanva Rasa, have Tridosha Nashaka properties.^[18]

CONCLUSION

The results suggest that *Kasisadi Taila Uttarabasti* is a safe and efficacious measure in the management of infertility due to tubal blockage. Chances of complications during this procedure are negligible if proper antiseptic and aseptic care is taken before, during and after the procedure. Conception within the follow-up period shows high chances of pregnancy if other factors of infertility are managed. Hence, it can be said that *Uttarabasti* may replace microsurgeries in the management of tubal infertility in near future.

The case study highlights the effectiveness of *Uttarbasti* and oral administration of *Pushpadhanva Ras,* complemented by *Kanchnar Guggulu,* in the successful treatment of primary infertility in a patient with a history of PCOS. The findings underscore the potential of Ayurvedic therapies and integrative approaches in addressing complex reproductive health issues.

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