

CASE STUDY

Management of Lean PCOS with *Bandhyatava* by *Brihana Chikitsa* and *Snehana Nasya*: A Case Report

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ABSTRACT

Background of the Study- Infertility has a significant social impact on the lives of women, who frequently experience social stigma, emotional stress, depression, etc. The problem of infertility is fairly common in today's scenario, and it has become a need of the hour to find out a solution that is less complicated and affordable. Ayurveda supports the body's own self-healing and balancing mechanism and doesn't rely on intervention in the form of hormone replacement. Infertility always exist with other problems that is evident from the case of a 31-year-old woman who reported to the PTSR outpatient department (OPD) with the complaint of inability to conceive in the last three years. Her previous Ultrasonography suggested a normal uterus with PCOD. Her BMI was found below normal, which indicates she was underweight (*Krish*). PCOS may be seen in both underweight and overweight females. PCOS is an expression of disturbed H-P-O axis and is generally associated with *Dhatvagnimandya*, it may lead to infertility. So, the management of PCOS in lean and thin (*Krish*) should be targeted at *Agnideepana*, *Pachana*, *Vatanulomna*, and *Bhrmana Chikitsa*. **Result-** Patient achieved conception. **Conclusion-** Thus, Dhatu kshaya is an important aspect that should be considered while treating the case of infertility. Along with it, the importance of Bhraman chikitsa with Nasya in case of Lean PCOS is established.

Key Words *Infertility, Dhatukshya, Krisha, BMI, Vatanulomana*

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INTRODUCTION

Bandhyatva (Infertility) means inability to conceive after 1 year of unprotected intercourse or unable to give birth to a term live baby according to *Ayurveda*. It is due to the predominant *Vata Dosha* and is also mentioned in *Rasdhatu Pradoshaja Vikar*¹. It is considered

as *Yonivyapad*² as per *Acharya Sushruta and Madhavkara*, while *Charka* mentioned it as a consequence of the abnormality of *bija*³. *Acharya Kashyapa* has mentioned *Bandhyatva* as one of the 80 disorders of *Vata*.

Infertility is a common problem that gynecologists have to face in day-to-day practice. It disturbs the social and family life of a woman

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and affects her mental and physical health. Woman of reproductive age who has not conceived after one year of unprotected vaginal sexual intercourse is defined as infertile⁴. It generally collaborates with ovulation disorder along with H-P-O axis disturbance and a disturbed menstrual cycle.

The major cause of infertility is PCOS nowadays, which leads to anovulation or oligoovulation. In classics, all gynecological problems can be incorporated in *Yonivyapad* and *Aartav Dushti*. *Vata* is a major factor for *Yonivyapad*, or we can say there is no existence of *Yonivyapada* without *Vata*⁵. PCOS is not described as an individual disease in Ayurveda, but according to its clinical features and etiopathogenesis, it may be correlated with *Artava-Kshaya* in which *Vata* and *Kapha* doshas are vitiated. *Artavkshaya* also occurs as a consequence of *Dhatu Kshaya*. PCOS is basically a lifestyle disorder.

In the present era, dietary habits of people have been mutated which, often leads to either obesity or extreme emaciation. Acharya *Charaka* also mentioned that *Atikrishta* occurs due to indulgence in *Vataja Aahara-Vihara*. Out of *Astha Nindit Purusha*, *Atikrish*⁶ is also an important condition which is mainly overlooked, and one only talks about the *Atisthaulya* condition. It is rarely listed among diseases, but it is a complication of any disease or may be associated with a diseased condition. It may be said that *Karshya* is a lean and thin-looking person, having no other complaint and if *Karshya* persists for a longer period than it may lead to

Atikarshy. *Karshya* is a condition that involves an insufficient supply of nutrients to *Dhatu*s in any stage of life or due to *Dhatvagnimandya* that may lead to improper *Rasa Dhatu Poshan* and *Utrotter Dhatu Kshaya* or *Dushti*. *Artava* is formed by *Rasa Dhatu*⁷. Thus, *Rasa dhatu Kshaya* ultimately leads to *Artava Kshaya* or *Artava Dushti*. In our text, symptoms of *Atikrish* are mentioned i.e., *Shushaksphigudargreeva* (Emaciated buttock, abdomen, neck), *Dhamni Jalsantata* (Prominent vascular network), *Ksham Swar* (Weak voice), *Vatagadatur* (suffering from *Vataja Vikaras*), *Usnasheetashaishnuta* (Intolerance to heat and cold), *Atisauhityasahishunata* (Intolerance to excessive food intake).

According to modern science, BMI is a basic scale for calculating normal nutrition. Body Mass Index (BMI) WHO Classification -

<18.5 kg / m ²	Underweight or Thin
18.5-24.9 kg /m ²	Healthy, Normal
25.0-29.9 kg /m ²	Grade 1 Overweight
30.0-39.9 kg/m ²	Grade 2 Overweight
≥ 40.0kg/m ²	Obesity

Based on the above description, PCOS may be seen in both underweight and overweight females. PCOS is an expression of a disturbed H-P-O axis, and it may lead to infertility. Also, PCOS is generally associated with *Dhatvagnimandya*. So, the management of PCOS in lean and thin (*Krish*a) should be targeted at *Agnideepana*, *Pachana*, *Vatanulomna*, and *Bhrmana Chikitsa*. It is a disorder of the endocrine system caused by a hormonal

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imbalance. It basically interferes the growth of ovarian follicles.

AIMS & OBJECTIVES

To study the effect of Ayurvedic management in the case of infertility due to *Dhatukshaya* and PCOS. In this case, the main focus was on nourishment of dhatus by *Bhraman*, followed by *Nasya* to normalize the endocrine system.

DESCRIPTION OF PATIENT

A 31-year-old woman reported to the *Prasutitantra* and *Stree Roga* outpatient department (OPD) with the complaint of inability to conceive. On further inquiry, she said that she had been married for 3 years and was unable to conceive after 3 years of unprotected intercourse. Then she also developed irregular menses with an increased interval in the past six months (with an interval of 45 to 60 days). She was receiving treatment for infertility from a private practitioner for the last two years. Her previous ultrasonography suggested a normal uterus with polycystic ovarian disease. She has been treated for PCOS since 2019, but she hasn't conceived, and her menstrual cycle was still irregular. Before coming here, she was advised to undergo IVF, for which she was not prepared; that is why she visited our hospital to seek Ayurvedic management for infertility. During her first visit to the PTSR OPD, she was advised to undergo routine hematological and urine examinations and AMH, FSH, LH, TFT, S. INSULIN, S. TESTOSTERONE, S. PROLACTIN on the 2nd day of menses, USG of pelvis to rule out any pelvic pathology. She had no previous surgical

illness. On general examination, no systemic disease was detected. *Prakruti* assessment revealed she was having *Vata Pitta Prakruti*. Her BMI was found below normal, which indicates she was underweight (*krish*). Therefore, an ayurvedic management had been planned incorporating *Brihmana Chikitsa* and *Nasya* to achieve the conception.

MENSTRUAL HISTORY

- Age of Menarche – 13 years
- Duration – 2- 3 days
- Interval – 45 - 60 days
- Amount – moderate to heavy
- Associated symptoms – pain, smell and clots during menstrual period not present

CONTRACEPTIVE HISTORY

Nil

FAMILY HISTORY

No family history of DM, HTN, TB, and Thyroid dysfunction. No history of exposure to radiation, any toxin, or chemical agent.

EXAMINATION OF PATIENT

General and physical examination of the patient was done. Her weight was 39 kg and height 157 cm, BMI- 15.8 kg/m², which was below normal. Her vitals were within normal range. Her general physical, per abdomen, per vaginal bimanual examination, and per speculum examination revealed no significant abnormality.

Investigations- Her ultrasonography of pelvis (in figure 1) showed –

Bilateral polycystic ovarian diseases with bulky

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ovaries, right ovarian volume 16 cc and left ovarian volume 14cc, uterus was anteverted and normal in size and endometrial thickness was 3mm.

Routine Blood Investigations – Within Normal Range

TFT (Within Normal Range)–

T4- 8.90,

T3- 1.01

TSH- 1.55,

Her hormonal profile was disturbed.

AMH - 14.48 ng/ml

Serum testosterone- 36.16 ng/dl

LH- 8.24 mIU/mL

FSH- 2.67 mIU/mL

Serum Insulin– 11.70µU/mL

Semen analysis of the husband was found normal.

TREATMENT

Treatment plan for female patient

1. *BHRAMAN CHIKITSA* FOR 3 CYCLES
2. *NASA*

Patient treated for *Krishta* (underweight) for three consecutive cycles with the *Bhraman* yoga, i.e., *Dhatu Pushti Churna*, Tab Turmix, and *Ashokaarisht* as described in Table 1.

Table 1 *Bhrimana Chikitsa Protocol*

Yoga	Content	Dose
<i>Dhatu Pushti Churna</i>	<i>Ashwgandha, Shatavri, Gokhru, Beejband, Kaunch Beej, Safed and Kali Musli, Sonth, Vidarikand, Nishoth</i>	3gm BD
Tab Turmix	<i>Curcuma longa</i> (300 mg) + <i>Piper Nigrum</i> (5 mg)	1 BD
<i>Ashokaarisht</i>	<i>Asoka, Jaggery, Dhataki, Musta, Shunti, Ajaji, Daruharidra, Triphala, Amrasthi, Jeeraka, Vasa, Chandana</i>	40 ml with equal amount of water

The time of administration: With food (*Sabhakta Annakala*)⁸

Treatment plan (table) adopted for the patient after doing *Brihmana* for 3 months by above mentioned protocol: -

- - *SNEHANA NASYA- Marsh Nasya* with *Narayana Taila* for 16 days (10 drops in each nostril)
- *Shamana- Pushpdhanva Rasa, Phala Ghrita*

Nasya chikitsa protocol

Poorva karma

- Lie down on the *Nasya* table.
- Before *Nasya*, *Mridu Abhyanga* (massage)

should be done on scalp, forehead, face, and neck for 3 to 5 minutes by *Narayana Taila*

Pradhan karma

- Patient lies down in supine position with ease on the *Nasya* table.
- *Shira* (head) should be “*Pralambita*” (lowered, i.e., hanging down) and feet slightly raised
- After covering the eyes with a clean cotton cloth, the physician raises the tip of the patient’s nose with his left thumb and with the right hand, the lukewarm oil (*Sukhoshna*) is dropped in both the nostrils alternately in proper way.

Paschat karma

- A mild massage of the palms, soles, and

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shoulders are done

- Then the patient is asked to turn to the side to draw the herbal formulation into the throat and spit it out into the spitting pot.

Shaman Chikitsa protocol

- *Pushpdhanva Rasa*

Key ingredients - *Rasasindoor, Naga Bhasma, Vanga Bhasma, Loha Bhasma, Abhraka Bhasma*

- *Phala ghrita*

Dose 5 gm BD with milk

Diet chart protocol - Food items having sweet⁹ or sour taste¹⁰ generally possess a nourishing property. The patient was advised a diet for nourishment for the whole period of treatment.

❖ Do's-

Diet - rice, blackgram, wheat and Meat¹¹, Milk¹², Ghee¹³, jaggery preparations¹⁴, curd¹⁵, butter¹⁶

Table 2 Timeline of Routine Checkup

Time	Menstrual symptom (Cycle interval)	Weight (kg)	BMI (kg/m ²)
At the time of reporting of patient (April 2021)	45 to 60 days	39kg	16.4
After 3 months of <i>Bhrimana</i> treatment (June 2021)	30 to 35 days	41.5kg	17.5
After next 2 months of <i>Nasya</i> treatment (August 2021)	28 to 32 days	43kg	18.1
After next 1 month of <i>Nasya</i> treatment (LMP- 5-9-21)	Patient conceived	44 kg	18.6

RESULTS

Patient followed up regularly on a monthly basis as shown in Table 2, during *Brihana Chikitsa*, she gained **5 kg of weight (from 39 kg to 44kg)** and her BMI raised from **16.4 kg/m² to 18.6 kg/m²** after **6 months of *Brihana Chikitsa*** and dietary protocol. The menstrual cycle of the patient became regular with a duration of 2-3 days and an interval of 28-32 days without any associated symptoms. The patient missed her period in the

and oil¹⁷

Fruit - Dates, common figs, Indian hog plum, coconut, ripe peach, *Draksha*¹⁸, Mango¹⁹wild lemon (*Matulunga*)²⁰ etc.

Vihara- Oil massage, bath²¹, sleep, and Yoga (*Anulom, Vilom, Bhramari, Vajrasana, Pashcimottasana, Halasana* etc)²²

Mental factors - Cheerfulness/happiness, contentment and reading good and religious literature

❖ Don't-

Diet - Junk food, *Ushana, Ruksha, Tikshana, Katu aahara* **Vihara-** Late night sleep, excessive exposure to mobile phone radiations, rigorous exercise

Mental factors- Stress, anger, mental worries.

third cycle of *Nasya Chikitsa*. Her LMP was 5-9-21, and her UPT was positive on 15 10 21. Later on, ultrasonography showed A live intrauterine pregnancy with a fetal pole of 7 week 6 days and positive cardiac activity in one sac with an empty another sac, as in figure 2.

DISCUSSION

Here in this case, when a patient came to us with her last hope because she was advised to undergo

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IVF. After looking at her past investigation and her general physical examination, we concluded that the patient was underweight and a case of Lean Polycystic Ovarian Syndrome. Patient's hormonal profile was deranged, and her AMH was higher than normal, testosterone was also in the higher range. USG showed hyper voluminous polycystic ovaries that were the cause of anovulatory cycle and irregular menstrual pattern. As the patient was lean and thin, so line of treatment adopted was *Bhrimana Chikitsa* and *Nasya*. After treatment, her USG showed reduced volume of both ovaries, and the right ovary showed a dominant follicle of size 19.6 mm. Her menstrual cycle became regular, and her BMI also raised. *Nasya* treatment was planned for three consecutive cycles along with oral medication. In the third cycle of *Nasya* treatment patient achieved conception.

Brimhana Chikitsa, a part of *Shaman Chikitsa*, also plays an important role in infertility with *Daurbalya* related anovulation by doing *Dhatupushti*. *Karshya* occurs due to *Dhatukshaya*, and it is a *Vata Pradhan Vyadhi*²⁴. Its general line of treatment is *Santarpana Ahar*, including *Madhur*, *Amla*, and *Lavana Rasa*. *Brimhana* therapy is important as it is a line of treatment of *Karshya* or *Dhatu Kshay*. The result of this case strengthens the role of Ayurveda treatment in infertility and lean PCOS by *Dhatu Purnta*. As in this case, the patient was treated for *Bandhyatava* for the past 2 years without any positive outcome. By following *Brimhana* therapy with *Nasya*, ultimately, conception was

achieved. *Brimhana* is the procedure to nourish tissues and improve their quality to make the body compact²⁵. Thus, it improves health and prevents diseases. Nourishing therapy maintains the quality of tissues and decreases the risk of disease complications.

Nourishing (*Brimhana*) is the treatment of choice for all *Vata-dominant* disorders²⁶. Nourishing therapy (*Brimhana*) itself acts as pacifying therapy (*Shamana*) also²⁷. The diseases caused by the depletion of body constituents should be treated through nourishing therapy (*Brimhana*)²⁸. By doing *Brimhana Chikitsa*, we make *dhatu Poornta*, which is helpful in proper *artava* formation and *beeja* formation. In *Bhrimana Chikitsa*, the medications used are mainly *Vata Shamak*. The main principle of *Brimhana* treatment is to nourish all *dhatu*s, normalize metabolism, and regulate the menstrual cycle. *Brimhana Drvaya* works on the whole body. Thus, we nourish the body cells or follicles, which relate to proper ovulation, or we can say it is helpful in *Uttam Beejouttapati* by pacifying the *Vata dosha* and help in conception. In *Samprapti* of PCOS, there is also *Agnimandya ApanVayu sang*, *Vata Dushti*, and *Dhatu Kshaya*. Thus, by *Brimhana* therapy, we make its *Vighttan* by doing *Vatashaman* and *Dhatu Pooranta*.

Here we used *Dhatu Pushti Churn* mentioned by *Ayurveda Saar Sangrah*, which is a wholesome nutritional beverage and provides nourishment, strength, stamina, and immunity. It is an excellent nutritional supplement for underweight, general ill health, the elderly, growing children,

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teenagers, pregnant women, lactating mothers, and sports persons. Most of the Ingredients, such as *Ashwagandha*, *Shatavri*, *Gokhru*, *Kaunch Safed Musli*, *Vidaari*, etc., belong to *Jeevniya Gana* and *Rasayan*. *Shatavari* contains phytoestrogens and is also used for an upset stomach. It helps in nourishing female reproductive organs. *Gokhru*: Increases stamina, libido, and sexual function. It also improves muscle building. *Kaunch beej* also has a special role in sexual debilities. This preparation is aphrodisiac and nourishes all the *Dhatus*, especially the *Shukra Dhatu*, and by increasing *ojas*, gives health, peace, and immunity.

Curcuma Longa (Haridra), the main ingredient of the tab Turmix, has a vast effect in metabolic correction²⁹ and also has anti-oxidant properties. Since *Haridra* rectifies the *Agni* (metabolic fire) by the virtue of its *Ushna Veerya*, *Katu-Tikta Rasa*, *Laghu-Ruksha Gunas*, and *Katu Vipaka*, *Haridra* cleanses and detoxifies *Rasa* (Digestive juice and circulatory nutrition) and thus enables free circulation of nutrients to every cell of the body and restoring the normal body functions. *Haridra* is *Visodhani*³⁰, by removing the blocks created in the channels and cells created by contaminated *Pitta* and *Kapha*, and enabling free movements of *Vata* also enables the anatomical and physiological recovery of the *Kapha varga dhatus viz Mamsa, Lasika, Ambu, Majja, Vasa*, and *Shukra*. The *Dhatus* are nourished and replenished.

Its anti-oxidant property is also helpful in PCOS because oxidative stress is also an underlying

cause of increased levels of androgens. In a study on mice, the ovulatory effect of *Haridra* was also recorded by improvement in morphological changes in follicles. It is as effective as clomiphene in inducing ovulation in PCOD albicans mice³¹.

Also search began for other substances that could help increase the bioavailability of curcumin. In 1998, there was a study that showed *piperine*, the active ingredient of black pepper (*piper nigrum*), paired with curcumin helped in increasing the levels of curcumin in the blood. It is also *Deepaneeya*, *Shiro Virechanopaga*³² (group of herbs useful in expelling *Doshas* from head and neck), *Ruchikar*^{33,34,35}, i.e., improves taste, relieves anorexia, *Vayu Nivarayati*³⁶, i.e., useful in *Vata* related disorders.

Ashokarisht is a good uterine tonic and is used in many gynecological and menstrual disorders. *Pushpdhanva ras* is a potent formulation and is used for the proper development of reproductive organs, and helps in the improvement of sexual health in females as well as males. It may be helpful in infertility by stimulating hormone secretion. *Phala Ghrita*, mentioned by *Charka*, is very beneficial for infertility.

Nasya Chikitsa also plays an important role in normalizing hormone levels by its effect on H-P-O AXIS and resulting in proper ovulation and a regular menstrual cycle. Panchakarma therapy is considered for maintaining the state of equilibrium by abolishing the vitiated doshas through the nearby route. As per *Ayurveda*, “*Dwaaram Hi Shirso Nasa*”³⁷, so *Nasya* would

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be the appropriate shodhana procedure to deal with endocrine disorders, where the hypothalamus or pituitary gland is involved. Here, PCOD is a result of hormonal imbalance initiated from the hypothalamic-pituitary-ovary axis dysfunction. Through the nasal route drug reaches the *Shringataka Marma* (*Siro Antarmadhyam*) and spreads into *Shira* (head), eliminating morbid *doshas* and ultimately promoting the normal physiological function. The main regulator of the H-P-O axis is GnRH (secreted by the Hypothalamus). The olfactory nerve differs from other cranial nerves in its close relation with the brain. The peripheral olfactory nerves are chemoreceptors in nature. The olfactory nerves are connected with the higher centers of the brain, i.e., limbic system, consisting mainly of the amygdaloidal complex, hypothalamus, anterior thalamic nuclei, parts of the basal ganglia³⁸, etc. So, the drugs administered through the nose stimulate the higher centers of the brain, which shows action on the regulation of endocrine and nervous system functions. The Hypothalamus is considered to be responsible for integrating the function of the whole endocrine system. Thus, *Nasya* may be acting through impulses traveling via the olfactory pathways, influencing the hypothalamus, which may lead to proper function of the pituitary and secretion of LH and FSH. Here we used *Bhraman Nasya*³⁹. As the drug used for *Bhramana Nasya* is *Sneha*, thus it can be considered as *Snehan Nasya* according to *Sushruta*. This type of therapy is used in *Vata-*

Pitta dushti. *Snehana Nasya*, as the word *Sneha* suggests, *Snehana Nasya* gives strength to all the Dhatus and is used as *Dhatuposhaka*.

Thus, *Narayana Taila Nasya* may stimulate olfactory nerves and the limbic system, which in turn stimulates the hypothalamus, leading to stimulation of Gonadotropin Releasing Hormone (GnRH) neurons, regularizing GnRH pulsatile secretion and leading to ovulation. Ingredients of *Narayana Taila*⁴⁰ have *Prajasthapana*, *Rasayana*, *Balya*, and *Brimhaniya* properties. The drugs of *Narayana Taila* possess anti-oxidant, apoptogenic, immune-modulatory, etc., properties, which may help in relieving stress, age-decline, etc., (causes of anovulation). Also, phytoestrogenic properties of different components of *Narayana Taila*, like *Shatavari*, *Tila Taila*, regulate the activity of gonadotropin secretion.

Narayana Taila with its *Katu, Tikta Rasa; Laghu, Ruksha Guna; Ushna Veerya* and *Katu Vipaka* and *Vata Kaphashamaka Doshagnata* ultimately leads to *Deepana, Pachana, Vilayana, Anulomana*, and *Srotoshodhana* resulting in *Amapachana* and *Vatakaphashamana*, which may remove *Sanga* and *Avarana* lead to the proper functioning of Vayu.

Thus, due to *Samprapti Vighhatan* by this *Snehan Nasya* and *Bhraman, Vajikarana Yoga* along with *Ahara Vihara* (dietary and lifestyle management) protocol the proper ovulation and finally the conception was achieved in this case.

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CONCLUSION

In case of infertility, we can achieve a better success rate if we follow the guidelines mentioned by *Classic texts*. In Ayurveda, the treatment is done by considering the phenotype (*Prakriti*), metabolic rate (*Agni*), and three essential humors of the body responsible for homeostasis and disease in a person (*DoshaPprakopa*). This case suggests that for lean PCOS, *Dhatu Poshana* and rectifying the disordered *Agni* (improving the BMI) should be the first line of management. Only then the drugs used for *Bandhytva* (Infertility) can help in achieving conception.

Patient's Consent- Informed consent of patient was taken before submission of case study for publication. She was informed that her images and other critical information relating to her case to be reported for medical publication in Journal, Website and or other form of publication. Her name and initials will not be published and efforts will be made to conceal her identity, but that anonymity cannot be guaranteed.

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