



Case Study

A CASE REPORT ON THE IMPACT OF A LEAN POLY CYSTIC OVARIAN SYNDROME ON FERTILITY AND POTENTIAL BENEFIT OF AYURVEDA REGIME

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ABSTRACT

Despite of advances in Artificial Reproductive Techniques (ART), female infertility is the predominant health issue faced by approximate 15% couples globally. Out of the ovarian factors responsible for infertility, PCOS is a burning issue worldwide affecting female fertility and creating endocrine level disturbances. **Case presentation:** We are reporting a case of primary infertility presenting with Lean phenotypical features and USG findings of PCOS. She underwent conventional Hormonal therapy for two years and single cycle of IVF which resulted in failure. On evaluating the parameters in view of Ayurveda, a diagnosis of *Anapatya Vandhya* with *Artavakshaya* and *Karshya* was made. **Intervention:** Therapeutic strategy included *Shamana* therapy for three months followed by *Shodhana* Therapy involving *Uttarabasti* (Intrauterine instillation of drug), *Ksheerabasti* and *Nasya Karma*. **Outcome:** Following treatment, 4 kg gain in body weight, moderate relief in acne and substantial improvement in duration and flow of menstruation was observed and the patient conceived in the 4th month of treatment course. **Conclusion:** This case report presents a successful outcome of Ayurveda regime planned on the basis of Ayurveda diagnosis in a rare case of Primary infertility associated with Lean PCOS.

INTRODUCTION

It is said that Menstruation is “womb crying for lack of baby”. More or less it is a woman crying for lack of baby. Despite of advances in Artificial Reproductive Techniques (ART), female infertility is the predominant health issue faced by approximate 15% couples globally. Infertility is the inability to achieve conception even after regular unprotected sexual intercourse for a duration of 12 months and more. It may arise from various factors related to females such as Tubal factors, uterine factors and Ovarian Factor contributing 40% of the cases. Out of the ovarian factors, PCOS is a burning issue worldwide affecting female fertility and creating endocrine level disturbances.

PCOS is a condition wherein multiple cysts are developed in ovary which affect normal ovarian functioning, follicle development and ovulation too. Anovulation, hyperandrogenemia, and the existence of multiple ovarian cysts on USG are the diagnostic features of PCOS. Usually it manifests as two phenotypes viz., obese/overweight and lean. Lean PCOS is an uncommon presentation wherein patient presents with BMI ≤ 25 kg/m² that makes therapeutic approach more difficult.^[1]

In classical Ayurveda, the description of *Artavakshaya* resembles the manifestations of Poly Cystic Ovarian Syndrome. *Karshya* can be correlated to the presentation of Lean PCOS and *Anapatya Vandhya* to primary infertility. Considering treatment principles of these all, the case was managed with Ayurveda therapy that resulted into successful pregnancy outcome.

Patient Information

A Hindu married female, 32 years old presented at Striroga OPD, NIA hospital, Jaipur complaining of inability to conceive in spite of 3 years of regular unprotected sexual intercourse. The Husband aged 35 years had his semen analysis report

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within normal limits. Wife had her menses regular with 2 days of menstrual bleeding duration and 28-35 days interval between two consecutive cycles, scanty flow with no pain during menses. The couple underwent continuous two years of allopathic

treatment for infertility along with a single cycle of IVF that resulted in failure. Her last menstrual period was in September 2021 at the first visit. Her family history revealed that her real sister is too a case of primary infertility since 9 years.

Clinical Findings

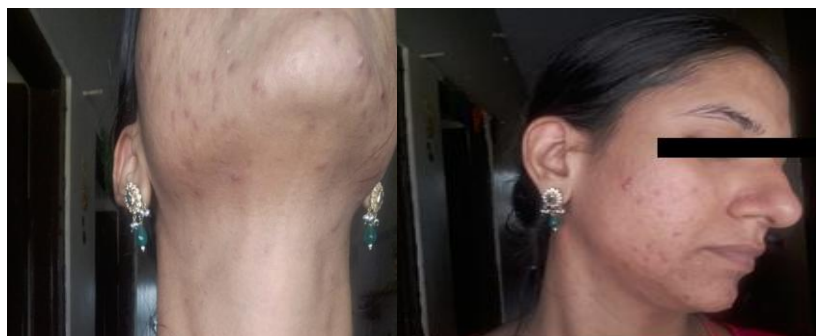


Figure 1: Features of Hyperandrogenism - Acne over face, chin and neck region

UPT done at NIA OPD on her first visit was found to be negative. The patient was thin with weight 40kg, height- 5’2” and BMI of 16.1. There were clear evidences of Hyperandrogenism i.e. mild hirsutism and acne over face, chin and neck region. No acanthosis nigricans was observed over neck on inspection.

Her per vaginal findings revealed that Uterus is anteverted, ante flexed, of normal size and shape, all fornices- free non tender and Cervical Motion Test-negative. Her per speculum examination findings showed that Cervix was downward, posteriorly placed with pinhole cervical os.

Her ultrasound report dated on 31/08/2021 revealed findings of Bilateral Polycystic Ovarian Disease (PCOD). Repeat Ultrasound report dated on 28/02/2022 again showed ovaries with multiple small follicles ovarian volume 13 and 12 cc respective in Right and Left Ovary respectively suggestive of

polycystic morphology. Uterus measured normal in size, shape and position with endometrial thickness of 9 mm. Her follicular study done in month of March 2021 and April 2021 suggested no feature of ovulation.

Diagnostic Focus

On detailed evaluation of subjective and objective parameters, the case was diagnosed as Primary infertility associated with Lean PCOS. In view of Ayurveda, this condition could be considered as *AnapatyaVandhya* associated with *Artavakshaya* and *Karshya*. Here, the vitiation of *Vata-pittadosha* lead to *Kshaya* in *Artava* resulting in scanty and delayed menstruation. This led to a Hyperandrogenic environment in the body resulting in polycystic changes in ovary. Detailed evaluation of her signs, symptoms and *Prakriti* revealed the aggravation of *Vata* and *Pitta Dosha*. Acknowledging all the factors, treatment principles of *Artavakshaya*, *Vandhya* and *Karshya* were adopted in the management.

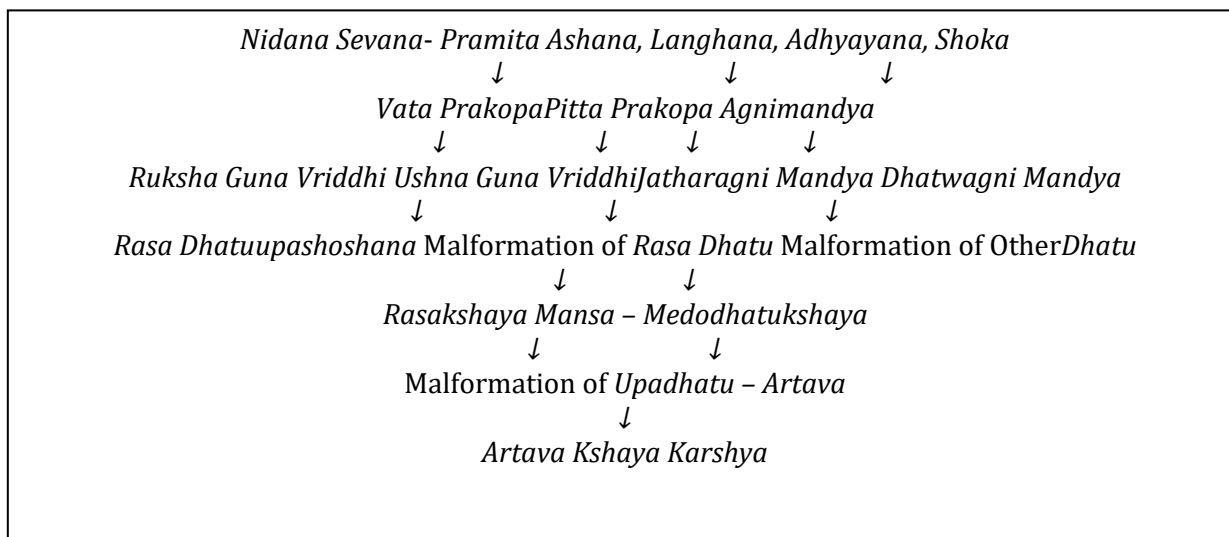


Figure 2: Samprapti of Artavakshaya and Karshya

Therapeutic Intervention

Therapeutic strategy included:

- 1. Shamana Therapy:** The set of Ayurveda medicines prescribed for three months course as mentioned in Table No. 2 A
- 2. Shodhana Therapy:** *Basti* and *Nasyakarma* as given in Table No. 2 B
- 3. Dietary and Lifestyle modifications:** Normal walking daily for 15 minutes and avoiding causative agents such as *Pramitashana*, *Shoka*, etc.

Table 1: Timeline of patient's progress and evolution of treatment plan

Date	Observations / Remark	Treatment
07/12/2021	Delayed Cycles since 3 months Scanty menstruation (2 days duration) LMP- Sep? USG- 31/08/2021 B/L PCOD UPT - Negative	Ayurveda therapy for inducing menstruation- 1. <i>Dashamula kwatha</i> + <i>Ajamoda</i> + Old jaggery 50 ml twice a day for 15 days
03/01/2022	Onset of menses on LMP-29/12/2021 Duration of bleeding 4 days	<i>Uttarabasti</i> done with <i>Apamargaksharataila</i> as per the protocol and Internal Medicine
28/01/2022	LMP - 22/01/2022 Duration of bleeding - 4 days	<i>Uttarabasti</i> 2 nd sitting with <i>Shuddha Balataila</i> Internal Medicine
23/02/2022	LMP - 18/02/2022 Duration - 5 days	<i>Uttarabasti</i> 3 rd sitting with <i>Shuddha Bala Taila</i> Internal Medicine
24/03/2022	LMP- 20/03/2022 Duration - 4 days USG (28/02/22)- B/L PCOD	<i>Ksheera Basti</i> 1 st sitting <i>Anutaila Pratimarsha Nasya</i> Internal Medicine
26/04/2022	Thick white discharge per vaginum since 5-6 days Delayed Periods LMP- 20/03/2022 UPT - positive	Patient conceived

A) Shamana Therapy**Table 2: Therapeutic Intervention**

Therapeutic Approach	Intervention with dosage	Duration
Use of <i>Aagneya Dravya</i> <i>Raja Pravartana</i> Inducing menstruation	1. <i>Kumaryasava</i> 20ml with equal amount of water after meal twice a day 2. <i>Rajah Pravartini Vati</i> - 250 mg after meal twice a day	15 days
Anti-Androgenic	<i>Lodhrasava</i> 20 ml with equal amount of water after meal twice a day	3 months
<i>Rasayana</i>	<i>Shatapushpa Churna</i> 5 gm early morning empty stomach with milk	3 months

B) Shodhana Therapy

Procedure	Medicine	Duration
<i>Uttara Basti</i>	<i>Apamarga Kshara Taila</i> 5ml intra uterine	7th to 9th day of cycle (04/01/2022 to 06/01/2022)
<i>Uttara Basti</i>	<i>Shuddha Bala Taila</i> 5ml intra uterine	9 th to 11 th day of cycle (30/01/2022 to 01/02/2022)

<i>Uttara Basti</i>	<i>Shuddha Bala Taila</i> 5ml Intra uterine	7 th to 9 th day of cycle (24/02/2022 to 26/02/2022)
<i>Ksheera Basti</i>	<i>Ashwagandha</i> 5gm <i>Vidarikanda</i> 5gm <i>Gokshura</i> 5gm <i>Yashtimadhu</i> 5gm	8 days (24/03/2022 to 31/03/2022)
<i>Pratimarsha Nasya</i>	<i>Anu Taila</i> 2drops in each nostril in the morning	3 days (01/04/2022 to 03/04/2022)

Follow-up and Outcomes

Following the treatment, the body weight of the patient was increased to 44 kg (4 kg gain) and there was mild improvement in Acne. Her menstrual cycle duration and flow improved substantially and her UPT done during 4th month of treatment was found positive. USG done on 07/05/2022 suggested live intrauterine pregnancy of 7 weeks G.A.



A. Before Treatment B. After Treatment

Figure 3: Relief in symptom of Acne

DISCUSSION

A small proportion approximately 20% of all PCOS patients have lean phenotype and presents with features such as hyperandrogenism, polycystic ovaries, and insulin resistance.^[2] These cases are usually left undiagnosed until they face infertility following marriage. Different management principles include diet and lifestyle modifications and pharmacological measures to ameliorate increased androgen levels, insulin resistance and hormonal therapy to correct menstrual dysfunctions.

In Ayurveda, *Aartava-kshaya* exhibits characteristics similar to PCOS, like menstruation occurring later than anticipated, being scanty in quantity or less in duration, or is accompanied by pain in the *Yoni* (reproductive tract).^[3] The factors responsible for the vitiation of *Vata Pitta* are chief causative agents in the patho-physiology of *Artavakshaya*. The lean phenotypical appearance in the present case is similar to features of *Karshya*, viz., lean buttocks, belly, and neck area as well as visible veins all over their body.^[4] Execution of *Nidana* such as *Pramitashana*, *Langhana*, *Adhyayana* and *Shoka* were observed in the present case leading to *Karshya*.^[5] These further could vitiate *Vata* and *Pitta*

dosha that lead to *Artavakshaya* and thereby *Vandyatva*. Hence the diagnosis was confirmed as primary infertility associated with lean PCOS and '*Vandhyatva* associated with *Artavakshaya* and *Karshya*' as per Ayurveda.

The first and foremost step in the management was *Rajapravartana* (inducing menstruation) and correcting *Aartavakshaya*. Use of *Sanshodhana* and *Aagneya Dravya* is indicated by Acharya Sushruta in the management of *Artavakshaya*.^[6]

Liver serves as the principle site for conjugation of sex hormones. Abnormal estrogen metabolism in liver dysfunction has been long recognized in studies.^[7] *Kumaryasava*^[8], is extensively studied for the use in enhancing liver functions and it is supreme remedy for *Agnideepana*. It performs range of functions such as *Brimhana*, *Balavardhana*. It is *Vatakaphashamaka* and *Pitta vardhaka* that helps in inducing menses. A study done by Pawar R. et al 2018 concluded that *Kumari Asava* is effective in reducing the follicular size and ovarian volume and achieving ovulation in subjects of PCOS.^[9] Considering features of hyperandrogenism, disturbed estrogen regulation, anovulation and *Karshya* (Lean PCOS), it was decided

to use *Kumaryasava*. *Raja Pravartini Vati*^[10] is indicated in *Rajorodha*- a pathology in *Nashtartava*. Acharya Sushruta advocated the use of same principles in *Artavakshaya* as that of *Nashtartava*.^[11] *Tankana* is the main ingredient in this formulation that demonstrates *Streepushpajanana karma*.^[12] *Streepushpa* refers to both *Antahpushpa* (ovum) and *Bahirpushpa* i.e., *Raja* (menstruation). Other ingredients in the formulation namely *Hingu*, *Kasisa* and *Kumari* exhibit *Artavajanana* property by virtue of *Agneya Guna* and *Katu rasa*. As a result, *Raja pravartinivati* might have worked on inducing menstruation as well as ovulation in this case.

Lodhra Symplocosracemosa Roxb. is reported to possess potent anti-androgenic effect. Hence, *Lodhrasava* was prescribed that might help in reducing features of hyperandrogenism in this case.^[13] Acharya Kashyapa emphasized *Shatapushpa* in *Shatapushpa shatavarikalpadhyaya*^[14] as a *Rasayana* drug possess *Katurasa*, *Laghu-ushnaguna* and *Ushnaveerya*. It exhibits *Ritupravartana* and *Yonivishodhana*, *Deepana Pachana* properties. These could have corrected *Agnimandya*, *Karhsya* and *Artavakshaya* in this case.

Vidhivad-Sanshodhana- a management principle in *Artavakshaya* where *Vidhivat* means appropriate selection of procedure and drug based on the manifestation and fitness of the case.^[15] To perform *Garbhashaya* and *Yonishodhana*, *Apamarga Ksharataila* was selected as the drug for first sitting of *Uttara basti*. *Apamarga Kshara Taila* offers scraping of the inner lining of endometrium aiding in *Artavashodhana*. Since endometrium owns the potential to regenerate it is further rejuvenated by antioxidant & *Ropana* (healing) properties of *Taila*. It also reduces the size of cysts and symptoms related to PCOD normalizing the ovulation. In the next two sittings, *Shuddha Bala Taila* was the choice of drug for *Uttarabasti* so as to promote receptivity in newly generated endometrium with *Prajasthapana* properties of *Shuddha Bala Taila* and to dilate the *Anudwara* (pinhole os) of cervix.

Karshyachikitsa principles were adopted to treat the lean presentation in this case which recommends the use of medicated milk, *Vrishya Dravya* and *Basti* with *Snigdha-madhuradravya*.^[16] Hence, *Ksheera Basti* with *Gokshura*, *Yashtimadhu*, *Vidarikanda* and *Ashwagandha* was planned in the 5th follow-up. These might have served to offer *Bala*, *Brimhana*, *Rasayana* (rejuvenating) and *Vrishya* improving general condition and fertility. All these ingredients enrich with phytoestrogens and since they are lipophilic nature show optimum drug availability in lipid based products such as milk. This might have led to enhance estrogenic environment in the ovaries correcting manifestations of hyperandrogenism.

Anu Taila Nasya (transmucosal nasal insufflation) stimulates olfactory nerve which in turn might stimulate hypothalamus regularizing GnRH pulsatile release and normalizing the functioning of Hypothalamo- pituitary -ovarian axis. *Anutaila* possess *Tikta-katu rasa*, *Ushnavirya* and *Tikshnaguna* with which it might have induced ovulation.^[17]

The successful outcome in the present case signifies the relevance of logical selection of Ayurveda procedures as per the stage, judicious combination of internal medicines for the cure.

CONCLUSION

This case report presents a successful outcome of Ayurveda *Shamana* and *Shodhana* therapy planned on the basis of Ayurveda diagnosis in a rare case of primary infertility associated with lean PCOS and pin-hole os of cervix.

Patient Perspective

After UPT was performed and it was found to be positive, patient was literally not able to believe that she has conceived and so she was asking for USG examination for confirmation. She was counselled further.

Informed Consent

Written consent was obtained from the couple for the purpose of publication of their clinical details.

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