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Exploring *Shirodhara* and *Nasya*: A Holistic Ayurvedic strategy for addressing Anovulation-Induced Infertility

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ABSTRACT

Anovulation and low AMH are common causes of female infertility. Anovulation may be caused due to hormonal disorders, PCOS, thyroid disease, extreme levels of stress, or some other medical disorders. In *Ayurveda*, four factors are essential for successful conception and pregnancy. These are *Ritu* (fertile & intercourse time), *Kshetra* (patent reproductive tract), *Ambu* (nutrition), and *Beeja* (healthy sperm & ova). All of these, the most essential factor is said to be *Beeja*, which actually is the *Antahpushpai*, or ovum. Conception and successful carrying of a pregnancy depend upon all these factors going along in concordance with each other. According to *Ayurveda*, Anovulation is a category of *Beeja Dushti*. *Shirodhara* & *Nasya* is one of the most effective *Ayurvedic* treatments which support ovulation. **Case study:** This 42 year's female patient was not getting pregnant since the last 7 years. Her cycles were anovulatory as her ovaries did not show the release of eggs at the proper time. On evaluation through follicular scans revealed the presence of multiple small follicles in left ovary and one dominant follicle (size-14mm) seen in right ovary even on 15th day of cycle. The AMH of this patient was also very low i.e., 1.39 ng/dl. The treatment given to this patient was an Ayurvedic therapy *Shirodhara* and *Nasyakarma* and *Shaman-Aushadi*. **Result:** Over the course of three-months, she achieved a successful pregnancy. **Discussion:** Present study illustrates how Ayurvedic practices and treatments can significantly contribute for ovulation and fertility.

Key words: Anovulation, Infertility, *Shirodhara*, *Nasya*, *Shatpushpa-Shatavari oil*

INTRODUCTION

Fertility challenges are a significant global issue, with infertility affecting about 17.5% of the adult population - roughly 1 in 6 people worldwide, according to the WHO. In developing countries, infertility impacts up to 25% of couples, making it a prevalent concern. Infertility is defined as the inability to conceive after 12 months of regular, unprotected intercourse. Primary infertility, as a cause of infertility, is reported to affect approximately 2% of all women worldwide. More women are however affected by secondary infertility,

up to 10.5% in certain regions because couples can find it problematic to conceive after having had one or more previous pregnancies. These notwithstanding, treatments like IVF and other assisted reproductive technologies have given new hope for parenthood to millions of couples.^[1]

Ovarian factor is the 2nd most common cause of infertility and contributes 25-40%.^[2] Ovulatory factors play a crucial role in female infertility, accounting for around 40% of all cases. These issues can arise from various conditions affecting hormone levels, such as polycystic ovary syndrome (PCOS), thyroid disorders, or other hormonal imbalances that disrupt normal ovulation. Addressing these factors is essential for improving chances of conception.^[3] In *Ayurveda*, infertility in women is referred to as *Vandhya*. For successful conception, *Ayurveda* emphasizes the importance of 4 key factors, known as *Garbha-Sambhava Samagri*.

Ritu (Timing): The right timing, both in terms of a woman's fertile period and intercourse, is crucial for conception.

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Kshetra (Field): The health of reproductive organs, including the uterus, fallopian tubes, and endometrium, must be optimal.

Ambu (Nourishment): The quality of uterine fluid and nourishment of reproductive tissues, particularly *Rasa Dhatu*, is essential.

Beeja (Seed): The vitality and health of both sperm and ovum are critical to reproduction.

These factors are interconnected with psychological well-being and balanced *Vata Dosha*. Imbalances in any of these can lead to *Vandhyatva* (infertility). Ancient Ayurvedic texts, such as those by *Acharya Sushruta*, explain *Nashtartawa* (absence of menstruation or ovulation) as a primary cause of infertility, which can be linked to anovulation, often due to *Vata* imbalances.^[4]

In this context, *Nashtartawa* can be likened to anovulation, a condition mainly caused by imbalances in the *Vata Dosha*, one of the fundamental principles governing the body in *Ayurveda*. Currently, it is noted that disorders in *Artava* caused by *Vata* can lead to a decrease in *Artava* volume, resulting in weakened *Beeja* and subsequently no ovulation. Additionally, *Pitta* plays a crucial role in ovulation by facilitating the transformative changes necessary for follicle maturation.

Ayurveda explain wide range of protocols i.e. *Panchkarma* therapies and *Shaman Aushad* for the management of *Beejadushti*. *Shirodhara* & *Nasya* are *Ayurvedic* procedure help in getting ovulation. *Shridhara*, helps soothe the hypothalamus, which activates the regulation of the pituitary gland and regulates the HPO axis by regulation of hormones. It is an external process done by pouring the medicated *Kwath* or oil on scalp. *Nasya Karma*, a key component of *Ayurveda*, involves the therapeutic use of medicated substances administered through the nasal passages. Based on the belief that the nose is a crucial gateway to the head (*Nasa hi Sirsodwaram*), this procedure aims to restore balance among the body's *Doshas* (*Vata*, *Pitta*, and *Kapha*), enhance sensory perception, and alleviate various health issues.^[5]

CASE STUDY

A 42-year-old female patient sought consultation at Rajib Gandhi Memorial College & Hospital, Kolkata, Gynecology & Obstetrics OPD due to her inability to achieve pregnancy in the last 7 years. Her menstrual cycles were regular, and she had provided her ultrasound (USG) report and several blood test results during her 1st visit. Upon examination, she was diagnosed with the presence of multiple small follicles in left ovary and one dominant follicle (14mm) on the 15th day of cycle. Prior to seeking *Ayurvedic* treatment, she had already pursued medical advice from an allopathic (conventional) hospital and had undergone a two-month course of letrozole and Injection HCG induction therapy to stimulate ovulation. However, it was not successful. Consequently, she turned to our hospital in search of *Ayurvedic* management for her fertility concerns.

Menstrual History

LMP - 21/08/2024

Duration - 3 days

Interval - 26-28 days

Flow - 2-3 pads per day - fully soaked

Clots - Mild, very small size, Pain - absent

Color - brownish red

Obstetric History - G1P1A0L1

G1- FCH X 13 YRS X FTCS

Family History - No pertinent family history

Past medical history - Patient taking 50mcg thyroxin since 2011.

Past surgical history - FTCS x 13 years back.

Personal history

Her appetite - Decreased

Sleep - disturb (3-4 hours per day)

Micturition - clear

Bowel - not clear (Constipated)

Clinical Findings**General examinations**

Built - Middle

Weight - 56 kg

Height - 5'3"

Pulse - 82/min

B.P. - 110 /70 mm of hg

Respiration rate - 16/min

Temp. - 98.6°F

Per abdomen - No tenderness and no organomegaly was detected.

Ashthavidha Pariksha

Nadi - Vaatpittaja

Shabda - Samyak

Mala - Sama

Sparsha - Sheetal

Mutra Pravriti - Samanya

Drika - Samanya

Jihwa - Sama

Aakriti - Sama

Dashvidha Pariksha

Prakriti (nature) - Vatapittaj

Vikriti - Madhyama

Sara - Madhyama

Samhanana - Madhyama

Pramana - Madhyama

Satmya - Madhyama

Satva - Madhyama

Vaya - Yuvati

Vyayamshakti - Madhyama

Aharashakti - Abhyavarana Shakti (intake of food) - Madhyama

Jarana Shakti (digestion) - Madhyam

Systemic Examination

CVS: Heart sounds (S1S2): Audible and normal

Respiratory system: normal bilateral air entry, no added sounds.

No abnormality found on other system

Breast Examination

Bilateral breast- no abnormality detected.

Investigations

1. Seminal analysis (10/06/2024) - Asthenozoospermia (2% rapid progressive motility).

2. All the routine investigations were done to female patient - 22/08/2022

Hb % - 11.3gm %

TSH - 0.499 microIU/ml

Prolactin - 34.23 ng/ml

AMH - 1.39 ng/ml

SIS (21/08/2022) - Patent B/L tubes

Treatment Schedule

The treatment was carried out with the following medicines for three months.

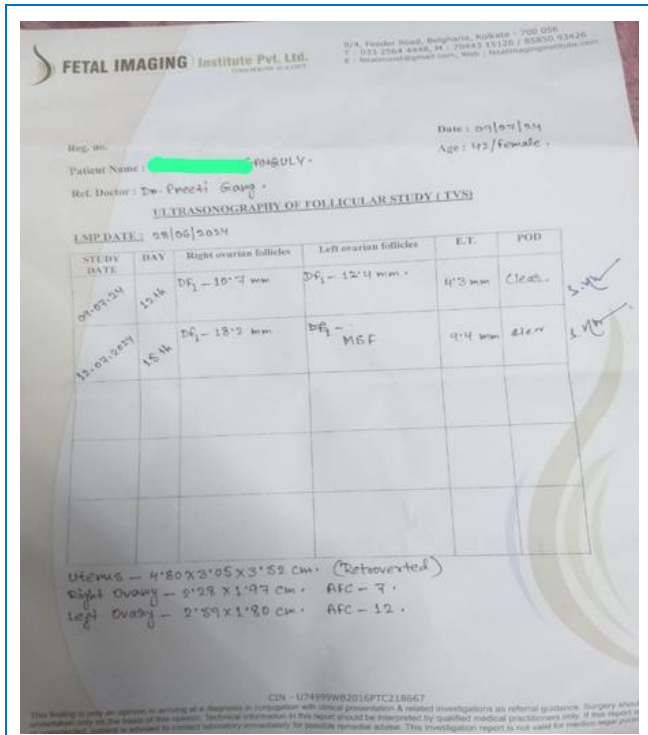
Shirodhara with *Kwath* (Decoction) of *Jatamansi*, *Vacha*, *Aswagandha*, *Brahmi*, *Gokarkhmudi*, *Sarpunkha* for 45 min from 12th -15th day of cycling. *Nasya* with *Shatpushpa-Shatavari* oil from 8th day to 14 days of periods

Shaman Aushadh

1. *Phalaghrita Pana* - 10 ml followed with 200 ml of milk at night (15th -30th day of cycle)
2. *Pushpadhanva Ras* - 2tab bd before food (2nd - 14th day of cycle)
3. *Chitrakadi Vati* - 2tab bd after food (10th - 14th day of cycle)
4. *Castor oil* - 10 ml with milk (10th - 14th day of cycle)

After 3 months of this treatment, patient missed her periods. Then we done UPT test at OPD on 21/09/2024, which was positive.

RESULT



Pic 1: Dated: 09/07/2024- No mature dominant follicle and ovulation occurred even on 15th day of cycle.



Pic 2: Dated: 04/10/2024-6 weeks 2 days pregnancy positive with normal foetal activity (Foetal heart rate normal)

DISCUSSION

Ovulation is crucial for a woman's reproductive cycle, and disruptions can significantly affect fertility. Identifying causes such as hormonal imbalances, stress, obesity, and medical conditions is essential for addressing conception challenges. Focusing on these factors is vital for reproductive and overall health. In Ayurvedic terms, *Stree Beeja* refers to the female ovum, while *Beejotsarga* relates to ovulation. Ayurvedic treatments like *Shirodhara* and *Nasya* can help manage infertility related to *Abhejotsarg*.

Mode of action of Nasya

In the practice of *Nasya Karma*, the way drugs work can be understood as follows: they enter the vital *Sringaataka Marma* and from there, they disperse into various channels known as *Srotases*. It's noteworthy that *Vridhha Vagbhata* was the pioneer in explaining how *Nasya Karma* functions.^[6] The term *Nasya* derives from the Sanskrit word *Nasa*, meaning the nose. *Nasya* stimulates the olfactory nerves and the limbic system, which in turn activates the hypothalamus, leading to the stimulation of GnRH neurons. This may help regulate the pulsatile secretion of GnRH, subsequently triggering proper gonadotropin release and promoting ovulation.^[7] This interplay highlights the significant role of olfactory stimuli in modulating brain functions related to behavior and hormonal regulation.

Mode of action of Shirodhara

Shirodhara targets vital points on the head, improving blood flow and circulation. The gentle head massage allows medicinal oils or herbal liquids (*Kwath*) to seep into the deeper layers of the scalp, creating a deeply relaxing effect that extends to the peripheral nerves around the forehead. This relaxation reaches the hypothalamus, which plays a crucial role in regulating the pituitary gland - the master regulator of hormones. By promoting this hormonal balance, *Shirodhara* aids in inducing ovulation. Furthermore, it reduces excessive levels of serotonin and stress hormones like noradrenaline and adrenaline, providing effective stress relief. This makes *Shirodhara* particularly useful in addressing stress-related conditions such as

anovulation, a common cause of infertility in women. The treatment, by calming the nervous system, not only alleviates physical stress but also works on emotional tension, creating a holistic approach to managing reproductive and mental health.^[8] In *Ayurveda*, the head (*Shirah*) is regarded as the seat of *Prana* (life force), connecting all sense organs (*Indriyas*) and known as *Uttamanga*, or the most vital part. *Shirodhara* enhances the function of *Pranadriyas*,^[9] which are often affected by psychological disorders. A well-functioning sense system promotes mental health, contributing to overall well-being and healthy ovulation. By calming the mind and balancing the senses, *Shirodhara* supports the body’s reproductive processes and hormonal balance, ensuring both body and mind remain healthy.^[10] This entire process is believed to have a role in stimulating the (H-P-O) axis, which in turn stimulates hypothalamus leading to stimulation of GnRH neurons. This may regularize GnRH pulsatile secretion which in turn triggers proper gonadotropin secretion leading to Ovulation.^[11] When the HPO axis is not functioning correctly, it can hinder the release of mature eggs from the ovaries, causing anovulation.

Mode of action of drugs used in this case^[12]

S N	Name of the drug	Rasa	Veerya	Vipaka	Karma
1.	<i>Jatamansi</i>	Tikta, Kasaya	Sita	Katu	Medhya, Nidrajanan, Manasrogahar
2.	<i>Ashwagandha</i>	Tikta, Kasaya	Ushna	Madhura	Rasayan, Balya, Vajikarana, Vatahara
3.	<i>Vacha</i>	Katu, Tikta	Ushna	Katu	Dipani, Medhya
4.	<i>Brahmi</i>	Madhura, Tikta, Kashyam	Sita	Madhura	Medhya, Rasayan, Vatahara, Prajasthapana, Ayushya

5.	<i>Gorakhmundi</i>	Madhura, Katu, Tikta, Kashyam	Ushna	Katu	Medhua, Vatashamak, Asradosha
6.	<i>Sarpunkha</i>	Tikta, Kasaya	Ushna	Katu	Vatanulomana, Asrajit, Shwasahara, Rasayan
7.	<i>Shatpushpa</i>	Katu, Tikta	Ushna	Katu	Shothhara, Vatanulomana, Deepan, Rasayan, Artavjanan
8.	<i>Shatavari</i>	Madhura, Tikta	Sita	Madhura	Medhya, Rasayan, Agnipushtikara, Stanyakara
9.	<i>Erand oil</i>	Madhur, Katu, Kashyam	Usna	Madhura	Anulomana, Dipana, Srotosodhana, Amapachana

Mode of action of drugs used in this case

SN	Name of Preparation	Properties
1.	Pushpadhanva Ras^[13]	Tridosha-Shamak, Deepan, Pachan, Beeja Dushtihar, Vatashamak, Correct the Dhatavagni, Helps in follicle maturation and Ovulation
2.	Phala Ghritam^[14]	Yoni-Doshahara, Shukra-Doshahar, Ayusham, Medhya, Promotes fertility, Arrest recurrent abortion
3.	Chitrakadi Vati^[15]	Tridosha-Shamak, Deepan, Pachan, induces ovulation, Helps in ovulation

CONCLUSION

Ayurveda offers a holistic approach to treating anovulatory infertility, especially when conventional methods like ovulation induction have failed. It focuses on rebalancing the body's natural rhythms and addressing root causes. While there are anecdotal successes, more extensive research is needed to

confirm its effectiveness. Therapies like *Shirodhara* and *Nasya*, which use herbal treatments, aim to restore hormonal balance. Overall, Ayurveda presents a promising alternative, though further studies are necessary to support its role alongside modern medicine.

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