



## A HOLISTIC AYURVEDIC APPROACH TO MANAGEMENT OF PRIMARY INFERTILITY POST RIGHT-SIDED OOPHORECTOMY FOR GRADE I IMMATURE TERATOMA- A CASE REPORT

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### ABSTRACT

**Introduction:** Infertility is a disease of the male or female reproductive system defined by the failure to achieve a pregnancy after 12 months or more of regular unprotected sexual intercourse. Primary infertility is the inability to have any pregnancy, while secondary infertility is the inability to have a pregnancy after previously successful conception. **Clinical findings:** The case presented here is of a 23 years old female patient who came with symptoms of irregular, delayed menses, oligomenorrhea and inability to conceive since two years. She had a history of Right ovarian Oophorectomy 9 years back for Grade I Immature Teratoma. She was informed by Contemporary Medicine that she had minimal chances of conception due to hormonal imbalances. Her findings when she presented to the OPD showed minimal pelvic ascites, minimal soft tissue stranding in pelvis and RIF, few enlarged mesenteric lymph nodes seen upto 11×8.5mm in size and approximately 9×7.5mm sized enlarged aorto-caval lymph nodes. **Intervention:** The case was managed through *Shaman Chikitsa* using *Ashokarista*, *Pushyanuga Churna* and *Shatavari churna*, Dietary Modifications, Yoga and Meditation. Her 10 months of Ayurvedic intervention resulted in conception and she delivered a full-term male baby weighing 2.9 kg through normal delivery. **Conclusion:** The following case of Post- Right-sided Oophorectomy, Primary Infertility was managed through a Holistic Ayurvedic Management Approach.

**KEYWORDS:** Primary Infertility, Post-oophorectomy, *Shaman Chikitsa*, Dietary Modifications, Yoga, Meditation.

### INTRODUCTION

Infertility is 'a disease of the reproductive system defined by the failure to achieve a clinical pregnancy after 12 months or more of regular unprotected sexual intercourse (WHO-ICMART glossary).<sup>[1]</sup> Primary infertility is the inability to have any pregnancy, while secondary infertility is the inability to have a pregnancy after previously successful conception.

An Immature Teratoma is a germinal malignant tumour that is composed of three germ cell layers (the ectoderm, endoderm, and mesoderm), and it is histologically characterized by immature tissue, most frequently, neuroepithelial tissue.<sup>[2]</sup> Immature Teratoma represent

<1% of ovarian cancers, occurring more frequently in young women<sup>[3]</sup> Mature Teratoma containing only fully differentiated tissue are considered grade 0, and Immature Teratoma range from grade 1, comprised of less than 10% immature neuro-epithelium, to grade 3, more than 50% immature neuro-epithelium present. Oophorectomy is the surgical removal of the ovary and can be unilateral or bilateral.<sup>[4]</sup> Oophorectomy is a treatment options for grade I Immature Teratoma of the ovary.

According to Ayurveda, we take Primary Infertility as *Prathamik Vandhyatva*. The main causes of *Vandhyatva* is *Artava-vaha Srotodushiti*.<sup>[25]</sup>

The protocol used in this case consists of *Shaman Chikitsa* using *Ashokarishta*, *Pushyanuga Churna* and *Shatavari Churna*, Dietary Modifications, Yoga and Meditation.

*Ashokarishta* is a poly-herbal formulation and is described in Bhaisajya Ratnavali<sup>[6]</sup> and Sahasrayogam.<sup>[7]</sup> In practice, *Ashokarishta* proved its efficacy in almost all gynecological disorders.

*Pushyanuga Churna* is a compound formulation consisting of 26 ingredients, 25 herbal. It is named so because the ingredients have to be collected during *Pushya Nakshatra*. It is useful in menstrual disorders, bleeding disorders and in *shodhan of dushya*.

*Shatavari* is a highly effective herbs in problems related female reproductive system.<sup>[8]</sup> Saponins (also known as Shatavarins) and flavonoids are the main contributors towards the estrogen regulating properties of *Shatavari*.<sup>[9]</sup> Kashyap mentioned *Shatavari* in the management of amenorrhoea, delayed menarche, excessive and heavy menstruation (menorrhagia, metrorrhagia, meno-metrorrhagia), hypomenorrhoea, having improper menstrual flow.<sup>[10]</sup> *Shatavari* is known to play a good role in treating infertility (*vandhyatwa*) and recurrent abortion (*Garbhasrava* and *garbhapata*). Kashyap says that *Shatavari* brings about menstruation and progeny.<sup>[11]</sup> Sushruta and Kashyap, both have mentioned that *Shatavari* has the quality of *vrishya* (aphrodisiac) and hence helps in attaining conception.<sup>[12]</sup>

Diet plays a very important role in the management of conditions like infertility. Some dietary constituents seem to have a positive effect on the female reproductive system. The patient in this case was said to incorporate garlic and milk in her diet and avoid *Tikshna Aahar*, alcoholic preparations and smoking. Later, when she conceived the baby, she was also given dietary advice according to *Garbhini Paricharya*.

Yoga is widely known for stress reduction and is a potential adjunct therapy, that addresses both physiological and psychosocial aspects of infertility.<sup>[13]</sup> Yoga boosts the function of the reproductive system, by targeting the organs of abdominal and pelvic area.

Infertility leads to stress, anxiety and depression. Meditation can be useful in such conditions. The outcome was favourable, culminating in a full-term pregnancy and uneventful delivery, suggesting the potential efficacy of an integrative approach in complex infertility cases.

#### PATIENT INFORMATION

A 23 years old female patient, married for 2 years, consulted the OPD with complaints of irregular, delayed menses, oligomenorrhea and inability to conceive since two years. She had a history of Right ovarian Oophorectomy 9 years back for Grade I Immature Teratoma. She was informed by Contemporary Medicine that she had minimal chances of conception due to hormonal imbalances.

Her findings when she presented to the OPD showed minimal pelvic ascites, minimal soft tissue stranding in pelvis and RIF, few enlarged mesenteric lymph nodes seen upto 11×8.5mm in size and approximately 9×7.5mm sized enlarged aorto-caval lymph nodes.

She was initially treated with Allopathic medications for 15 days, following which a right-sided oophorectomy was performed nine years ago. Post-surgery, she was advised to take oral contraceptive pills, which she continued as per her gynaecologist's recommendation at that time.

There was no significant family history of infertility, ovarian tumours, or related reproductive disorders.

#### CLINICAL FINDINGS

Physical examination done on 15/01/2023 at 1:00pm showed that the patient was of medium body built with normal clinical findings. The patient had a height of 158cm and weight of 55kg. Her vital signs were normal with temperature of 98.7, pulse of 80 bpm, Respiratory rate of 19/min and B.P. of 125/80 mm of Hg. She didn't present with any significant per abdominal findings.

She complained of irregular, delayed menses, oligomenorrhea and inability to conceive in the past two years.

#### TIMELINE

Date	Observation/Remarks	Treatment
24 <sup>th</sup> January, 2015	Patient consulted gynaecology OPD for pain in right flanks, distension of abdomen and irregular menses.	Treatment initiated as per Allopathy protocols
9 <sup>th</sup> February, 2015	Patient came for follow up with no any significant relief	USG advised
1 <sup>st</sup> February, 2015	USG revealed Right ovarian mass	Advised for Cystectomy and histopathology
13 <sup>th</sup> April, 2015	Surgery done	Right ovarian Oophorectomy done and sample sent for histopathology
17 <sup>th</sup> April, 2015	Histopathology reports obtained	Right ovarian mass consisted of globular ovoid enlarged ovarian structure measuring

		20*20cm. Cut sections show yellowish solid areas with adherent mucinous substance, brownish fluid along with cheesy material and hair. Bony tissues were also present and capsule was intact. No extracapsular tumor extension seen. Microscopic description: Sections showed germ cell tumor comprising of tissue elements derived from all three germ layers, predominantly comprising of mature tissues. Occasional foci of immature cartilagenous tissues are noted. Neural elements are abundant comprising of glia, ganglion cells and nerves bundles. Some areas showed lymphoid aggregates.
19 <sup>th</sup> April, 2015	Discharged from the hospital	Prescription of regular oral contraceptive pills given
29 <sup>th</sup> October, 2022	Patient came to consult in Ayurveda OPD in a private clinic situated in Baneshwor, Kathmandu, Nepal	General history taken and CT-scan of abdomen advised
1 <sup>st</sup> November, 2022	Reporting of Ct-Scan abdomen obtained	Post operative status with: Minimal pelvic ascites Minimal soft tissue stranding in pelvic and RIF Few enlarged mesenteric lymph nodes Enlarged aorto-caval lymph nodes
2 <sup>nd</sup> November, 2022	Ayurvedic treatment started	<i>Shaman Chikitsa</i> using <i>Ashokarista</i> , <i>Pushyanuga Churna</i> and <i>Shatavari churna</i> , Dietary Modifications, Yoga and Meditation prescribed.
2 <sup>nd</sup> December, 2022	General follow up	Follow up done after a month with symptomatic relief but unable to conceive during initial months of married life. Patient counselled and advised to diligently follow the prescribed medications.
15 <sup>th</sup> March, 2023	Follow up	General follow up with continuation of the same treatment protocol
17 <sup>th</sup> April, 2023	Follow up	Patient came for follow up with CT-scan of abdomen which showed the following: Mild fat strandings in right iliac fossa region. No obvious mass/nodular deposits. No evidence of residual/recurrent mass Minimal pelvic ascites
13 <sup>th</sup> June, 2023	Follow up	General follow up with continuation of the same treatment protocol
11 <sup>th</sup> September, 2023	Follow up	Patient came for follow up with Obstetric USG Scan which showed the following: Single live intrauterine gestation corresponding to 12 weeks, 5 days Nuchal translucency:0.9mm Nasal bone well seen. Perisac collection of 6.7cc. Patient advised general yoga protocol for Pregnancy and also given suggestions regarding Garbhini Paricharya
11 <sup>th</sup> March, 2024	Delivery of child	Patient delivered a full-term male baby weighing 2.9 kg through normal delivery.

## DIAGNOSTIC ASSESSMENT

By analysing the clinical features and investigations, the disease was diagnosed as primary infertility due to Right ovarian Oophorectomy for Grade I ovarian Teratoma. Patent fallopian tube and normal uterus suggested there were no tubal or uterine factors for infertility. USG and CT scans of abdomen were used for initiation of treatment and for periodic follow up.

## THERAPEUTIC INTERVENTION

The therapeutic plan was designed using an integrative Ayurvedic Approach focused on restoring reproductive health through Shamana Chikitsa, Diet, Yoga and mind-body interventions.

### 1. Shaman Chikitsa

- Ashokarista*<sup>[14]</sup> 20 ml BD with equal amount of water
- Pushyanuga churna*<sup>[15]</sup> 5gm BD with rice water
- Shatavari Churna*<sup>[16]</sup> 5gm BD with milk

### 2. Dietary modifications

#### A. Pre- conception Phase

*i. Pathya Aahar*(Recommended diet):  
*Lasuna*(Garlic)<sup>[17]</sup>, *Ksheera* (Milk)<sup>[18]</sup> to be incorporated in daily diet.

*ii. Pathya Vihara* (Recommended lifestyle): coitus during *Ritukala* (fertile window)

*iii. Apathya Aahar*(Food to be avoided): *Tikshna Aahar* (pungent, excessively spicy or heating foods)

#### General Advice

- Avoidance of alcohol and smoking
- Avoid excessive exercise

#### B. Post- conception (During pregnancy)

Inclusion of *Ghrita* (clarified butter), *Jangala Mamsa* (lean meat), *Shastika Shali* (variety of rice), *Dadhi* (curd), *Ksheera*(milk) and *Navaneet* (butter) in diet to support fetal growth and maternal health.<sup>[19]</sup>

### 3. Yoga Protocol

#### A. Before conception:

Total Time duration: 25 minutes

Frequency: 5 days a week

Type	Name	Duration/rounds
<i>Sukshma vyayama</i>	Neck rotation	3 rounds each
	Shoulder rotation	
	Hip rotation	
	Knee exercises	
	Ankle exercises	
Standing <i>asanas</i>	<i>Tadasana</i>	2 rounds
	<i>Tiryak tadasana</i>	2 rounds
	<i>Trikonasana</i>	2 rounds
Sitting <i>asanas</i>	<i>Dandasana</i>	1 round
	<i>Vajrasana</i>	1 round
	<i>Gomukhasana</i>	2 rounds
	<i>Mandukasana</i>	3 rounds
	<i>Vakrasana</i>	2 rounds
	<i>Bhadrāsana with Titli asana</i>	3 rounds
	Prone <i>asanas</i>	<i>Bhujangasana</i>
Supine <i>asanas</i>	<i>Setubandhasana</i>	2 rounds
	<i>Pavanmuktasana</i>	2 rounds
	Pranayama:	<i>Nadishodhana</i>
	<i>Bhramari</i>	3 rounds

#### B. After conception

Total Time duration: 20 minutes

Frequency: every alternate day

Yoga	1 <sup>st</sup> trimester	2 <sup>nd</sup> trimester	3 <sup>rd</sup> trimester
<i>Sukshma vyayama</i>	10 mins	7 mins	5 mins
Standing <i>asanas</i>	<i>Tadasana</i>	<i>Tadasana</i>	<i>Tadasana</i>
	-	<i>Veerabhadrasana</i>	<i>Veerabhadrasana</i>
Sitting <i>asanas</i>	<i>Dandasana</i>	<i>Dandasana</i>	<i>Dandasana</i>
	<i>Sukhasana</i>	<i>Sukhasana</i>	<i>Sukhasana</i>
		<i>Baddhakonasana</i>	<i>Baddhakonasana</i>
	<i>Vajrasana</i>	<i>Vajrasana</i>	<i>Vajrasana</i>
Pranayama	<i>Nadishodhana</i>	<i>Nadishodhana</i>	<i>Nadishodhana</i>

4. Meditation: Meditation for 5 minutes and 7 rounds of Om chanting prescribed for every morning before breakfast.

#### FOLLOW UP AND OUTCOMES

Clinical assessment of patient was done periodically at an interval of varying periods of 15 days to 3 months. There were no any adverse effects recorded during the period of treatment. Periodic Sonography and CT-Scan of abdomen were also done. Finally, on ultrasonography, presence of single intrauterine gestational sac was observed. Later she delivered a male baby weighing 2.9kg on 11<sup>th</sup> March, 2024 through normal vaginal delivery.

#### DISCUSSION

The present case involved a young female, chief complaint presented by the patient was irregular menses, oligomenorrhoea and inability to conceive. After clinical evaluation and analyses of reports, the female patient was diagnosed as having Primary Infertility due to Right ovarian Oophorectomy 7 years ago for Grade I Ovarian Teratoma. The medicine were selected based on symptomatic relief and acting on the female reproductive system.

*Ashokarista* has *Vata*-balancing properties and helps to provide relief from menstruation-related disorders. The 15 drugs used in its preparation include *Ashoka* (*Saraca indica*), *Dhataki* (*Woodfordia floribunda*), *Ajaji* (*Nigella sativa*), *Musta* (*Cyperus rotundus*), *Shunti* (*Zingiber officinale*), *Daruharidra* (*Berberis aristata*), *Utpala* (*Nymphae stellata*), *Haritaki* (*Terminalia chebula*), *Bhibitaki* (*Terminalia belerica*), *Amalaki* (*Embllica officinalis*), *Amrasthi* (*Magnifera indica*), *Jeeraka* (*Cuminum cyminum*), *Vasa* (*Adhatoda vasica*), *Chandana* (*Santalum album*) and *Guda*. In practice, it has proved its efficacy in almost all gynecological disorders.

*Pushyanuga churna* is also used in the treatment of menstrual disorders. It is a compound formulation consisting of 26 *dravyas* among which 25 are *kastha dravyas*, *Patha* (*Cissampelos pareira*), *Jambu* (*Syzygium cumini*), *Amra* (*Magnifera Indica*), *Shilabheda* (*Bergenia lingulata*), *Rasanjana* (*Berberis aristata*), *Ambastha* (*hibiscus sabdariffa*), *Mocharas* (*Salmalia malabarica*), *Samanga* (*Mimosa pudica*), *Vatsaka* (*Holarrhena antidysenterica*), *Bilva* (*Aegle marmalos*), *Musta* (*Cyperus rotundus*), *Lodhra* (*Symplocus racemosa*), *Katvanga* (*Myrica esculenta*), *Maricha* (*Piper nigrum*), *Shunthi* (*Zingiber officinale*), *Mridvika* (*Vitis vinifera*), *Raktachandana* (*Pterocarpus santalinus*), *Katphala* (*Ailanthus excels*), *Padmakeshar* (*Nelumbo nucifera*), *Ananta* (*Hemidesmus indicus*), *Dhataki* (*Woodfordia fruticosa*), *Madhukar* (*Glycyrrhiza glabra*), *Arjuna* (*Terminalia Arjuna*)<sup>[20]</sup> and one is *Rasa dravya* i.e., *Gairika*. *Pushyanuga Churna* mainly comprises of *Tikta*, *Kashaya Rasa*, *Katu Vipaka*, *Sheeta Veerya* and *Laghu, Ruksha Guna*. It is *Grahi*, *Sravahar* and *Stambhaka* due

to *tikta* and *Kashaya Rasa*, *Pittahar* due to *Sheeta Veerya* and *Kaphahar* due to *Laghu-ruksha guna*. It improves Uterine Conditions and reduces inflammation due to presence of *Garbasthanpaniya*, *Raktasthapaka*, *Shothahara* and *Vedanashamaka dravyas*.<sup>[21]</sup>

*Shatavari churna* is useful in infertility and in maintaining hormonal balance. *Shatavari* has nourishing properties, used in maintaining healthy reproductive system, promotion of lactation, supporting already balanced female hormones. *Shatavari* works as a wonder drug in various gynaecological disorders. *Shatavari* roots extracts can be seen to balance female hormonal levels. It is very useful in infertility because it improves folliculogenesis and ovulation<sup>[22]</sup>, prepares the belly for conceiving, promotes lactation and maintains the uterus. Its consistent use in this case likely contributed to improved ovulatory function and uterine receptivity.

The patient was asked to incorporate *Lasun* (garlic) and milk in her diet. Studies have reported that garlic may affect certain hormones such as estrogen and progesterone.<sup>[23]</sup> Some animal studies have also shown garlic to improve fertility, including increasing the number of viable eggs in female animals.<sup>[24]</sup> Milk, being *Ojasya* and *Rasayana*, enhances tissue nourishment and hormonal balance.

Yoga that involves forward bending can be useful because it is found to be associated with the lower abdominal and pelvic area. Yoga has been shown to modulate the hypothalamic-pituitary gonadal axis, balances hormonal levels and reduces stress, and improving the overall quality of life. Hence, yoga is a natural, safe and inexpensive way of helping to combat infertility.

Meditation can bring clarity to the mind and maintains healthy body physiology, and gives patients the patience to undergo the rigors of infertility treatments.. Relaxation brought about by meditation makes the individual feel better about their body and, hence leading to healthier lifestyle. When one understands and can attain physical relaxation, one tends to feel better about herself/himself, being able to lead a healthier lifestyle and increased sensitivity regarding symptoms and body processes.<sup>[25]</sup>

Collectively, the holistic approach not only addressed the patient's reproductive complaints but also restored overall health. The sustained and systematic Ayurvedic regimen contributed to the conception and successful pregnancy, highlighting the potential role of integrative approaches in managing complex infertility cases.

#### PATIENT PERSPECTIVE

Patient was very pleased with the outcomes of her treatment with Ayurvedic Regimen and she gave us a written perspective quoted as follows:

“Over the past 3 years, I have been undergoing treatment with Ayurvedic Medicine, which has significantly improved my health. I believe my case may provide valuable insights and therefore provide consent to share my medical history and treatment details for your study. I thank you for being truly compassionate.”

#### INFORMED CONSENT

Patient provided us with a hand written informed consent to share her case. Consent form is available with the corresponding author on request.

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