International Research Journal of Ayurveda & Yoga

An International Peer Reviewed Journal for Ayurveda & Yoga

Kshetrikaran –A Multipronged Ayurvedic Strategy To Enhance Fertility Outcomes In Women With Uterine Cavitary Defects W.S.R. To Uterine Fibroids. And Endometrial Polyp

Arun Gupta,[1] Sipika Swati[2] Laxmi Priya Dei[3]

VOLUME 4 ISSUE 8

1. Final year PG Scholar MS (PTSR), Department of PTSR, IPGT &RA, GAU, Jamnagar. gupta.arun9@gmail.com
2. Assistant Professor, Department of PTSR, IPGT& RA, GAU, Jamnagar.
3. HOD, Department of PTSR, IPGT&RA, GAU, Jamnagar.

Corresponding Author : Dr. Arun Gupta, Final year PG Scholar MS (PTSR),Department of PTSR, IPGT &RA , GAU , Jamnagar. gupta.arun9@gmail.com

Article received on 19th June 2021 Article Accepted 16th August 2021 Article published 31st August 2021

ABSTRACT: -

Uterine Cavitary lesions (*Adhimamsa/ Granthi/ Arbuda)*, known causes of female sub fertility and infertility. These lesions by virtue of their space occupying properties and pro-inflammatory nature may affect the successful implantation and provide a hostile environment for implantation & continuation of a pregnancy like a stone underneath a growing root. A 29 year old female nulligravida presented with failure to conceive for 2 years. Her investigations revealed multiple uterine fibroids and endometrial polyp. *Kshetrikarana* treatment helps in optimizing endometrial receptivity and creating a pro-conceptional environment. Therefore a composite treatment plan based on *Dosha Dhatu* vitiation, comprising of *Samana chikitsa*, *Palasadi Yoga Basti* and *Garbhashaya lekhana* was planned and implemented. Size of uterine fibroids reduced considerably after the treatment, endometrial polyp was removed by D&C. Patient conceived within four months of treatment and delivered a healthy full term female baby per vaginally without any ante-natal and post-natal complications albeit presence of the intra-mural fibroids.

Key words: *Granthi*, *Adhimans*,*Garbhashaya Arbuda*, Infertility caused by Fibroid and Endometrial Polyp, *Palasadi Yoga Basti.*

How to cite this article: Gupta A,Swati S, Dei L.P *Kshetrikaran* –A Multipronged Ayurvedic Strategy To Enhance Fertility Outcomes In Women With Uterine Cavitary Defects W.S.R. To Uterine Fibroids. And Endometrial Polyp IRJAY. [Online] 2021;4(8): 78-87. Available from: http://irjay.com ; DOI:https://doi.org/10.47223/IRJAY.2021.4810

INTRODUCTION

In *Ayurveda*, all the major three classical treatises elucidated the process of fecundation with a simpler analogy of the farm land. In this context, *aashaya* i.e. *Garbhashya* (Endometrial cavity or uterus) must be free from any structural or functional defects to provide a healthy site for nidation to the products of fertilization. *Aashya dushti*, is one of the listed hindrance in the successful culmination of pregnancy. Uterine cavity abnormality can be contributory factor of subfertility in about 10% of the women and abnormal uterine findings are reported in as high as 50% of the women with recurrent implantation failure.[1] Sub-fertility due to fibroids can be attributed to physical impedence to the sperm transport, alteration in myometrial contractions and chronic inflammatory reaction, decreased endometrial receptivity, unfavorable hormonal milieu, hindering the process of implantation. Alteration in uterine peristalsis i.e. accelerated mid-luteal peristalsis in presence of the intra-mural fibroid is highly associated with factor subfertility due to intra-mural fibroids.[2] Other common intra-cavitary defect is, Endometrial Polyp, with prevalence rate as high as 20-30% in the women of reproductive age group and 35% of women with endometrial polyp suffer from the sub-fertility or infertility.[3][4] Like uterine fibroids, endometrial polyps also cause sub-fertility attributable to mechanical obstruction of the cervical canal or fallopian tube affecting the sperm transport, exaggerated pro-inflammatory endometrial responses similar to an intra-uterine device hindering the process of implantation.[5] Currently available medical management of fibroids including progestin, OCPs, Non-steroidal anti-inflammatory drugs, tranexamic acid, GnRH agonist, progesterone receptors agonists, selective progesterone receptor modulators and aromatase inhibitors have multiple undesirable side effects and sometimes disturb the hormonal milieu, alter the endometrial morphology, menstruation pattern and agents like letrozole cause ovarian hyperstimulation, which may affect the obstetrical outcomes. Additionally, Progesterone receptors agonists, selective progesterone receptor modulators and aromatase inhibitors have a short lived effect of 3 – 6months. Myomectomy, Abdominal or laparoscopic are the surgical treatment of choice but their post-operative risks and complications like post-operative adhesions may negatively impact future fertility and also enhance the possibility of the cesarean delivery if clinical pregnancy is achieved. Recurrence of fibroid also reported within 5 years of myomectomy in around 15-51% of the patients.[6] However, many studies reported, Dilation and curettage (D&C) combined polypectomy enhance the chances of natural conception as endometrial polyps do not regress spontaneously. This process also provide an opportunity to for investigating abnormalities and removal of the obstructing lesion. [7] *Yoni Dosha* is the primal factors which can cause

vandhytava (failure to conceive).[8] Intra-cavitary lesions like fibroids and endometrial polyp represent the *Adhimamsa* (neoplasia) manifestation of *Mamsa Pradoshaja Vikara* (Connective and muscular tissue disorders) causing vitiation of *Kshetra* or *Yoni* (Female reproductive tract) leading to sub-fertility. In such disorders, Ayurveda advocates the use of composite *shodhana* (Radical elimination approach) through *Panchkarma* and surgical methods. [9] Therefore, keeping in view the multiple side effects of various pharmacological modalities, prohibitive cost of medical and surgical treatment with limited success and by employing the conceptual framework of *Kshetriakarana* (preparation of endometrial field for implantation) *Panchkarma* procedure of *Yoga Basti* (Medicated enema regimen) and surgical method of *Garbhashaya Lekhana* and *Chhedan* (Uterine dilation, curettage and removal) of Endometrial Polyp was employed. This is supplemented with the with *Shaman chikitsa* (Medical management) for ensuring *Shuddha Artava* (healthy menstrual cycle).

CASE PRESENTATION

A 29-year-old nulligravida nullipara visited the *Prasutitantra and Streeroga* outpatient department (OPD) of Institute for Postgraduate Teaching and Research in Ayurveda, Jamnagar, on May 31, 2018 (4th day of LMP).

Chief Complaints:

- Scanty menses since 4 years.
- Failure to conceive since 2 years.

History of Present Illness: According to the patients she had been bleeding lesser than usual since 4 years. Her LMP was 28-05-2018. According to her, she had a regular menstrual cycle of 28-30 days, duration of bleeding phase 2 -3 days only with minimal discharge (1-2 pads a day). Menstrual discharge described as dark reddish brown in color without any unwanted odor or distressing pain or discomfort. The couple had been married for 4years and trying to conceive naturally for two years, but failed to do so despite regular unprotected coitus. She denied any history of trauma, prolonged illness, tuberculosis, diabetes mellitus, thyroid disorder or other systemic illnesses. **Past Medical and Surgical History**: Unremarkable.

Family History: Unremarkable.

Obstetric History: Nulli gravid

Contraceptive history: No contraceptive had been ever used.

Drug History: Unremarkable

Coital History: Regular unprotected coitus beginning from 7th day of the menstrual period, on alternate days till next menstrual period. No history of enteral or thrustal dyspareunia/ post coital bleeding

Table 1: Before treatment Fertility panel report of the patient and husband

Hormone	Blood Levels	Normal Range	Remarks
FSH	6.95mIU/ml	< 7 mIU/ml	Normal
LH	2.92mIU/ml	1.9 to 12.5 mIU/ml	Normal
PL	13.01 ng/ml	2 to 29 ng/ml	Normal
AMH	**0.531 ng/ml**	**2.1 ng/ml**	**Lower**
USG/ HSG	Reports not available with patient		
Husband's semen Analysis	Normal for volume, count and motility grading		

Physical Examination:

General examination: Appeared to be apparently a well developed average built healthy adult female with developed secondary sexual characters with no apparent pallor, cyanosis, jaundice or edema. Height- 154 cm Weight- 53 Kg BMI- 22.35

Vitals: Temp- 98.8 F, Pulse- 74 bpm, BP 110/80 mmHg Respiratory rate: 15/min

Systemic examination:

CNS: Conscious, alert and well oriented.

CVS: S1, S2 heard, No murmur heard

Chest: Normal vesicular breathing sounds present.

Per-abdomen: Soft with bowel sounds present, no signs of inflammation or swelling, no organomegaly noted.

Per-speculum and per vaginal examination: No vulval or vestibular lesion noted, no cystocele or rectocele, no vaginal or cervical lesion noted. Minimal discharge in vagina and fornices. On bimanual examination, cervix was firm, non-tender on movement. The uterus was found to be firm, retroverted and bulky in size non tender on movement, both the lateral fornices were found to be non-tender and free.

Table 2: *Rogi Praikshan* Patient Examination findings according to Ayurveda Methodology

Ashta Vidha Pariksha	
Nadi: *Anushna sheeta, sama, vata gati*	***Mala***: *1-2, niraama, mrudu, snigdha, ashool mala pravruti*.
Mutra : 5-6 times/day, *nirved, nirdaaha, prakrut varn, gandh.*	***Jivha*** : *Alipta, prakrut varna, snigdha*
Shabda: *Prakrutha*	***Sparsha***: *Anushna-Sheeta, mridu*
Druk : *Prakrutha*	**Akriti:** *Madhyama, Prakrut*

Dash Vidha Pariksha	
Prakruti : *Vata- Kapha Pradhana*	***Sara:*** *Madhyam Sara*
Samhanan *Madhyam*	***Saatmya:*** *Sarva Rasa, Tail, Matsya, Shaali, Kshir varga satmya* (*Madhur rasa satmaya*)
Satva: *Madhyam*	***Aahar Shakti***: *Madhyam*
Jaran Shakti : *Madhyam*	**Vyayam Shakti:** *Madhyam*
Bala: *Madhyam*	**Vaya:** *Madhyam*

***Rog Pariksha* & Investigations:**

Treatment Plan:

a) Investigation for Structural integrity of Uterus and vagina utero-vaginal axis.

b) Follicular and Ovulation Study

c) HSG to assure patency of the tubes

d) *Artava Kshaya* management

e) *Garbhashaya gata Adhimamsa* management (*Kshetrikarana*)

Table 3: Chronology of the treatment with rationale

Date	Investigation and Treatment Rationale	Particulars of Investigations, Treatment and follow up
28/05/2018	*Shaman Chikitsa* for : 1. *Artava Kshaya Lakshana* 2. Lower AMH 3. *Garbhashaya Shodhana*	• *Dashmoola and Varun Shigru Kwath 20 ml twice a day,* • *Trikatu(1gm), Bharangi(2gm), Shuddh Tankan(500mg) with Guda anupana* • *Raja Pravartini vati 2 tabs tds after meals with luke warm water.* • Dietary and Life style counseling done and patient advised regarding *Rajaswala Paricharya and Garbhadhana Vidhi* as per classical texts.
07/06/2018	**Investigation:** USG for uterus adnexa and follicular Sonographic study in the radiology department of IPGT&RA. **Treatment:** Same as above	**Uterus-** Normal retroverted with **multiple small fibroids**, largest one **ant wall fibroid measuring 28*28mm in lower segment**, an Endometrial polyp also noted. **Bilateral ovaries:** Normal and larger in size, dominant follicle was in the right ovary measuring 20*16mm.
09/06/2018	**Investigation:** Serial Follicular Sonographic study. **Treatment:** Same as above	Ovulation Study revealed a ruptured follicle on 12th day of menstrual period. It ruled out the ovulatory factor.
07/07/2018	**Investigation:** USG follow up for fibroid size. **Treatment:** Same as above	**Uterus:** Multiple well defined hypoechoeic lesions in the wall of the uterus the **largest one measuring about 1.7 *1.5 cm,** few fibroids of average 1.0 to 1.5 cm size in both walls of uterus but not disturbing endometrial cavity. Right ovary showed a dominant follicle of 16*16 mm size, **a polyp seen in the fundal part of the endometrial cavity**
19/07/2018	**Treatment:** Same as above	**Patient had her menstruation and reported improved bleeding in this cycle with brighter red colour for 3-4 days**
26/07/2018	**Investigation**: HSG to rule out tubal factor.	HSG – Normal, no tubal block was seen.

	Treatment: Same as above	
02/08/2018	**Investigation**: USG (TVS) Follow-up and Ovulation study. **Treatment:** *Shodhana* treatment- *Basti* planned.	*Palashadi Yoga Basti* regimen (8 medicated enema) started. Basti regimen completed on 09/08/2018.
23/08/2019	**Treatment:** Polypectomy under GA **Investigation**: Histopathological examination	HPE Report: Inflamed adenomatous polyp. ***Shamana chikitsa* as above continued.**
12/09/2018	**Treatment:** *Shamana chikitsa* continued. **Investigation:** TVS on 5th day of menstrual cycle	First day of the Post polypectomy menstrual period,which was normal in amount and colour. **Uterus:** Multiple well defined hypoechoeic lesions in the wall of the uterus the **largest one measuring about 0.5 *0.5 cm,** few very small fibroids seen in both walls of uterus but not disturbing endometrial cavity.
23/09/2018	**Investigation**: TVS ovulation study Treatment: *Post Garbhadhana, Garbhasthapak Aushadhi* started	Imminent ovulation seen on USG. *Garbhadhaan vidhi* advised. *Bala churna* (2 gm), *Guduchi* (2gm), *Shatavari* (2gm), *Madhu yashti* (2gm) with milk and ghee till next menstrual period. Avoiding *Garbhopghatkara bhava* (Abortion causing factors).
12/10/2018		Patient missed her period.
22/10/2018	**Investigation:** UPT **Treatment:** *Garbhasthapak Aushadhi*	UPT Positive for pregnancy. Treatment: As above

Table 4: Constituents of *Palashadi Niruha Basti*

Palashadi Niruha Basti				
Components of *Niruha Basti*	**Name of the Ingredient**	**Scientific name**	**Part used**	**Quantity**
Madhu	Honey			60ml
Saindhav	Rock Salt			5gm
Sneha	Tila Oil	*Sesamum indicum*		60ml
Kalka Dravya	Vacha	*Acorus calamus*	Rhizome powder	5gm
	Pippali	*Piper longum*	Fruit powder	5gm
	Shatapushpa	*Anethum sowa*	Fruit powder	10gm
Kwatha	*Palasha*	*Butea monosperma/frondosa*	Root Bark Powder Decoction	480 ml

Procedure of Making *Basti Drava* (Emulsion): Triturate the honey for 5-10 minutes in a marble mortar, mix rock salt in it and triturate for another 5-10 minutes till it gets properly mixed, add *Tila oil* and triturate for 10 minutes till it forms a good emulsion, now add the soaked powders of *Vacha, Pippali* and *Shatapushpa* and triturate it well for another 10-15 minutes till it gets mixed well and finally add *Palasha* decoction and triturate hard for another 10-15 minutes till it forms a smooth emulsion and oil is not visible as droplets. Filter the mixture with a two-fold cloth or a fine sieve.[10] ***Palashadi Yoga Basti Procedure***: *Yoga Basti* is a regimen of *8 bastis* (medicated enemas)in which there are 5 *Anuvaasan basti* (medicated oil enemas) and 3 *Niruha basti* (medicated emulsion enemas).

***Purva Karma* (Pre-procedure activities):** *Adhodhara sneha abhyanga* (oil massage below navel, loin and back region) with *bala tailam* and *sthanik naadi swedan* (Steam fomentation)with *Dashmoola eranda kashaya.*

***Pradhana Karma* (Procedure)**

Table 5: Schedule, Posology and Method of the *Basti*

***Basti* Day**	**Name of *Basti***	**Dose**	**Method of Administration**
1	*Dasmoola Taila Basti*	*60 ml*	Syringe and Rubber catheter
2	*Dasmoola Taila Basti*	*60ml*	Syringe and Rubber catheter
3	*Palasadi Niruha Basti*	600 ml	Enema can
4	*Dasmoola Taila Basti*	*60ml*	Syringe and Rubber catheter
5	*Palasadi Niruha Basti*	600 ml	Enema can
6	*Dasmoola Taila Basti*	*60ml*	Syringe and Rubber catheter
7	*Palasadi Niruha Basti*	600 ml	Enema can

8	*Dasmoola Taila Basti*	*60ml*	Syringe and Rubber catheter

Paschat Karma: Patient was allowed to rest in the ward and given warm food after *Niruha basti*. Patient observed for any complications of *Basti.*

DISCUSSION

Basti and its role in management of *Yoni* (*Kshetra*) *Dosha*: *Acharya Charaka* highlighted that affliction of *Yoni* (female reproductive tract) with various *Dosha* (disease causing factors) decrease its fecundity and fertility.[11] *Vata Dosha* is implicated as the main pathogenic agent in the occurrence of *Yoni Vyapada.*[12]. *Basti* has been described as one of the best treatment option for eradication of the vitiated *vata* from the pelvic region and is found to be highly effective in infertility and sub-fertility despite regular coitus.[13] [14] Classical texts also recommend *Basti* treatment in a clinical scenario of *Rajah kshaya, Yoni Vyapada, Vandhyatava* (Infertility).[15] *Palashadi Basti* has been mentioned as one of the *Yoni Doshahara* in *Charaka Samhita.* [10] In the above case, *Basti* demonstrated all the above actions causing expulsion of vitiated *Dosha* thereby remarkably reducing the size of the fibroids in this patient. *Basti* is also known for its immuno-modulatory, local circulation enhancing, endotoxin removal, hypothalamic- gut and gonad axis stimulant, action which help in creating a good intra-uterine milieu for conception and optimizing the reproductive outcomes. [16][17] *Basti* by virtue of its principle of absorption, neural stimulation, chemical and mechanical modulates the local nervous responses and correct the abnormal uterine peristalsis. It's symbiotic action on local gut flora and immune response modulation may also contribute in creation of a pro-conceptional environment by mitigating chronic inflammatory changes. Surgical removal of morbid *mamsa Dhatu* which might have a contributory role in pro-inflammatory milieu leading to failure of conception also enhance the chances of the conception. In combination, anti-inflammatory, anti-tumor properties of *Dasmoola, Varunadi Kwatha, Palasadi Basti* constituents and surgery aided in *Dosha* alleviation from the *Kshetra* (endometrial cavity). *Bharangi Trikatvadi Yoga* and *Rajah Pravartani* owing to their emmenagogue action aided in *lekhana karma* (medical scrapping) and generation of *Shuddha Artava.* Use of *Garbhasthapana* drugs like *Bala* (*Sida cordifolia*), *Guduchi* (*Tinospora cordifolia*), *Shatavari* (Asparagus racemosus) and *Yashtimadhu* (*Glycrrhiza glabra*) with ghee and milk helped in the nourishment of the endometrium for future implantation. Therefore, the treatment protocol helped in optimizing endometrial environment by removing the morbid material and nourishing the *beeja* (Female Gamete) and kshetra (Endometrial cavity) which ultimately led to uncomplicated ante-natal period and delivery of the baby without any intra-partum post-partum complications, albeit the presence of small intra-mural fibroids.

CONCLUSION

The case report validates the conceptual relevance of the *Kshetrikarana* in the management of female infertility due to proliferative intra-cavitary lesions i.e. uterine fibroids and endometrial polyp. A composite treatment approach on the basis of *Dosha-Dhatu* vitiation assisted in optimizing the fertility

outcome without any adverse effects of the modern pharmacological treatment. The treatment approach is found to be patient friendly, cost effective and not requiring prolonged hospital stay and associated post procedural complications. The trial of *Palashadi Yoga Basti* in the patients with subfertility due to space-occupying lesions, endometrial hyperplasia, PCOD can be undertaken to medically manage the space occupying lesions of uterine cavity. This case study may help in designing treatment protocol for larger studies.

Acknowledgment: Nil.
Financial Support: Nil.
Conflict of Interest: Nil

REFERENCES

1. Pundir J, El Toukhy T. Uterine cavity assessment prior to IVF. Womens Health (Lond Engl) [Internet] November 2010 [Cited in August 2020];6:841–847. Available from: https://pubmed.ncbi.nlm.nih.gov/21118042/

2. Purohit, P., & Vigneswaran, K. Fibroids and Infertility. Current Obstetric and Gynecology Reports [Internet] April 2016 [Cited in August 2020]; 5:81–88. Available from: https://link.springer.com/article/10.1007/s13669-016-0162-2#citeas

3. Al Chami, A., & Saridogan, E. (2017). Endometrial Polyps and Subfertility. *Journal of obstetrics and gynaecology of India*, *67*(1), 9–14. https://doi.org/10.1007/s13224-016-0929-4

4. Check JH, Bostick-Smith CA, Choe JK, et al. Matched controlled study to evaluate the effect of endometrial polyps on pregnancy and implantation rates following in vitro fertilization-embryo transfer (IVF-ET). Clin Exp Obstet Gynecol 2011; 38(3): 206–208.

5. Salim S, Won H, Nesbitt-Hawes E, et al. Diagnosis and management of endometrial polyps: a critical review of the literature. J Minim Invasive Gynecol 2011; 18(5): 569–581

6.Guo XC, Segars JH. The impact and management of fibroids for fertility: an evidence-based approach. *Obstet Gynecol Clin North Am*.[Internet] Dec 2012 [Cited in August 2020];39(4):521-533. Available from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3608270/

7. Nijkang, N. P., Anderson, L., Markham, R., & Manconi, F. (2019). Endometrial polyps: Pathogenesis, sequelae and treatment. *SAGE open medicine*, *7*, 2050312119848247. https://doi.org/10.1177/2050312119848247

8. Acharya YT, editor. Charaka samhita of Agnivesha, Sharirasthana Atulyagotreeya, Chapter 2, verse 7. Varanasi: Chaukhamba Surbharati Prakashan; 2016. p. 302.

9.Acharya YT, editor. Charaka samhita of Agnivesha, Sutrasthana Vividhashitpeeteeya Adhyaya, Chapter 28, verses 13-14, 25. Varanasi: Chaukhamba Surbharati Prakashan; 2016. p. 180.

10. Acharya YT, editor. Charaka samhita of Agnivesha, Siddhisthana Bastisutreeyam Siddhi Adhyaya, Chapter 3, verses 43-5. Varanasi: Chaukhamba Surbharati Prakashan; 2016. p. 696.

11. Acharya YT, editor. Charaka samhita of Agnivesha, Chikitsasthana Yonivyapat Chikitsa Adhyaya, Chapter 30, verse 38. Varanasi: Chaukhamba Surbharati Prakashan; 2016. p. 636.

12. Acharya YT, editor. Charaka samhita of Agnivesha, Chikitsasthana Yonivyapat Chikitsa

Adhyaya, Chapter 30, verse 47. Varanasi: Chaukhamba Surbharati Prakashan; 2016. p. 637.
13. Vd. Yadav ji Trikamji Acharaya, editor. Sushruta Samhita with Dalhana Acharya commentary, Chikitsa sthana Netrabasti Pramana Pravibhaga Chikitsa, Chap 35, ver. 27-28.Varanasi Chaukhamba Sanskrit sansthan; 2017, p.528
14. Acharya YT, editor. Charaka samhita of Agnivesha, Siddhisthana Kalpana Siddhi Adhyaya, Chapter 1, verses 33-34. Varanasi: Chaukhamba Surbharati Prakashan; 2016. p. 683.
15. Acharya YT, editor. Charaka samhita of Agnivesha, Siddhisthana Panchkarmeeyaam Siddhi Adhyaya, Chapter 2, verses 16. Varanasi: Chaukhamba Surbharati Prakashan; 2016. p. 689.
16. Thatte U, Chiplunkar S, Bhalerao S, Kulkarni A, Ghungralkar R, Panchal F, Vetale S, Teli P, Kumbhar D, Munshi R, Immunological & metabolic responses to a therapeutic course of Basti in obesity. Indian Journal of Medical Research [Internet] 2015, [Cited 2020 August]; 142:53-62.
17. S., Subina & Ck, Prathibha & Pv, Anandraman & Dharmarajan, Prasanth. (2015). Understanding The Mode Of Action Of Bastikarma (Medicated Enema). Anweshana Ayurveda Medical Journal.