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CASE STUDY

# Management of Tubal Blockage with Ayurvedic Approach: A Case Study

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## ABSTRACT

Tubal blockade is a condition in which there are blockage in fallopian tubes occurring in the recurrent tubal infections and inflammatory condition like pelvic inflammatory diseases, endometriosis and so on. Tubal factors contributes about one third to one fourth of the infertility cases. Since, there is no exact simulating disease to compare this condition in *Ayurveda*; according to the features involved in its patho-physiology; involvement of *Tridosha* has been contemplated. Hence, treatment of the tubal blockade is done by regarding the *Dosha* involved. *Uttarvasti* is minimally invasive procedure that could be easily performed as an OPD procedure, more convenient and cheaper way to accentuate the treatment of condition of bilateral tubal blockade. Patient diagnosed with bilateral Tubal blockage was planned for *Ayurvedic* management protocol. It included of *Uttarvasti* with *Kshar Tail* for 3 consecutive months after clearance of menses. Tubal patency of bilateral tubes was established successfully after completion of the treatment protocol.

**Key Words** *Tubal Blockade, Uttar Vasti, Kshar Tail*

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## INTRODUCTION

Tubal factors contributes one third to one fourth of cases of infertility. It includes of tubal pathological conditions like tubal occlusion, adhesions and congenital deformities. This causes hindrance or inhibition of normal ovum transport, tubal motility and transport of fertilised ovum into uterus for normal implantation[1]. Tubal blockade is a condition of either occlusion or obstruction of the Fallopian tube/s (unilateral or bilateral). Obstruction is generally a reversible condition caused due to plugging of amorphous material or due to tubal spasm. While occlusion is due to certain organic pathology that may be irreversible like in Salpingitis Isthmica Nodosa (SIN) [2]. Tubal occlusion may be present in proximal, mid-tubal or distal ends in location, proximal being the most common. Proximal occlusion occurs at the tubal ostium, isthmus or ampulla secondary to tubal resection, luminal obstruction or plugging with mucus or debris. On the other hand, distal tubal obstruction occurs at the level of fimbrial end usually after pelvic infection. All these conditions usually are result of pathological conditions like salpingitis due to pelvic inflammatory disease, tubal endometriosis,

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post-tubal pregnancy, tubal resection, SIN or plugging of debris.

PID: There is generally due to ascending Chlamydial and gonococcal infection commencing from the endosalpinx [3]. There are inflammatory changes with destruction of the epithelial cells, cilia and microvilli. If progresses, there is destruction of the mucosal and muscularis layers. All these inflammatory changes when progress, there is hyper-oedematous condition of the microvilli. Recurrent infection causes the tubal microvilli to adhere and form typical adenomatous spaces [4]. Eventually the entire tubal wall becomes involved, with subsequent blockade occurs.

Endometriosis: It can affect the fallopian tube, resulting in an obstruction with hydrosalpinx formation. The cause of an obstruction is more often compression or stricture than a mucosal adhesion. Chronic inflammation and intraperitoneal bleeding in endometriosis can result in a pelvic adhesion and frank tubal obstruction [5].

In Salpingitis isthmica nodosa, the isthmic portion of the fallopian tube develops a nodular thickening. It also occurs often in the conditions of recurrent tubal infection or inflammatory conditions. Smooth muscle proliferation and diverticula of the tubal epithelium are characteristic of this thickening. As this rare condition progresses, it leads to ultimate tubal occlusion and infertility [5].

Polypoidal lesions: The polypoidal growth at ostial end may also cause obstruction of the proximal tube [5].

In most of the cases the histology of the resected segment of the occluded tube appeared normal. Data on the histology of proximal tubal segment described inflammation in 25%, SIN 25-30% and endometriosis in 10-15% [5].

As explained above, the patho-physiology of tubal blockage comprises of various conditions of recurrent inflammatory conditions or infection or altered hormonal milieu. Regarding the condition, there are no specific diseases to simulate the condition of tubal blockade in *Ayurveda*. *Samkocha* (Stenosis/spasm) of the tubes could verify the involvement of Vata in pathogenesis of tubal blockage [6, 7]. Similarly, tubal endometriosis is a condition of altered *Apana Vayu* where there is *Viparit Gati* (retrograde menstruation)/*Vimarga Gaman* of *Apana Vayu* causing embedding and growth of endometrium in tubes. Similarly, *Paka* (Chlamydial, Gonococcal or Tubercular infections) shows the participation of *Pitta* [8].

Here, inflammation occurring prior to development of tubal blockage ultimately formation of pus can be correlated to *Shopha*. *Shopha* is determined to be due to *Kapha* alteration. These probably substantiate that tubal blockage could be considered as a *Tridoshaja Vyadhi*[8].

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*Uttarvasti* has been indicated in the classics for the treatment of *Yonivyapad*, *Vandhyatva*, *Artavavyapad*, *Vastivikara*, Urinary disorders, *Yonibhramsa* (Uterovaginal prolapsed), *Yonishoola* (Pelvic pain) [9]. *Vayu (Apana vayu)* gets normalized after instillation of *Uttarvasti* such that the female conceive soon after and pregnancy sustains [10]. It is given in the *Ritukaal* (after clearance of menses) after *Shodhan* with 2-3 *Asthapan Vasti*. During *Ritukaal*, the cervical orifice is open such that the medicated *Sneha* or *Kwath* will be easily administered and properly absorbed by the Uterus and pelvic organs[11].

Dosage: *Acharya Charak* [12]: 1 *Prasrita* for the individual with strong Bala. If the patient is of *Hin* or *Madhyam Bala*, Half or less the dosage. *Acharya Sushruta* [13]**:** 1 *Prasrita*: *Vagbhat* [14]: One *Pala* for woman and two *Karsas* for Girl

Acharya *Charak* [15] and *Vagbhat* [16] both have has indicated administration of the *Uttarvasti* drug for 3 consecutive nights in gradual increasing dosage and also indicated that it can be given for another 3 days after 3 days of gap.

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A female patient aged 31 years, with married life of 8 years, presented with the complaints of scanty menses with decreased amount and flow since last 7-8 years and inability to conceive since 8 years. On further enquiry, her menstrual cycle lasted for 1-2 days only, with normal interval of 28-30 days. Bleeding was scanty in quantity; dark brown to reddish color, i.e. she used 1-2 quarter to half soaked pads per day for 1-2 days. There was no any evidence of inter-menstrual bleeding or spotting. It was associated with pain in lower abdomen and back. After marriage, she had been living regularly with her husband, having unprotected intercourse of adequate frequency ever since her marriage but was unable to conceive. She had treatment history for infertility from various hospitals since last few years. She had history of laparoscopic hysteroscopy done 6 months back which revealed bilateral tubal blockage. Endometrial sampling was done alongside hysteroscopy which revealed normal proliferative changes and there was no evidence of Tuberculosis. Hormonal assays done for TSH, LH, FSH, Serum prolactin were all within normal range. Patient was suggested for In-vitro Fertilization (IVF) which patient was not ready to afford and came to institution for second opinion. There was no history of hypertension, diabetes mellitus, thyroid disorders, or any other chronic and infectious diseases. There was also no history of surgical interventions, blood transfusions or organ transplantation. No any history of chronic or infectious diseases among family members.

With all these complaints and medical records, patient presented to the OPD of the hospital. She was advised for Saline Infusion Sonography (SIS) for understanding the tubal patency. It showed no fluid spill on both side and thus confirmed bilateral tubal blockade.

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Ultrasonography showed normal findings otherwise. A treatment protocol was planned for 3 months which included of *Deepan-pachan* for 3 days after 3rd day of menses followed by *Sadhya Virechan*. Then, it was planned for 2 *Asthapan vasti* on 6th and 8th day, *Matra vasti* on 7th day and 3 *Uttarvasti* for 3 consecutive days. The protocol was planned for 3 consecutive months after the clearance of menses. After completion of the protocol, patient was kept under review monthly and repeat of Saline Infusion Sonography was done. The repeat SIS showed bilateral free spillage of the fluid and confirmed no evidence of bilateral tubal blockade.

Menstrual History:

Present and past menstrual pattern of the patient, i.e. before any changes in pattern of menstruation and that during presenting time has been mentioned in table no.1.

**Table 1** Past and Present Menstrual History of Patient when presented in OPD

| | **Past menstrual history** | **Present menstrual history** |
|---|---|---|
| **Duration** | 3-4days | 1-2days |
| **Interval** | 28-30 days | 28-30days |
| **Amount** | 2-3 pads/day (half- full soaked) | 1-2 pads/day (quarter to half soaked) |
| **Pain** | Not present | Not Present |
| **Clots** | Not present | Not present |
| **Smell** | Not present | Not present |

General Examination: No Abnormality Detectable.

General Composition- Lean and thin

General Appearance- normal

BP-100/70 mm of Hg

PR- 80 bpm

RR- 18/min

**Systemic Examination:**

**CNS**- Intact, well oriented to time, place and person.

**CVS**- S1S2M0, no added sounds

**Chest**- Bilateral chest clear, Normal Vesicular Breathing Sound heard

**GIT (Per abdominal examination)**- soft, non-tender, no organomegaly palpable

**Local Examination:**

**Per Speculum Examination:** Cervix- Nulliparous size, regular, no congestion, thin white discharge

**Per Vaginal Examination:** Cervix- Nulliparous size, regular, mobile, no motion tenderness.

Uterus- Normal size, anteverted, mobile, non-tender

B/L fornices- Clear, non-tender

**INVESTIGATIONS:**

TSH- 1.93 uIU/ml

FSH: 8.95mIU/ml (D3)

LH: 8.24 mIU/ml (D3)

Sr. prolactin- 7.38 mIU/ml

FBS= 84 mg/dl

Histopathology of Endometrial Tissue: Normal proliferative changes

CBNAAT: negative

Laparoscopic hysteroscopy: B/L free fluid spillage absent.

Normal findings otherwise

Saline Infusion Sonography (SIS): Uterus: Anteverted, normal size, 4.6 X 3.0 X 2.6 cm

Endometrial Thickness: 6 mm and central

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Bilateral Ovaries: normal size, shape and echotexture.

Both adnexa are normal, no mass/lesion seen. Endometrial canal has been well outlined by the fluid.

No e/o free spill of the fluid is seen on either side.

Impression: Normally outlined endometrial canal. No free spill seen on either side (s/o bilateral tubal blockage)

## MATERIALS AND METHODS

The treatment protocol was planned for 3 consecutive months after clearance of menses which has been illustrated as follows:

- Day 3rd to Day 5th AUM: • *Deepan Pachan-Chitrakadi Vati*[17] 1 Tablet thrice daily with luke warm water
- Day 5th night: • *Sadhya Virechan* with *Haritaki churna* 5gm with lukewarm water
- Day 6th: • *Dashmoola Trivrit Asthapan Vasti*
- Day 7th: • *Anuvasan Vasti* with *Mahanarayan Tail*
- Day 8th: • *Dashmoola Trivrit Asthapan Vasti*
- Day 9th - Day 10th: • *Uttar Vasti* with *Kshar Taila*[18]
- Day 11th: • *Uttar Vasti* with *Phalaghreeta*[19]

General characteristics of *Kshar Tail* (14 Content):

*Guna: Rasa: Katu* (Pungent); *Virya* (potency): *Ushna* (warm); *Vipak* (Quality after digestion): *Katu* (Pungent) *Dosha Karma: KaphaVatashamak, Pitta vardhak* properties: *Lekhan Rogakarma: Karnaroga* (Pain in ear, tinnitus, itching in ear, worm infection)

***Poorva Karma***:

As for *Uttar Basti*, the patient is subjected to the following procedures:

- Light diet in the form of gruels, milk with ghee, etc
- Evacuation of the bladder & bowels
- *Abhyanga*: By *Mahanarayana Taila, Abhyanga* was done for about ten minutes on the Kati Pradesha, Adhodara, Prustha, and Parshva Pradesha.
- *Swedana*: After *Abhyanga, Swedana* was given for about 15 minutes with hot wet towel in the above mentioned region where Abhyanga was done.
- Examination of pulse, blood pressure, general well being was carried out.

*Pradhan Karma:*

- Procedure was done in all possible aseptic conditions inside the operation theatre. Patient was kept in lithotomy position.
- Part preparation was done.
- Aseptic painting of the vulva, perineum, groin and inner aspects of thighs were done followed by draping with aseptic linen towels were done.
- Per vaginal examination and bimanual examination was done for assessment of the uterine size, position or any pelvic growth.

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- Posterior vaginal wall was retracted with Sims double bladed speculum and anterior vaginal wall was retracted by anterior vaginal wall retractor, anterior lip of the cervix was held with Allis forceps.
- Uterine sound was used to assess the length of uterine cavity and position of the Uterus.
- Infant feeding tube/Nasogastric tube no.6, initially connected to the 5 ml syringe filled with lukewarm medicated *Sneha* was gradually inserted to the uterus through the cervical os.
- The medicated oil was gradually administered into the uterine cavity. General well-being of the patient along with the vitals was considered in between the procedure.

*Paschat Karma*

- After administration of the medicated *Sneha*, the instruments were removed and *Pichu* soaked in *Phala Ghreeta* was kept intravaginally at the posterior fornix. *"Sphik Taadan"* was done and patient was allowed to lie in supine position with flexed knees with head on lower level than the lower body for better absorption.
- Patient was kept in the position for next 30-45 minutes.
- Removal of *Pichu* after 20 minutes or before passing of urine

## RESULTS

After completion of the treatment protocol, patient had relief in complaint of scanty menses. She started having menses for 3-4 days with normal flow, 2-3 pads half to fully soaked after completion of treatment protocol for 3 cycles. A repeat saline infusion salpingography was done after 2 months of completion of the treatment protocol which revealed bilateral tubal patency as depicted in Table 2 and Figure 1 and 2.

**Table 2** Result in Investigations (before and after treatment)

| S.No. | Investigations | Before Treatment | After Treatment |
|---|---|---|---|
| **1.** | Saline Infusion Sonosalpingography | Uterus: Anteverted, normal size, 4.6 X 3.0 X 2.6 cm<br>Endometrial Thickness: 6 mm and central<br>Bilateral Ovaries: normal size, shape and echotexture.<br>Both adnexa are normal, no mass/lesion seen.<br>Endometrial canal has been well outlined by the fluid.<br><br>No e/o free spill of the fluid is seen on either side.<br>Impression: Normally outlined endometrial canal.<br>No free spill seen on either side (s/o b/l tubal blockade) | Uterus: Anteverted, normal size<br>Endometrial Thickness: 6 mm and central<br>Ovaries:<br>Bilateral Ovaries: normal size, shape and echotexture<br>Both adnexa are normal, no mass/lesion seen.<br>Endometrial canal has been well outlined by the fluid.<br>Free spill of the fluid was seen bilaterally with gradual accumulation of fluid in cul de sac region.<br><br>IMP: Normally outlined endometrial canal.<br>Free tubal spill seen bilaterally (s/o patent tubes)<br>No evidence of tubal blockade seen in the present study. |
| **2.** | Hormonal Assays | FSH:8.95mIU/ml<br>LH: 8.24mIU/ml<br>Serum Prolactin: 7.38 mIU/ml<br>TSH: 1.93 uIU/ml | |

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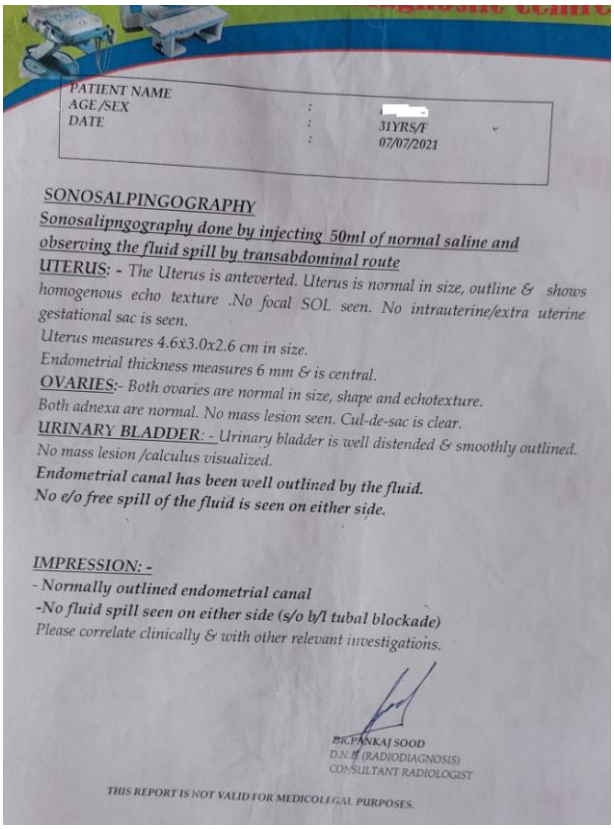

PATIENT NAME :
AGE/SEX : 31YRS/F
DATE : 07/07/2021

SONOSALPINGOGRAPHY

Sonosalipngography done by injecting 50ml of normal saline and observing the fluid spill by transabdominal route

UTERUS: - The Uterus is anteverted. Uterus is normal in size, outline & shows homogenous echo texture .No focal SOL seen. No intrauterine/extra uterine gestational sac is seen.
Uterus measures 4.6x3.0x2.6 cm in size.
Endometrial thickness measures 6 mm & is central.
OVARIES:- Both ovaries are normal in size, shape and echotexture.
Both adnexa are normal. No mass lesion seen. Cul-de-sac is clear.
URINARY BLADDER: - Urinary bladder is well distended & smoothly outlined.
No mass lesion /calculus visualized.
**Endometrial canal has been well outlined by the fluid.**
**No e/o free spill of the fluid is seen on either side.**

IMPRESSION: -
- Normally outlined endometrial canal
-No fluid spill seen on either side (s/o b/l tubal blockade)
Please correlate clinically & with other relevant investigations.

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D.N.B. (RADIODIAGNOSIS)
CONSULTANT RADIOLOGIST

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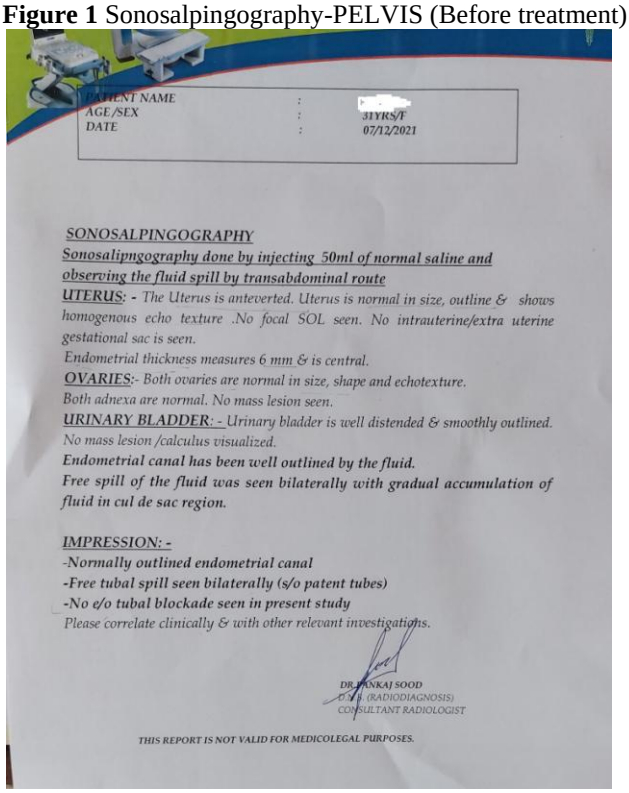
**Figure 1** Sonosalpingography-PELVIS (Before treatment)



PATIENT NAME :
AGE/SEX : 31YRS/F
DATE : 07/12/2021

SONOSALPINGOGRAPHY

Sonosalipngography done by injecting 50ml of normal saline and observing the fluid spill by transabdominal route

UTERUS: - The Uterus is anteverted. Uterus is normal in size, outline & shows homogenous echo texture .No focal SOL seen. No intrauterine/extra uterine gestational sac is seen.
Endometrial thickness measures 6 mm & is central.
OVARIES:- Both ovaries are normal in size, shape and echotexture.
Both adnexa are normal. No mass lesion seen.
URINARY BLADDER: - Urinary bladder is well distended & smoothly outlined.
No mass lesion /calculus visualized.
**Endometrial canal has been well outlined by the fluid.**
**Free spill of the fluid was seen bilaterally with gradual accumulation of fluid in cul de sac region.**

IMPRESSION: -
-Normally outlined endometrial canal
-Free tubal spill seen bilaterally (s/o patent tubes)
-No e/o tubal blockade seen in present study
Please correlate clinically & with other relevant investigations.

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**Figure 2** Sonosalpingography (After treatment)

## DISCUSSION

Tubal blockage is a post pathological manifestation of several conditions like Genital Tuberculosis, Chronic pelvic inflammatory diseases, endometriosis, etc.

Any conditions of recurrent pelvic inflammatory conditions when subside, there is fibrosis and adhesion formation. These healing processes cause development of pathological conditions like Tubal Blockage, Asherman syndrome, etc. These are generally unidentified and discovered accidentally when a couple comes for the consultation of infertility.

*Kshar tail* is pungent in nature, causes *Lekhana* i.e. scraping of the fibrosed tissues and thus causes release of the blockade in tubes. *Kshar Tail* has *Katu Rasa* (Pungent), *Ushna Virya, Katu Vipaka, KaphaVatashamak, Pitta vardhak* action. It has *Lekhana* property and indicated in the *Rogaadhikar* of *Karnaroga* (Pain in ear, tinnitus, itching in ear, worm infection) [18]. *Sodhana, Ropana* along with the *Lekhana, Tridoshaghna* properties of the *Kshar* helps in removal of unwanted fibrosed tissues causing the blockage, healing of the scraped area and replenishment of the area with healthy columnar tissues lining the healthy tubes [20].

*Uttarvasti* of *Phala ghreeta* after the instillation of *Kshar Tail* helps in *Brimhana, Ropana* and also neutralizes the exfoliating action of the *Kshar Tail*, thus preventing excess corrosion of the tubes. It also helps in nourishment of the bilateral ovaries, the endometrium and the epithelium of bilateral tubes for preparing them for healthy conception. *Phala ghreeta* has been

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considered to be *Ayushya* (Rejuvenating), *Paushtik* (nourishing), *Medhya* (Brain tonic), *Pumshavan* (favouring fertility). When it is taken in *Pushpawastha* (Fertile period) will provide the women with *Phala* (Healthy progeny/conception), benefits the women having recurrent abortions or favours normal pregnant woman [19].

*Chitrakadi Vati* given before the procedure helps in ***Deepan-Pachana*** of the patient as the same is indicated before any sort of Samsodhan procedure. Important therapeutic uses of *Chitrakadi Vati* include of *Agnimandya* (Digestive impairment), *Amadosha* (products of impaired digestion and metabolism / consequences of *Ama*), *Grahani* (Malabsorption syndrome) [17]. Hence, its use will help in digestion of the *Saama Dosha* before initiation of *Samsodhan* procedure.

*Deepan-Pachan* is followed by the ***Sadhya Virechan*** by intake of *Haritaki* powder. *Haritaki Churna* has *Mridurechan* action, *Anulomana* effects and considered as supreme drug for *Sroto-sodhan* [21]. Hence, it helps in evacuation of *Kosthasrit Doshas*.

Similarly, it was followed by instillation of *Dashmool Trivrit Asthapan Vasti* and *Anuvasana Vasti* of *Mahanarayan Tail* which helped in *Samsodhan* of the patient. This helps in better absorption and efficacy of the medication that are instilled later on by the *Uttarvasti*.

***Dashmool Trivrit Asthapan Vasti*** [22]*:* Helps in regularizing the *Apana Vayu*, evacuation of vitiated *Vata Dosha* of pelvic region which is considered as the chief stay of *Vata*. This also helps in better absorption of the medicine to be instilled by *Uttar vasti*. The contents of this *Vasti* are *Vata-Pittashamaka*, anti-inflammatory, anti-oxidative in properties.

***Mahanarayan Tail Anuvasana*** [23]: *Mahanarayan tail* is used in external application over the skin as *Abhyanga* but in many classical treatments it is used internally such as *Anuvasana basti*, *janubasti*, *Nasya*. Orally, it has *Vatapitta Shamak* effects. It helps in better absorption of the *Vasti dravya* to be given after *Snehan-swedan*. *Anuvasan Vasti* after instillation of *Niruha vasti* helps in lubrication, smoothening of bodily channels, aids vigour in body, helps in alleviation of *Rukshata, Laghuta, Sheetalta* caused by the vitiated *Vata* [24].

***Sthanik Abhyanga and Svedana***: *Sthanik Abhyanga* helps in *Snehan* that subsequently causes *Vatashaman*, makes body and *Srotras Mridu.* Also the *Doshas* are made *Shithila* and brought to the *Kostha* from *Shakha* and thus evacuated out through *Samsodhan*[25].

***Kshar Tail Uttarvasti***: As mentioned above, *Kshar tail* is *Katu Rasa* (Pungent), *Ushna Virya, Katu Vipaka, KaphaVatashamak, Pitta vardhak*. The components have *Lekhana, Shodhan* and *Ropaka* properties. Thus, it helps in removing the unhealthy tissues causing the obstruction causes

healing with replenishment of the healthy tissue linings of the *Garbhasaya* and *Artavabeeja vaha srotas* (Tubes).

***Phalaghreeta Uttarvasti***: Its components have *Brimhaniya, Ropaka, Prajasthapak* properties, *Madhur Ras, Sheeta veerya.* Hence its instillation will help in neutralizing the corrosive action by the *Kshar tail*, aids in healing with healthy tissues and prepares the *Garbhasaya* for the conception.

Similarly, all sorts of *Vasti Karma* performed is believed to re-establish the natural direction and physiology of *Apana Vayu* which is responsible for the evacuation of *Artava, Beeja* (Ovum), fertilization, Sperm and Ovum transport and conception[26]. Hence, not only the blockades in tubes were cleared through the *Vasti karma* but also the normal functional physiology of reproductive tract and hormonal balance was restored and maintained by the administration of *Vasti-karma*.

## CONCLUSION

Here, the patient all other evaluated showed normal reports except the bilateral tubal blockage of the patient. Hence, the tubal patency was firstly targeted to be established. Conventional management of tubal blockage includes of invasive procedures like tubal cannulation, tubal reconstruction and recanalization of tubes [27] which have high recurrence rates. *Uttarvasti* is minimally invasive procedure that could be easily performed as an OPD procedure, more convenient and cheaper way to accentuate the treatment of condition of bilateral tubal blockade. Here, the tubal patency was established after administration of *Uttarvasti* for the planned duration. Then after, the patient and her partner were counseled about the fertile time period, minimum frequency of sexual intercourse required for the conception and lifestyle modification for planning and achievement of a healthy conception in near future.

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