



Managing endometrial calcifications using *Kshara Taila* and *Phalaghrita Uttara Basti*: A case report

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ABSTRACT

Endometrial calcification is an uncommon clinical entity. They can be detected during pelvic ultrasonography or as incidental pathologic findings. Most of the cases are asymptomatic or present with secondary infertility and menstrual anomalies. Its definite etiology is still not known and the pathogenesis is uncertain; its clinical importance is not yet fully validated. Since there is no exact simulating disease to compare this condition in Ayurveda; according to the features involved in its pathophysiology; involvement of *Tridosha* has been contemplated. Therefore, the management of endometrial calcifications is conducted by considering the specific *Dosha* involved. *Uttara Basti* is a minimally invasive procedure that can be easily performed as an outpatient procedure, offering a more convenient and cost-effective approach to enhance the treatment of endometrial calcifications. Here in this case study, the patient had been diagnosed with endometrial calcifications and was subsequently scheduled for an Ayurvedic management protocol. The procedure of *Uttara Basti* with *Kshara Oil* and *Phala ghrita*, was undertaken for a duration of 3 consecutive months, following the cessation of menstrual flow. The patient experienced improvement in scanty menses, her USG showed a reduction in endometrial calcification. Furthermore, she was conceived.

1. Introduction

The incapacity to achieve pregnancy can present a challenging and vexing ordeal for couples. There are various factors that can contribute to infertility, such as stress, inadequate dietary and physical activity patterns, hormonal irregularities, unhealthy lifestyle practices, and genetic susceptibility [1–3]. Infertility is the inability to get pregnant after one or more years of regular coitus without protection. It can be classified into primary infertility, which means not being able to get pregnant at all, and secondary infertility, which means not being able to get pregnant after a successful conception [4,5]. It is rather prevalent, affecting about 10–15 % of couples who are of reproductive age. Endometrial abnormalities are one of the many factors that might contribute to a woman's inability to have a child. Uterine factors like these play a significant part in the progression of infertility [3,6,7]. The calcification of the endometrium is one of the factors that might lead to secondary infertility. It is most diagnosed in women of reproductive age who complain of symptoms such as dysmenorrhea, pelvic pain, and other similar discomforts. Endometrial calcification can be detected in

patients who have had an excessive intake of calcium or vitamin D or who have metabolic problems [8]. Endometrial calcifications are a common problem that can lead to infertility and multiple abortions [9]. The most common causes of calcific endometritis are post-abortion; after first and second trimester abortions, retained tissues cause chronic inflammation, chronic endometritis due to genital TB, pyometra, and non-specific chronic endometritis, which causes the growth of mesenchymal cells that can change into chondroblasts and osteoblasts [10]. It is still unknown how common endometrial calcifications are in both the general population and in individuals who have had abortions in the past. Burks et al. [11] reported that the calcific endometritis poses a significant concern for women who have undergone uterine instrumentation procedures such as intrauterine device (IUD) insertion and dilatation and curettage (D&C) [8].

Multipotent stromal cells in the uterus have been hypothesised to undergo heteroplasia and give rise to osseous tissue through this mechanism. Patients with endometrial calcifications might experience a wide range of symptoms, from no symptoms at all to secondary infertility. Patients may experience repeated miscarriages, in addition to

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menstrual disorders such as menorrhagia and oligomenorrhea [12]. Therefore, the aim of this study is to analyse the effect of *Uttara Basti*, and *Phala ghrita* in the treatment of endometrial calcification.

2. Patient information

A 31-year-old married multigravida woman presented to PTSR OPD of RGGPG Ayurvedic College and Hospital, Paprola with the complaint of not being able to conceive even after trying for 1 year of unprotected sexual intercourse. She had been receiving hormone therapy from a private hospital for the same complaint, however, the expected outcomes were not achieved. On further enquiry, she also reported irregular menses with a decreased duration over the course of one year. There were no associated symptoms of nausea, vomiting, irritability. There was no evidence of inter-menstrual bleeding or spotting. She did not receive any medical treatment for her complaint of having scanty menses. In addition, she expressed concern regarding white discharge per vaginum, irrespective of period of menstruation. It was not associated with foul smell, pain in lower abdomen and backache. There was no history of dyspareunia. The pap smear examination was conducted and was suggestive of chronic nonspecific vaginitis. The routine lab investigations were found to be within normal limits. Following a thorough medical assessment for secondary infertility, all other possible etiologies were eliminated. Her pelvis USG was done that showed multiple linear and curvilinear foci of calcification involving the endometrium. Largest calcific focus measured 18mm with impression of endometrial calcifications/post curettage/abortion calcific endometritis. The patient presented with a history of chronic vaginitis and calcific endometritis, expressing a desire for conception.

2.1. Past medical history

There was previous surgical history of D&E for spontaneous abortion 1 year back. There was no history of hypertension, diabetes, blood transfusion, chronic infectious diseases.

2.2. Family history

There was no significant medical, surgical and gynecological history in her family members.

2.3. Personal history

Her appetite was good. She used to take mixed diet. She had normal thirst; 9–10 glasses of daily water consumption. Sleep was sound and undisturbed. Tongue was not coated. The patient reported normal micturition habits, with a frequency of 2–3 times per day and occasionally 1–2 times during the night, which they considered to be within the normal range. Bowel habits were of regular pattern, once a day. There was no recorded medical history of either constipation or loose stools. There was no history of any form of addiction.

2.4. Past menstrual history

Age of menarche was 13 years. The menstrual history has been

Table 1
Past menstrual history.

	Past	Present
Duration	3–4 days	1–2 days
Interval	26–30 days	26–30 days
Amount	1–2 pads/ day, fully soaked	1–2 pads/day, half soaked
Pain	NP	NP
Smell	NP	NP
Clots	NP	NP
Associated symptoms	NP	NP

irregular for the past year. Table 1 is showing her past menstrual history.

2.5. Contraceptive history

No contraceptive use was reported by the patient.

2.6. Obstetric history

G₃P₁L₁A₁; G1-female child; 4 years old; normal spontaneous vaginal delivery, G2-one spontaneous abortion at 2 months of gestational age, G3-present pregnancy after getting *Ayurvedic* treatment.

2.7. Past gestational history

Patient got married 10 years back and she conceived 5 years back. Her last child delivered is a female child by normal spontaneous vaginal delivery at hospital. After 4 years of delivery of first child, she conceived again. At two months of gestational age, she experienced a spontaneous abortion and underwent a dilation and evacuation procedure at the hospital.

2.8. Examination & investigations of patient

The systemic, general examination & Investigations of patient presented in Table 2.

The *Ashtavidha Pariksha*, *Dashvidha Pariksha* findings of patients is tabulated in Table 3. Through the utilization of these examinations, we are able to gain a comprehensive understanding of *Ayu* (age), *Bala* (strength), *Dosha* (imbalance), and *Agni Pramana* (power of digestive fire), *Nadi*, *Mala*, *Mutra*, *Shabda*, etc. (pulse, stool, urine, voice examination), consequently facilitating accurate diagnosis and effective treatment measures.

2.9. Treatment planned

The treatment protocol was planned for 3 consecutive months. It included *Deepana Pachana* (appetizer digestives) followed by *Mridu Virechana* and *Uttara Basti* as shown in Table 4, additionally, a 3-month duration of *Shamana Chikitsa* (Palliative care) was also administered orally which encompassed:

- Tab Folic Acid 1 OD; ii) Shatavari Kalpa 1tsf BD with milk; iii) Tab Turmix 1 BD.

Patient also reported white discharge per vaginum for which we prescribed treatment for 2 months before administering *Uttara Basti*. Treatment includes (i) vaginal douche twice a day with *Triphala Kwatha* for consecutive 7 days after clearance of menses. (ii) *Pushyanuga churna* 3 gm BD after meal started as oral medication for 2 months.

2.10. Therapeutic intervention

2.10.1. Poorva Karma (Preparatory treatment)

For *Uttara Basti*, the patient was subjected to the following procedures:

- Light diet in the form of gruels, milk with ghee.
- Evacuation of the bladder & bowels was carried out.
- Abhyanga* (massage) was done with *Mahanarayana Oil*, *Abhyanga* was done until *Samyaka Snigdha Lakshana* (sign and symptoms of proper unction therapy) were visible on the *Kati Pradesha* (lumbar region), *Adhodara* (lower abdomen), *Prustha* (back region), and *Parshva Pradesha* (flanks).
- After *Abhyanga*, *Swedana* (fomentation) was given for about 15 minutes with hot wet towel in the above-mentioned region where *Abhyanga* has been mentioned.

Table 2

Examination & investigations.

S.NO.	General & Systemic examination		Local examination		Haematological & Serological investigation	
1.	General appearance	Normal built	Per speculum	Cervix- normal size, regular, thin white discharge, mild congestion around Os was present	Blood group	O positive
2.	Height	160cm	Per vaginal	Uterus- normal size, anteverted, mobile, non-tender, fornices clear, non-tender	HB gm%	13.0 gm%
3.	Weight	52kg			RBS	120mg/dl
4.	BMI	20kg/m ²			TSB	0.3mg/dl
5.	BP	110/68 mm of Hg			DSB	0.1mg/dl
6.	Pulse Rate	84/min			SGOT	44IU/L
7.	CNS	Past and present memory was intact, well oriented to time, place, and person.			SGPT	38IU/L
8.	CVS	S1 S2 normal, no added sounds			TSH	0.97Uiu/ML
9.	Chest	B/L clear, vesicular breathing			BT	02min15sec
					CT	05min35sec
10.	GIT	Soft, non-tender, no organomegaly			HIV, VDRL, HBsAg	Non-reactive

Table 3

Dashvidha & Ashtavidha Pariksha.

Dashvidha Pariksha (Tenfold of examination)		Ashtavidha Pariksha (Eight Fold Examination)	
Prakriti (constitution)	Kapha-pittaja	Nadi (Pulse examination)	Niyamit (regular), 84bpm
Vikriti (state of disease)	Lakshan nimittaja	Mala (stool examination)	Once a day
Sara (systemic strength)	Madhyama	Mutra (urine examination)	3-4 times a day
Samhanana (compactness)	Madhyama	Jihva (Tongue examination)	Anavritta (uncoated)
Satva (mental status)	Madhyama	Shabda (voice examination)	Spashta (clear)
Satmaya (suitability)	Sarvarasa	Sparsha (skin examination)	Samsheetoshana
Pramana (body proportion)	Madhyama	Druka (Eye examination)	Nirmala (clear)
Ahara shakti (digestive capacity)	Madhyama	Akrti (Physical constitution)	Madhyama (medium)
Vyayama Shakti (power of exercise)	Avara		
Vaya (age)	Yuvawastha		

Table no.4

Basti protocol.

Day	Intervention	Dose
1-3 rd day	Deepana Pachana with Chitrakadi Vati	1-tab TID
4 th Day	Mridu Virechana with Haritaki Churna	6 gm with Luke warm water for 1 day (Vegas obtained 4-5)
5 th Day	Dashmoola Trivrit Asthapana Basti	460ml
6 th Day	Sahacharadi Anuvasana Basti	60ml
7 th Day	Dashmoola Trivrit Asthapana Basti	460ml
8 th , 9 th Day	Kshara Taila Uttara Basti	3ml
10 th Day	Phala ghritha Uttara Basti	5ml

5. Examination of pulse, blood pressure, general wellbeing was carried out.

6. Before the main procedure of Uttara Basti, Vaginal douche with Triphala Kwatha was done.

2.10.2. Pradhan Karma (main procedure)

1. Patient was in lithotomy position.
2. Part preparation was done.

3. Aseptic painting of the vulva, perineum, groin and inner aspects of thighs were done followed by draping with aseptic linen towels.
4. Per-vaginal examination and bimanual examination was done for assessment of the uterine size, position or any pelvic growth.
5. 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.
6. Uterine sound was used to assess the cavity and position of the Uterus.
7. The no. 6 Infant feeding tube/Nasogastric tube was carefully inserted into the uterine cavity through the cervical os. Prior to insertion, a 5ml syringe filled with lukewarm medicated Sneha (oil), was connected to the tube.
8. The medicated oil was gradually administered into the uterine cavity. General wellbeing of the patient along with the vitals was considered in between the procedure.

2.10.3. Pashchata Karma (Aftercare)

1. After administration of the medicated Sneha, the instruments were removed and cotton swab soaked in Phala Ghritha was kept intravaginally at the posterior fornix. Patient was allowed to lie in supine position with flexed knees & head in lower position for better absorption of the inserted Sneha Dravya. Abdominal hot fomentation with hot water bag was preferred.
2. Patient was kept in the position for next 30–45 minutes.
3. Removal of Pichu after 2 hours or before passing of urine was advised.

3. Follow-up and outcome

After successfully following the prescribed treatment protocol for 3 consecutive months, the patient experienced significant relief from reported issue of scanty menses. She observed the occurrence of regular menstrual cycles lasting for a duration of 3–4 days, using 1–2 fully soaked pads. She also had her USG pelvis done, which showed a reduction in endometrial calcifications. Subsequently, after completing a comprehensive treatment regimen of three-months, the patient diligently pursued conception for an additional three months, ultimately achieving a successful pregnancy.

4. Discussion

There has always been involvement of Vata and Artava Dushti (menstrual disorders) in the development of infertility. Therefore, the treatment planned was aimed at relieving Apana vayu vitiation and removing the endometrial calcifications. The given therapy possesses

Madhura, *Tikta rasa*, *Ushna Veerya*, *Madhura vipaka* and *Vata Shamaka* properties. Thus, helps in *samprapti Vighatana* of infertility. *Kshara* oil, which was used in *Uttara Basti*, helps in the clearance of *avarana* (covering) due to its *Lekhana* (scrapping) properties. The *Ushna Veerya* of drugs clear *Srotorodha* (blockage of channels) leading to boosted circulation in *vagina* and uterus resulting in normalized hormonal function and proper menstruation. *Kshara* oil is pungent in nature, causes *Lekhana* i.e., scraping of the calcified endometrial tissues and thus makes healthy endometrium available for hormones to act on normal endometrial receptors. *Kshara* Oil has *Katu Rasa* (Pungent), *Ushna Veerya*, *Katu Vipaka*, alleviates *Kapha* and *Vata*, and possesses *Pitta* provoking action [13,14]. It has *Lekhana* property as indicated in the *Rogaadhikar* of *Kamaroga* (Pain in ear, tinnitus, itching in ear, worm infection). Similarly, *Shodhana* (detoxification), *Ropana* (healing) along with the *Lekhana*, *Tridoshaghna* properties of the *Kshara* it helps in the removal of unwanted calcified tissues causing the unhealthy environment, healing of the scraped area and replenishment of the area with healthy tissues [15]. *Tila Oil* being the base of *Kshara* Oil has anti-inflammatory action due to its *Vranashodhana* (wound cleansing), *Vranapachana karma*, due to its *Vyavayi* (diffusing) and *Sukshama* (minuteness quality) *Guna* it spreads in minute channels. It pacifies *Vata* through its *Snigdha* (unctuous) property [16,18].

The other contents of *Kshara* Oil have *Vata* *kaphaghana*, *Lekhana* property so it scrapes the calcified endometrium. Thus, this oil making it easier to scrap out the calcified endometrium and thereby reduces its size. It is rejuvenated later, as endometrium has capacity to regenerate, and antioxidant and healing properties of various contents also help for the same. Action of *Kshara* Oil *Uttara Basti* on the disorder is on both ways, local as well as systemic. In addition to that, its specific role on uterus and reproductive tract is also mentioned as uterine cleanser. These are the properties indicate towards its antiseptic as well as anti-inflammatory effects [17].

Likewise, *Uttara Basti* of *Phala ghrita* after the instillation of *Kshara* Oil helps in *Brimhana*, *Ropana* and neutralizes the exfoliating action of the *Kshara* Oil, thus preventing excessive scraping. It also helps in nourishment of the bilateral ovaries, the endometrium and the epithelium of bilateral tubes for preparing them for healthy conception. *Phala ghrita* has been considered to be rejuvenating, nourishing, *Medhya* (Brain tonic), and helping fertility. It provides healthy conception and benefits the women having recurrent abortions [19].

Chitrakadi Vati given before the procedure helps in *Deepana-Pachana* of the patient as the same is indicated before any sort of *Shodhana* procedure. *Chitrakadi Vati* has been indicated therapeutically in *Agni-mandya* (Digestive impairment), *Amadosha* (Products of impaired digestion and metabolism/consequences of *Ama*), and *Grahani* (Malabsorption syndrome). Hence, its use will help in digestion of the *Ama* *Dosha* before initiation of *Shodhana* procedure. *Deepana-Pachana* is followed by the clearance of bowels by intake of *Haritaki churna*. *Haritaki churna* is mild purgative and used in regulation of suppressed natural urges and considered as effective drug for clearing micro-channels (*Srotosodhana*). Thus, it helps in extraction of the *Doshas* of *Koshta*. Similarly, it was followed by instillation of *Dashmoola Trivrit Asthapana Basti* and *Anuvasana Basti* of *Sahacharadi Oil* which helped in *Shodhana* of the patient. This helps in better absorption and efficacy of the medication that are instilled later on by the *Uttara Basti*.

5. Ayurveda logic of drug action

5.1. Deepana

Pachana before *Shodhana* procedure helps in strengthening the *Agni* (digestive fire) of the individual and digestion of *Ama*. *Chitrakadi Vati* is given for the purpose of *Deepana-Pachana* from 3rd day of menses for 3 consecutive days, 1 tablet for 3 times for three consecutive days.

5.2. Chitrakadi Vati

Strengthens the *Agni*, i.e., *Deepana* and digestion of *Ama*; *Pachana* before initiating the *Shodhana* and *Shaman Chikitsa*.

5.3. Haritaki churna

It has *Mridurechana* action, *Anulomana* effects and considered as supreme drug for *Srotosodhana*. Hence, it helps in evacuation of vitiated *Doshas*.

5.4. Dashmoola Trivrit Niruha Basti

It 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 *Uttara Basti*. The contents of this *Basti* helped in alleviation of *Vata* and *Pitta*, and were anti-inflammatory, anti-oxidative in properties.

5.5. Sahacharadi Oil Anuvasana Basti

Niruha Basti is a *Lekhana Basti* that is evacuating whereas *Anuvasana Basti* is *Brimhana Basti*. When the channels are cleansed by *Niruha Basti*, *Sneha* proceeds there as water flows in the pipe after the removal of obstruction. This *Anuvasana Basti* helps in the nourishment of the body after the *Lekhana* property of *Niruha Basti*. *Sahacharadi* oil has been indicated in gynaecological disorders [20]. Almost all the drugs of *Sahacharadi* oil are having *Ushna Veerya*, *Teekshna Guna*, *Katu Rasa*, *Katu Vipaka* properties, most of them are having *Artava Janaka*, *Yakrita uttejaka* actions.

5.6. Local massage and fomentation

Local massage helps in *Snehana* that subsequently alleviates *Vata* *Dosha*, makes body and *Srotas* *Mridu*. Also, the *Doshas* are made loose, and brought to the *Koshta* (digestive tract) from extremities and thus evacuated out through *Shodhana*.

5.7. Kshara Oil Uttara Basti

As mentioned above, *Kshara* oil is *Katu Rasa* (Pungent), *Ushna Virya*, *Katu Vipaka*, *Tridoshaghna* mainly alleviates *Kapha* *Vata* *Dosha* and *Sukshama* properties and moreover *Saumya* in nature as mentioned in *Chakradutta*. The components have *Lekhana*, *Shodhana* 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 uterus and thus provides the healthy environment for conception and regulate the normal function of *HPO* axis as hormone work efficiently as can act on endometrial receptors.

5.8. Phalaghrita Uttara Basti

Its components have *Deepana*, *Pachana*, *Vatanulomana*, *Vrishya* (aphrodisiac), *Rasayana* (rejuvenator), *Brihaniya* (nourishing), *Ropaka*, *Prajasthapaka* (maintain fertility) properties, *Madhura Rasa*, *Sheeta veerya*. Hence its administration will help in neutralizing the corrosive action by the *Kshara tail*, aids in healing with healthy tissues and prepares the *Uterus* for the conception. *Phalaghrita* provides tone to the uterine musculature and nourishes the endometrium and regularizes the anabolic and regenerative action. Due to alleviation of *Vata* and *pitta*, and phytoestrogenic or estrogenic property of *Phalaghrita* helps in correction of scanty menses also. Similarly, all sorts of *Basti Karma* performed is believed to re-establish the natural direction and physiology of *Apana Vayu* which is responsible for the transport of sperm and ovum for conception. *Basti karma* not only was helpful in reduction of endometrial calcifications but also in the maintenance of normal

physiology of reproductive tract and restoration of hormonal balance.

5.9. Shamana Chikitsa

Folic acid is a crucial nutrient in the context of fertility due to its ability to facilitate the development and maintenance of viable pregnancies [21]. *Asparagus racemosus*, commonly known as Shatavari, has been a prominent component of Ayurvedic medicine for several centuries. This plant has been found to have potential benefits in treating infertility in women by promoting folliculogenesis and ovulation, preparing the uterus for conception, and reducing the risk of miscarriage [22,23]. The Turmix tablet comprises curcumin and piperine, both of which possess immunomodulatory, anti-inflammatory, and anti-oxidant characteristics. Piperine has been identified as a highly effective bioavailability enhancer for curcumin, and has been observed to exert anti-inflammatory effects on reproductive organs [24].

6. Conclusion

The utilization of *Kshara* oil and *Phala Ghrita* for intrauterine *Uttara Basti* has exhibited efficacy in diminishing the size of endometrial calcification. This renders it a favorable alternative for couples encountering infertility issues. The combined effect of these drugs also improved the menstrual flow. It may also be effective for other factors of female infertility and menstrual disorders. *Uttara Basti* is minimally invasive procedure that could be easily performed as an OPD procedure, more convenient and cheaper way to accentuate the treatment of endometrial calcifications. No significant complication is evident in this study with this procedure.

7. Patient perspective

The patient was delighted with the outcome of *Uttara Basti* therapy. She tried a variety of conventional treatments for her secondary infertility for a very long period without experiencing any real relief. Following the *Uttara Basti*, her endometrial calcification size was reduced, and she conceived without any adverse effects. The aforementioned therapy exhibited a positive impact on her reproductive health and facilitated conception, ultimately leading to her successful attainment of motherhood in a timely manner.

8. Patient consent

Written permission for publication of this case study had been obtained from the patient.

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Authors contributions

Pratibha Mehra: Software, Formal analysis, Investigation, Resources, Data curation, Writing – original draft, Writing – review and editing, Visualization. **Ekta:** Formal analysis, Investigation, Resources, Data curation, Writing – original draft, Writing – review and editing, Visualization. **Dr Seema Shukla:** Conceptualization, Methodology / Study design, Visualization, Supervision, Project administration.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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