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Ayurvedic management of Hydrosalpinx - A Case Series of Three Patients on Non-Surgical Restoration of Tubal Patency

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Introduction: Hydrosalpinx, a fluid-filled blockage of the fallopian tubes, is a major contributor to female infertility accounting for up to one third of tubal factor infertility cases. Conventional management typically involves surgical removal or occlusion of the affected tube prior to assisted reproductive procedures. However, these approaches may not always be accessible, affordable or acceptable to all patients. Ayurveda offers a non-surgical, holistic alternative by addressing Dosha imbalance and Srotodushti. This case series evaluates the effectiveness of Ayurvedic drug management in restoring tubal function and reproductive potential.

Case Presentation: This case series documents three patients aged 29-31 of primary infertility (7-9 years), with radiological evidence (HSG or TVS) of hydrosalpinx were treated with Ayurvedic medication. All had regular menses with no prior conception.

Intervention: The treatment administered for 3-5 months included Ayurvedic formulations for Shamana (palliative treatment), such as Aragvadhadi Kashayam, Punarnava Mandur, Haridrakhand, Chandraprabha Vati, and Kaishor Guggul etc. These herbal remedies were chosen to address the underlying imbalances and support fertility restoration.

Outcome: Over the course of 3 to 5 months, All the patients demonstrated resolution of hydrosalpinx and normalization of the fallopian tubes & patency.

Conclusion: This case series highlights successful non-surgical Ayurvedic management of hydrosalpinx, offering a potential integrative approach to infertility care.

Keywords: Infertility, Hydrosalpinx, Shotha, Kshetra Dushti, Ayurveda, Shaman Aushadh

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Introduction

Hydrosalpinx, a condition marked by the gradual cumulation of serous fluid within the fallopian tubes, is a significant contributor to female infertility.[1] Tubal factor infertility reports approximately 25-35% and hydrosalpinx is found in 10-30% of all patients undergoing in vitro fertilization (IVF).[2] In India, Studies using Hysterosalpingography (HSG) have reported prevalence rate ranging from 4.4% to 9.8% among infertile women.[3] In African regions particularly Nigeria, the prevalence of hydrosalpinx among infertile women has been recorded at 12.4% and 12.6% in two separate studies reflecting a burden linked to untreated inflammatory disease.[4] Hydrosalpinx often occurs as a outcome of prior pelvic infections (PID) or sexually transmitted diseases, or post-surgical adhesions. These affect Fallopian tube ion channels and epithelial transporters, particularly the cystic fibrosis transmembrane conductance regulator (CFTR), leading to increased epithelial secretion and decreased fluid absorption.[5] Clinically, hydrosalpinx is associated with primary/secondary infertility, lower abdominal discomfort, and, in some chronic pelvic pain. Conventional management typically includes mainly surgical intervention (salpingectomy or tubal clipping) especially prior to IVF to enhance reproductive outcomes.[6]

From an Ayurvedic standpoint, these pathological changes can be understood through the lens of Ksetra Vikriti and classified under Tridoshaja Vyadhi. In Ayurveda, Successful conception is said to relay on proper functioning of four essential factors: Ritu (Timing of the ovulation), Kshetra (Healthy reproductive organs), Ambu (Nutritive fluids), and **Beeja** (viable gametes), collectively termed Garbha Sambhav Samagri. Dysfunction in any of these components can result in infertility.[7] In the case of Hydrosalpinx, Vata plays a role in movement and transport within reproductive tract, attributed to its Chala Guna, Pitta contributes to serous fluid accumulation due to its Sara and Drava Guna and Kapha causes obstruction and inflammation (swelling) due to its Sthira, Avarodhaka, and Shophajanaka qualities. Here, Elevated Pitta with Vata and Kapha, by its liquid properties, may lead to (inflammation) and fluid accumulation, resulting in hydrosalpinx.

This provides a foundation for targeted *Ayurvedic* interventions aimed at restoring tubal function and overall fertility. Furthermore, focusing on *Dosha* imbalance and inflammation, this case series explores the *Ayurvedic* management of hydrosalpinx using classical *Ayurvedic* formulations aimed at addressing *Dosha* imbalance, inflammation, and tubal obstruction, providing a non-surgical therapeutic alternative for fertility restoration.

Case Series

Patient Information & Clinical Findings

Case-1:

A 29-year-old woman with a 7-year history of primary infertility presented with complaints of white discharge per vaginum and inability to conceive. Her menstrual cycles were regular, and she had no significant past illness. Clinical examination revealed a healthy, anteverted uterus with no palpable masses. Transvaginal sonography (TVS) showed a right-sided hydrosalpinx with fluid filled dilated fallopian tube.

Case-2:

A 30-year-old woman with primary infertility for 4 years reported with complain of inability to conceive in the last 4 years along with a history of hypothyroidism since 2 yrs and surgical history of right ovarian cystectomy in 2021. Pelvic examination findings were unremarkable. TVS performed in April 2024 revealed a right adnexal tubular cystic lesion consistent with hydrosalpinx.

Case-3:

A 31-year-old woman with 7 years of primary infertility presented with inability to conceive in the last 7 years and a history of anti-tubercular treatment (ATT) for 6 months. Her menstrual cycles were regular and associated with mild lower abdominal discomfort. Hysterosalpingography (HSG) confirmed bilateral hydrosalpinx with partial fimbrial block.

Diagnostic Assessment

Diagnostic assessment included Transvaginal sonography (TVS) in Cases 1 and 2, which showed fluidfilled, dilated fallopian tubes consistent with hydrosalpinx. In Case 3, hysterosalpingography (HSG) was used to evaluate tubal patency, confirming bilateral hydrosalpinx with fimbrial blockage.

These modalities were selected for their high sensitivity and specificity in diagnosing tubal pathology in women with infertility. The therapeutic response in all three cases was assessed through follow-up imaging, either transvaginal sonography (TVS) or hysterosalpingography (HSG) - conducted 3 to 5 months after Ayurvedic treatment. In Case 1, repeat TVS showed complete resolution of the previously dilated right fallopian tube, indicating restoration of normal anatomy. In Case 2, HSG demonstrated bilateral tubal patency, confirming successful clearance of the obstructed tube.

Case 3, which initially presented with bilateral hydrosalpinx and fimbrial block, also showed normalization of tubal structure and patency on follow-up TVS.

These findings collectively suggest a positive therapeutic impact of the Ayurvedic regimen, reflecting not only symptomatic relief but also structural and functional recovery of the fallopian tubes. The radiological improvements observed serve as objective markers of clinical success and support the efficacy of the treatment protocol.

Table 1: Case presentation of all three cases

| Patient profile | Case 1 | Case 2 | Case 3 |
|--------------------|---------------------------------|--|---|
| Age | 29 years | 30 years | 31 years |
| Place | Calcutta, WB | Calcutta, WB | Calcutta, WB |
| 1st visit | 03/03/24 | 01/07/2024 | 09/05/2024 |
| C/O | Unable to conceive x 7 years | Unable to conceive x 4 years | Unable to conceive x 7 years |
| LMP at 1st visit | 18/02/24 | 20/06/2024 | 01/05/2024 |
| Menstrual history | Regular, Normal flow, Painless, | Regular, Normal flow, Painless, clots | Regular, Normal flow, Painful, clots +nt, brownish red color |
| | clots +nt, brownish color | +nt, red color | |
| Married life | 8 years | 6 years | 8 years |
| Obstetrics History | Nil | Nil | Nil |
| Past Medical | ATT taken x 2021 | H/O Hypothyroidism in the last 2 years | ATT taken x 2020 |
| History | (6 Months) | taking 50 µgm thyroxine medicine | (6 Months) |
| Past Surgical | Not significant | Ovarian cystectomy (2021) | Laparoscopy (2023) |
| History | | | |
| Family History | No relevant history | No relevant history | No relevant history |
| Personal History | Appetite - Decreased | Appetite - Decreased | Appetite - Good |
| | Sleep - Sound | Sleep - Sound | Sleep - Sound |
| | Bowel - constipated | Bowel - Constipated | Bowel - Clear |
| | Bladder - Regular | Bladder - Regular | Bladder - Regular |
| Examination | All vitals are normal | All vitals are normal | All vitals are normal |
| Pelvic Examination | Uterus - AVAF | Uterus - AVAF | Uterus - AVAF |
| (Per Vaginum) | Cervix - Firm, Mobile | Cervix - Firm, Mobile | Cervix - Firm, mobile |
| | CMT - Tenderness +nt | CMT - Tenderness + | CMT - Tenderness +nt |
| Per Speculum | White thick Discharge +nt | No discharges | Thick discharges +nt |
| Examination | Vaginal wall- Healthy | Vaginal wall- Healthy | Vaginal wall- Healthy |
| | Cervix- clear, no erosion | Cervix- clear, no erosion | Cervix- Mild erosion +nt |
| Investigation | USG TVS - 08/07/2023 | USG TVS - 26/04/2024 | HSG - 25/08/24 |
| | Bilateral bulky ovaries with | Right adnexa show an elongated cystic | Focal distal dilatation seen involving both fallopian tubes more on |
| | endometriotic cyst. | SOL measuring 33 x 17 mm. | right side.? Bilateral partial fimbrial block due to hydrosalpinx. |
| | An anechoic tubular structure | ? Right sided hydrosalpinx | Laboratory Investigations - 12/06/23 |
| | towards right adnexa. | Laboratory Investigations -27/05/24 | FSH - 4.49 |
| | ? Right sided hydrosalpinx | TSH - 4.50 IU/ml | LH - 5.61 |
| | Laboratory investigations | RBS - 90.5 gm/dl | RBS - 80.5 gm/dl |
| | -08/07/23 | AMH - 2.50 ng/ml | AMH - 1.53 ng/ml |
| | TSH - 3.5 IU/ml | | |
| | AMH - 3.01 ng/ml | | |
| Ayurvedic | Anapatya due to Kshetravikriti | Anapatyadue to Kshetravikriti | Anapatyadue to Kshetravikriti (Chronic Sanga with Shotha) |
| Diagnosis | (Kapha-Pitta predominance) | (Tridoshaja with Kapha dominance) | |

Table 2: Timeline of case events

| Events | Case 1 | Case 2 | Case 3 |
|---------------------|------------|------------|------------|
| First Visit | 03/03/24 | 01/07/24 | 09/05/24 |
| Diagnosis Confirmed | 08/07/23 | 26/04/24 | 25/08/24 |
| Treatment Starts | 03/03/24 | 01/07/24 | 09/05/24 |
| Follow Up Imaging | 08/05/24 | 23/11/24 | 16/12/24 |
| Outcome | Normal TVS | Normal HSG | Normal TVS |

Table 3: Therapeutic Intervention

| Treatment | nt Shaman Aushadh | | Duration |
|--------------------------|-------------------|--|----------|
| schedule | | | |
| Case 1 | 1. | Aragvadhadi Kashayam - 15 ml + 45 ml | 3 Months |
| warm wat | | m water empty stomach | |
| | 2. | Punarnava Mandur - 2-tab BD After food | |
| | 3. | Haridrakhand - 5gm at night with milk | |
| | 4. | Chandraprabha Vati - 2-tab BD after food | |
| | 5. | Kaishor Guggul - 2-tab empty stomach | |
| | 6. | Snec-30 cap - 1 cap daily | |
| Case 2 | 1. | Aragvadhadi Kashayam - 15 ml + 45 ml | 5 Months |
| warm wa | | m water empty stomach | |
| | 2. | Punarnava Mandur - 2tab BD After food | |
| | 3. | Snec-30 cap - 1 cap daily | |
| | 4. | Chandraprabha Vati - 2-tab BD after food | |
| | 5. | Kaishor Guggul - 2-tab empty stomach | |
| | 6. | Tapyadilauha - 1 tab BD after food | |
| Case 3 | 1. | Aragvadhadi Kashayam - 15 ml + 45 ml | 3 Months |
| warm water empty stomach | | m water empty stomach | |
| | 2. | Punarnava Mandur - 2tab BD After food | |
| | 3. | Haridrakhand - 5gm at night with milk | |
| | 4. | Chandraprabha Vati - 2-tab BD after food | |
| | 5. | Kaishor Guggul - 2-tab empty stomach | |

Results

All three patients were regularly monitored through monthly clinical evaluations and follow-up imaging between the third and fifth months of *Ayurvedic* treatment.

Case 1: After three months of oral Ayurvedic therapy, repeat transvaginal sonography (TVS) performed on 08/05/2024 revealed complete resolution of the right-sided hydrosalpinx. The tube appeared normal in size, with no signs of fluid accumulation.

Case 2: Following five months of continuous treatment, a hysterosalpingography (HSG) conducted on 23/11/2024 demonstrated bilateral tubal patency with free spill of contrast. No signs of hydrosalpinx or peritubal adhesions were observed.

Case 3: At the end of three months of therapy, repeat TVS on 16/12/2024 showed complete resolution of bilateral hydrosalpinx.

The fimbrial ends were open and no fluid retention was detected.

Case 1

Before Treatment

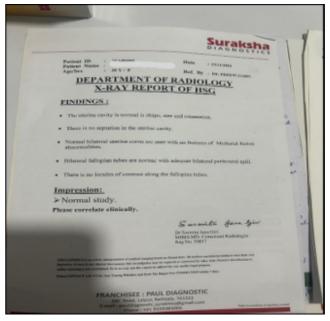


TVS 26/04/2024

Right adnexa show an elongated cystic SOL measuring 33 x 17 mm.

? Right sided hydrosalpinx

After Treatment



HSG 23/11/2024

Both tubes appear normal and adequate bilateral peritoneal spillage. (No hydrosalpinx)

Case 2 Before Treatment



TVS 08/07/2023 - ? Right sided hydrosalpinx.

After Treatment



TVS 08/05/2024 - Both tubes appear normal. (No hydrosalpinx)

Case 3

Before Treatment



HSG 25/08/24 - ? Bilateral partial fimbrial block due to hydrosalpinx

After Treatment



TVS 16/12/24 - Both tubes appear normal and patent tubes

Follow-Up and Outcomes

In all three cases, patients reported subjective improvements in general well-being, menstrual discomfort, relief in white discharge and absence of pelvic discomfort. Although no one had conceived at the time of last follow-up, the resolution of tubal pathology established a favorable prognosis for future fertility. These outcomes affirm the potential of Ayurvedic intervention in addressing structural tubal defects such as hydrosalpinx without recourse to surgical methods.

Discussion

Hydrosalpinx remains a significant contributor to female infertility, often necessitating surgical intervention such as salpingectomy or tubal clipping, particularly prior to assisted reproductive technologies like IVF. While these procedures aim to optimize fertility outcomes, they are not without risks—tubal removal eliminates natural conception potential, and invasive surgery may not be suitable for all patients. Considering these limitations, an Ayurvedic perspective offers a holistic, nonsurgical alternative grounded in fundamental principles of Shotha management. Hydrosalpinx may be considered as manifestation of Kshetra Vikriti, a derangement of the reproductive field, and typically interpreted as a *Tridoshaja Vyadhi*. The functional harmony of Vata, Pitta, and Kapha is essential for maintaining tubal integrity and reproductive vitality. In this condition, Vata (via Chala Guna) disturbs the flow of contents through the fallopian tube, Pitta (via Drava and Sara Guna) promotes inflammation and fluid accumulation, while Kapha (via Sheeta, Avarodhaka, and Shophajanaka Gunas) causes obstruction and swelling resulting in Sanga (obstacle) in the fallopian tubes. All Shotha are mainly due to Tridosha vitiation and Raktadushti. Therefore, the treatment should aim to balance the three doshas (Tridosha-Shamaka), clear the channels (Sroto-Shodhana), promote absorption (Shoshana), blood purification (Raktashodhaka) and reduce inflammation (Shotha-Hara).

The Ayurvedic management in this case series focused on correcting these imbalances through well-established Shamana Chikitsa, emphasizing Agnideepana, Aamapachana. Shothahara, Srotoshodhana and Tridoshshamaka properties as shown in Table no. 6. These drugs possess Katu, Tikta and Katu Vipaka, Ruksha, Kashaya Rasa, Ushna Virya, and Laghu Guna and Tridoshaman properties by virtue of which aid in the digestion of Ama and enhance Agni. This process helps to alleviate Strotorodh, acting as both Deepanpachan and Aampachan.

Each formulation in the treatment protocol was selected based on its classical pharmacodynamics. Aragvadhadi Kashayam and Kaishor Guggulu are recognized for their anti-inflammatory Srotoshodhaka actions, Punarnava Mandur supports regulation and alleviates Kleda Shotha, while Chandraprabha Vati is a potent Kapha-Pittahara and Mutravaha Srotas cleanser. Haridrakhand and curcumin (Snec-30) further augmented the anti-inflammatory effects lowering histamine levels and possibly by increasing the production of natural cortisone by the adrenal glands. A separate double-blind clinical trial found that curcumin was superior to placebo or phenylbutazone (a non-steroidal anti-inflammatory for alleviating [NSAID]) post-surgical inflammation.[8] This holistic combination, administered consistently over 3-5 months, led to complete radiological resolution of hydrosalpinx in all three patients, without resorting to surgical intervention. These findings are in alignment with emerging clinical case reports as Kumari R et.al. 2022 reported complete tubal clearance in a woman with bilateral hydrosalpinx following an Ayurvedic protocol involving Triphala Guggulu and Godanti Bhasma. Similarly, Kale A et.al. 2021 case report using Saptasara Kashaya achieved normalization within 12 weeks.[9] While most existing reports are limited to single cases, the present series enhances the evidence base by demonstrating consistent outcomes across three different patients with varying clinical presentations.

Importantly, the present case series showcases a purely oral, non-invasive protocol making it more accessible in outpatient settings with favorable outcomes in all three cases suggesting that selected Shamana therapies may offer a promising non-surgical alternative for managing hydrosalpinx. However, this series is not without limitations. A longer follow-up period is necessary to assess conception outcomes. Additionally, imaging modalities such as laparoscopy, though more definitive, were not employed due to practical constraints.

Table 6: Mode of action drugs

| | | - | | |
|----|--------------|--|---|--|
| SN | Name of | Ingredients | Properties | |
| | preparation | | | |
| 1. | Aragvadhadi | Aragwadha, Indrayava, Patala, Kakatika, Nimba, Amruta, Shigru, | Kaphashamak, Lekhaniya-Guna,[11] Dushtvrinavishodhnam, | |
| | Kashayam[10] | Sruvavriksha, Pata, Bhunimba Sarireyaka, Patola, Karanja Pootikaranja, | Visha-Hara, Kushthhar, anti-bacterial, anti- microbial, anti- | |
| | | Saptachada, Agni, Karavella, Charantia, Madanphala | parasitic, and anti-inflammatory | |

| 2. | Punarnava | Punarnava, Trivrit, Triphala, | Krimihara, Amahara, Deepana, Pachana, Kustha-hara, Sroto- |
|----|---------------|--|--|
| | Mandur[12] | Dantiroot, Sonth, Kali Mirch, Pipali, Vaividang, Devdaru, Chitrakroot, Kushta, | Shodhan, Anti-inflammatory[13] |
| | | Haldi, Chavya, Indrayava, Kutki, Piplamoola, Mustak, Karkatasinghi, Kala | |
| | | Jeera, Ajwain, Jaiphala | |
| 3. | Chandraprabha | Shilajatu, Guggulu, Amalaki, Vacha, Amruta, Karpoor, Ativisha, Haridra, | Eradicate Kleda, remove Srotorodha, Deepana, Pachana, |
| | Vati[14] | Triphala, Guduchi, Chitrak, Swarnamakshika Bhasma, Trikatu Lavan, Kshar, | Amadosahara, Raktaprasadana, Lekhaniya, MedognaKapha- |
| | | Vankshalochana, Trivrit | Vatahara, dominant Vipaka is Katu-Vipakawhich helps in |
| | | | reducing the Kleda, Aama and Sanga, Rasayan,[15] Anti- |
| | | | inflammatory |
| 4. | Haridrakhand | Haridra, Nishoth, Nagarmotha, Ajwain, Haritaki, Daruhaldi, Chitrakmool, | Krumi, Shitapitta, Vidradhi, Ajeerna, Kamala, Shotha-Hara, |
| | [16] | Goghritam, Sarkara | Anti-allergic, Antihistaminic, Anti-inflammatory, Antioxidant, |
| | | | Antipruritic |
| 5. | Kaishor | Gokshuru, Amruta, Guduchi, Tryushana, Vidanga, Danti, Trivrit, Ghrita | Shothahara (oedema) Mandag,[18] Gulmahara, |
| | Guggul[17] | Trikatu, Triphala, Shudhaguggul | Vataraktashamak, Vrana-Ropak, Shavyathushamak (Anti- |
| | | | Inflammatory), Rasayana |
| 6. | Tapyadi | Triphala, Trikatu, Chitraka, Vidanga, Musta, Pimpalmula, Devdaru, Daruhalad, | Rasayan, Dipaka, Pachana, Krumighna, Raktavardhaka, |
| | Lauha[19] | Twaka, Chavaka, Shilajit Bhasma, Suvarnamakshik Bhasma, Raupya Bhasma, | Anulomaka, Kapha-Vatahara, |
| | | Loha Bhasma, Mandur Bhasma, Sharkara | |
| 7. | Snec-30 | 30 mg of active curcumin | Anti-Inflammatory, Anti-Ageing, Anti-Cancer, Antioxidant, |
| | cap[20] | | Wound Healing, |

Conclusion

This case series highlights the potential of *Ayurveda* interventions as a non-surgical and fertility preserving approach to managing hydrosalpinx. The outcomes underscore Ayurveda's holistic ability to address *Kshetra Vikriti* through *Dosha* specific, anti-inflammatory and *Strotoshodhaka* treatments. Future research should include larger cohort studies, randomized controlled trials (RCTs), and comparative studies with standard surgical interventions to assess efficacy, safety, and long-term fertility outcomes.

Additionally, integrating *Ayurvedic* interventions into fertility treatment protocols including pre- or post-IVF care could be explored to assess synergistic effects.

Informed Consent

Informed consent was obtained from all the patients for the publication of this case series and any accompanying images.

Ethical Consideration

This case series is exempt from ethics committee approval as it involves retrospective clinical observation and outcome.

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