



## Case Study

### A CASE REPORT ON THE MANAGEMENT OF RESIDUAL CALCULI AFTER CHOLECYSTECTOMY THROUGH AYURVEDA THERAPEUTIC APPROACHES

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#### ABSTRACT

Cholecystectomy, the surgical removal of the gallbladder, is a commonly performed procedure worldwide, primarily indicated for symptomatic cholelithiasis and cholecystitis. While the procedure effectively eliminates the gallbladder as a source of stones, it does not eliminate the risk of calculi entirely. Residual calculi can occur after cholecystectomy, although it is relatively rare. If these calculi are identified within two years postoperatively, they are typically classified as residual; if discovered later, they may be termed as recurrent. A 50-year-old female patient with a history of chronic cholecystitis who underwent laparoscopic cholecystectomy four and a half years prior had experienced abdominal pain, which progressively worsened with each passing day and was associated with fever and nausea. She consulted the outpatient department at the Government Ayurveda Medical College, Thiruvananthapuram. The USG abdomen scan revealed multiple internal calculi in a gallbladder-like structure (Gall bladder stump) as a surgical remnant. She was treated with internal medications. She continued the medicines for two years with follow-ups every month, and the stones are completely gone after the due course of treatment. This management approach reveals that Ayurveda can provide promising and effective remedies in the management of residual calculi after cholecystectomy.

## INTRODUCTION

Gallstones with Cholecystitis are categorized under ICD-11: DC11.5. These stones are solidified formations of digestive fluids in the gallbladder, typically resulting from chemical imbalances involving excessive cholesterol or bilirubin. Cholecystitis (ICD11:DC12.0) is the inflammation of the gallbladder wall that usually follows obstruction of the cystic duct by a stone. The worldwide incidence of acute cholecystitis is approximately 6,300 per 100,000 in individuals under 50 years old and 20,900 per 100,000 in individuals over 50 years old. Although not all occurrences of cholecystitis are related to cholelithiasis, more than 90% of patients with acute cholecystitis have gallstones. Laparoscopic cholecystectomy is currently the preferred treatment for symptomatic cholecystitis.

However, some patients may continue to experience symptoms such as upper abdominal pain, indigestion (with or without jaundice), even after the surgery. In a small number of cases, post-cholecystectomy syndrome may be caused by a retained stone in an unusually long cystic duct or by the recurrence of stones in a remaining portion of the gallbladder. Incomplete removal of the gallbladder is considered rare in traditional open cholecystectomy. However, in the era of laparoscopic surgery, while exact figures are unclear, the rate of unintentional incomplete gallbladder excision appears to be slightly higher compared to open procedures. Studies have shown that incomplete resection can occur in up to 13.3% of laparoscopic cholecystectomies. Contributing factors include limited visibility of the gallbladder bed during the operation, the presence of adhesions, active inflammation, significant bleeding, or anatomical variations such as congenital gallbladder duplication or an hourglass shape caused by adenomyomas. The most frequently observed symptoms were abdominal pain, fever, and jaundice. Less common clinical manifestations included pseudocysts, vomiting, chills, liver abscess, and pancreatitis<sup>[1]</sup>.

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If these calculi are identified within two years postoperatively, they are typically classified as residual; if discovered later, they may be termed as recurrent. The initial diagnosis is primarily made using ultrasound or computed tomography (CT) scans. Further identification of the stones and detailed visualization of the biliary tract were achieved through magnetic resonance imaging/magnetic resonance cholangiopancreatography (MRCP) and endoscopic retrograde cholangiopancreatography (ERCP). In some cases, diagnostic methods include endoscopic ultrasound (EUS), laparoscopic ultrasound, intraoperative cholangiography, and percutaneous transhepatic cholangiography.

The management of residual calculi involves laparoscopic procedures, endoscopic techniques, and open surgery. Laparoscopic approaches may include excision of the remnant cystic duct stump, completion of cholecystectomy, and drainage of any associated pseudocyst. Endoscopic treatments comprise stone extraction, endoscopic papillotomy, extracorporeal shock wave lithotripsy (ESWL), laser lithotripsy, and cholangioscopy-guided lithotripsy<sup>[2]</sup>.

In Ayurveda, the condition of gallbladder stones can be correlated with '*Pittasaya Asmari*' (though it is not mentioned as such in the classical Ayurvedic texts), as the gallbladder is *Pittasthana*. The general line of treatment for *Asmari* begins with *Samana Chikitsa*; if the condition does not subside, surgical management (*Asmari Aharana*) is advised. Acharya Susruta said that before going for surgical procedures, one should try with oral medications like *Ghrita* (Medicated ghee), *Taila* (Medicated oil), *Paneeeya Kshara* (medicated alkali preparation), *Kwatha* or *Kashaya* (concentrated decoction), etc., which possess properties like *Mutrala* (diuretic), *Vikasi* (anti-spasmodic), *Ashmarighna* (lithotriptic), *Shothaghna* (anti-inflammatory) for facilitating the disintegration of the stones<sup>[3]</sup>.

Diagnosing and treating retained stones can be complex, with the majority of affected patients ultimately requiring surgical intervention. Here, Ayurvedic management approaches have been described in the literature, and this case report aims to present the Ayurvedic management of a 50-year-old patient diagnosed with multiple residual internal calculi in the gallbladder stump, with a history of chronic cholecystitis.

## MATERIALS AND METHODS

### Patient Information

A 50-year-old female patient presented to Rasasastra and Bhaishajya Kalpana Out Patient Department at the Government Ayurveda Medical College, Thiruvananthapuram, in January 2023, with complaints of moderate colicky type of pain on the right side of the abdomen along with nausea and fever.

A USG abdominal scan (on 11/02/2023) revealed the presence of multiple internal calculi in the gall bladder fossa, with the largest stone measuring 9.5mm. The patient was non-diabetic and non-hypertensive with a history of hypothyroidism for the past 16 years and dyslipidemia for the past 3 years. She did not have any dependency on tea, alcohol, smoking, or tobacco in any form.

According to the patient, in November 2020, approximately four and a half years before the OPD visit, she experienced severe colicky pain on the right side of her abdomen, which progressively worsened over time and was accompanied by fever and nausea. She consulted a gastroenterologist at a nearby hospital, who advised an abdominal ultrasound scan. The scan revealed multiple gallstones in the gallbladder, and she was diagnosed with chronic cholecystitis. Additional blood tests showed leukocytosis, elevated serum bilirubin, and abnormal ALP levels. She was also recommended for histopathological examination of the gallbladder. The histopathological report identified that the changes in the tissue are consistent with chronic cholecystitis. Then the patient underwent laparoscopic cholecystectomy surgery in November 2020 and was advised on diet and medications. Two years and two months after the surgical intervention, she experienced persistent symptoms such as moderate colicky-type pain on the right side of the abdomen along with nausea and fever. Given the recurring nature of the condition, the patient sought Ayurvedic treatment, hoping for a holistic approach to manage symptoms, prevent recurrence, and improve her quality of life, particularly concerning the abdominal pain.

### Clinical findings

On clinical examination of the abdomen, the abdomen is found to be distended and elicited grade 2 rebound tenderness in the right upper quadrant of the abdomen (right hypochondrium) and in the epigastrium. Deep inspiration, cough, and sharp pain were noticed during subcostal palpation of the right upper quadrant of the abdomen, associated with inspiratory arrest for a short while (Murphy's sign). She is also feeling frequent radiation of pain to the interscapular area, right scapula, and right shoulder. She is also having nausea frequently accompanied by biliary pain. She is also having a feeling of fullness (epigastric fullness) and intolerance to fatty foods.

The patient was of moderate build, weighing 80kg, pulse rate was 68 beats/min, blood pressure was 110/82 mm Hg, and body temperature was 98.2°F.

### Ashtavidha pariksha (eight-fold examination of the patient)

On examination, the *Nadi* (examination of pulse) of the patient was *Kapha-pitta* dominant. On further interrogation, there were *Mutrakrichhra*

(dysuria) and *Malabaddhata* (constipation). *Jihwa* (tongue) was coated, and *Shabda* (hearing) is *Prakrita* (normal), *Sparsa* is *Anushnaseeta*, *Drik* (vision) was *Avila* (morbid), *Aakriti* (body stature) is *Madhyama* (moderate).

#### **Dashavidha pariksha (ten-fold examination of the patient)**

Her *Sharirika prakriti* (somatic constitution) was *Kapha-Pitta*, *Manasa prakriti* (mental constitution) was *Rajah-tamasa*, both *Athura* and *Roga* are of *Madhyama bala*, *Sara* (excellence of tissue element) was *Meda sara*, *Samhanana* (compactness of tissue or organ), and *Pramana* (anthropometry), *Satva* (psyche)

#### **Time line**

were *Madhyama* (moderate). The *Satmya* (homologation) was *Katu*, *Amla*, *Lavana rasa* predominant, *Vaya* (age) was *Madhyamavastha* (middle age). *Ahara shakti* (power of intake and digestion of food): *Abhyavaharana* (power of ingestion), and *Jarana shakti* (power of digestion) were found to be *Madhyama*. *Vyayama Sakthi* is also in a *Madhyama* state.

#### **Therapeutic intervention**

The patient underwent a systematic treatment approach, adhering to the *Samprapthi* of the disease. The medicines given in the current case are provided in Table 1.

**Table 1: Detailed timeline of events and therapeutic interventions.**

Time frame	Events, observation, and therapeutic intervention.
November 4 2020	The patient experienced severe colicky pain on the right side of her abdomen, which progressively worsened over time and was accompanied by fever and nausea. She consulted a gastroenterologist at a nearby hospital, who advised an abdominal ultrasound scan. The scan revealed multiple gallstones in the gallbladder, and she was diagnosed with chronic cholecystitis. Additional blood tests showed leukocytosis, elevated serum bilirubin, and abnormal ALP levels. The histopathological study of the gall bladder is consistent with chronic cholecystitis.
November 29 2020	The patient underwent laparoscopic cholecystectomy surgery and was advised on diet and medications.
January 3 2023	She experienced persistent symptoms such as moderate colicky-type pain on the right side of the abdomen, associated with fever and nausea. She consulted at Rasasastra and Bhaishajyakalpna Outpatient Department at Government Ayurveda Medical College, Thiruvananthapuram. She was on internal medications for two years, with a follow-up every month.
<b>Internal Medications given</b>	
January 3 to February 11	<ol style="list-style-type: none"> <li>1. <i>Varanadi Kwatha</i> (48 ml): morning daily before food.</li> <li>2. <i>Trayantyadi Kwatha</i> (48 ml): evening, daily before food.</li> <li>3. <i>Kanchanara guggulu</i> (250mg): orally twice a day with <i>Kwatha</i> before food. (1-0-1).</li> <li>4. <i>Kokilaksha Kwatha Choorna</i>: As <i>Paneeya</i> (as drinking water frequently).</li> <li>5. <i>Pithorin tablet*</i> (Imis Pharmaceuticals): orally thrice a day after a meal with lukewarm water. (1-1-1).</li> <li>6. <i>Smashit tablet*</i> (Gufic): Orally twice a day (morning and evening) after a meal with lukewarm water. (1-0-1).</li> <li>7. <i>Trikatu tablet*</i> (Himalaya): Orally twice a day (noon and evening) after the meal with lukewarm water. (0-1-1).</li> </ol>
February 11 2024	A USG abdominal scan revealed the presence of multiple internal calculi in the gall bladder fossa, with the largest stone measuring 9.5mm.
February 12 to March 19	<ol style="list-style-type: none"> <li>1. <i>Varanadi Kwatha</i> (48 ml): morning daily before food.</li> <li>2. <i>Trayantyadi Kwatha</i> (48 ml): evening daily before food.</li> <li>3. <i>Kanchanara guggulu</i> (250mg): orally twice a day with <i>Kwatha</i> before food. (1-0-1).</li> <li>4. <i>Kokilaksha Kwatha Choorna</i>: As <i>Paneeya</i> (as drinking water frequently).</li> <li>5. <i>Pithorin tablet*</i> (Imis Pharmaceuticals): orally thrice a day after a meal with lukewarm water. (1-1-1).</li> <li>6. <i>Stone GO tablet*</i> (<i>Dindayal Aushadhi</i>): Orally twice a day (morning and evening) after a meal with lukewarm water. (1-0-1).</li> <li>7. <i>Trikatu tablet*</i> (Himalaya): orally twice a day (noon and evening) after a meal with</li> </ol>



	lukewarm water. (0-1-1).
March 20 to May 1	<ol style="list-style-type: none"> <li>1. <i>Trayantyadi Kwatha</i> (48ml): Evening daily before food.</li> <li>2. <i>Patola Katurohinyadi Kwatha</i> (48ml): Evening daily before food.</li> <li>3. <i>Triphala guggulu</i> (250mg): Orally twice a day before a meal with <i>Kwatha</i>. (1-0-1).</li> <li>4. <i>Kokilaksha Kwatha Choorna</i>: As <i>Paneeeya</i> (drinking water) frequently.</li> <li>5. Pithorin tablet*(Imis Pharmaceuticals): Orally thrice a day after a meal with lukewarm water. (1-1-1).</li> <li>6. <i>Trikatu</i> tablet* (Himalaya): Orally twice a day (noon and evening) after a meal with lukewarm water. (0-1-1).</li> </ol>
May 2 to June 8	<ol style="list-style-type: none"> <li>1. <i>Varanadi Kwatha</i> (48 ml): Morning daily before food.</li> <li>2. <i>Veeratarvadi Kwatha</i> (48 ml): Evening daily before food.</li> <li>3. <i>Kanchanara guggulu</i> (250mg): Orally twice a day before a meal with <i>Kwatha</i> (1-0-1).</li> </ol>
June 9 to July 8	<ol style="list-style-type: none"> <li>1. <i>Varanadi Kwatha</i> (48 ml): Morning daily before food.</li> <li>2. <i>Kaidaryadi Kwatha</i>(48ml): Evening daily before food.</li> <li>3. <i>Gokshuradi guggulu</i> (250mg): Orally twice a day before a meal with <i>Kwatha</i> (1-0-1).</li> <li>4. <i>Pithorin tablet</i>*(Imis Pharmaceuticals) Orally thrice a day after a meal with lukewarm water (1-1-1).</li> <li>5. <i>Smashit tablet</i>*(Gufic): Orally twice a day (morning and evening) after the meal with lukewarm water (1-0-1).</li> <li>6. <i>Kanmadabhasmam capsule</i>*(Arya vaidyasala Kottakkal): One capsule twice daily, morning and evening before food with <i>Kwatha</i>.</li> </ol>
July 9 to August 13	<ol style="list-style-type: none"> <li>1. <i>Varanadi Kwatha</i> (48ml): morning daily before food.</li> <li>2. <i>Veeratarvadi Kwatha</i> (48ml): evening daily before food.</li> <li>3. <i>Gokshuradi guggulu</i> (250mg): orally twice a day before a meal with <i>kwatha</i>(1-0-1).</li> <li>4. Pithorin tablet*(IMIS Pharmaceuticals) Orally thrice a day after a meal with lukewarm water (1-1-1).</li> <li>5. <i>Trikatu</i> tablet* (Himalaya): orally twice a day (noon and evening) after a meal with lukewarm water (0-1-1).</li> </ol>
August 14 to October 4	<ol style="list-style-type: none"> <li>1. <i>Varanadi Kwatha</i> (48 ml): morning daily before food.</li> <li>2. <i>Trayantyadi Kwatha</i>(48ml): evening daily before food.</li> <li>3. <i>Gokshuradi guggulu</i> (250mg): orally twice a day before a meal with <i>Kwatha</i>(1-0-1).</li> <li>4. Pithorin tablet*(IMIS Pharmaceuticals) Orally thrice a day after a meal with lukewarm water (1-1-1).</li> <li>5. <i>Smashit tablet</i>*(Gufic): Orally twice a day (morning and evening) after the meal with lukewarm water (1-0-1).</li> </ol>
October 5 to November 20	<ol style="list-style-type: none"> <li>1. <i>Trayantyadi Kwatha</i> (48ml): evening daily before food.</li> <li>2. <i>Chandraprabha gutika</i> (250mg): orally twice a day before a meal with <i>Kwatha</i> (1-0-1).</li> <li>3. <i>Gokshuradi guggulu</i> (250mg): orally twice a day before a meal with <i>Kwatha</i> (1-0-1).</li> <li>4. Pithorin tablet*(IMIS Pharmaceuticals): orally thrice a day after a meal with lukewarm water (1-1-1).</li> <li>5. <i>Stone Go tablet</i>* (Dindayal Aushadhi): orally twice a day (morning and evening) after a meal with lukewarm water (1-0-1).</li> </ol>
November 21 to December 4	<ol style="list-style-type: none"> <li>1. <i>Varanadi Kwatha</i> (48 ml): morning daily before food.</li> <li>2. <i>Guggulu tiktaka Kwatha</i> (48 ml): evening daily before food.</li> <li>3. <i>Madhusnuhi rasayana</i>: 10 gm with hot water at bedtime.</li> <li>4. <i>Guggulu panchapalam Choorna</i>: 6 gm with <i>Kwatha</i> in the morning and evening before food.</li> <li>5. Pithorin tablet*(Imis Pharmaceuticals): Orally thrice a day after a meal with lukewarm water (1-1-1).</li> </ol>
5 <sup>th</sup> December 2024	On CT abdominal scan, all the gall bladder stones are completely gone, and she got complete relief from all the symptoms.
<i>Pathya</i> and <i>Apathya</i>	<i>Pathya</i> : Fibre-rich foods, beans, citrus fruits, leafy vegetables.

*Apathya: Katu-Amla-lavana rasa pradhana Ahara*, tea, coffee, meat pies, unhealthy fats, fried foods, desserts, cake, saussages, untimely intake of foods.

\*Proprietary medicines

## Diagnostic Assessment

The patient was previously diagnosed with Chronic cholecystitis, followed by laparoscopic cholecystectomy on November 29, 2020. As the symptoms recurred after two years and two months, a further USG abdominal scan was done on February 11, 2023, to assess post-laparoscopic cholecystectomy status. It was found that a gall bladder-like structure measuring 2.1\*1.5cm was likely a dilated cystic duct stump/gall bladder remnant with multiple internal calculi, with the largest measuring 9.5mm. However, the liver function test revealed serum bilirubin level of 3.8mg/dl, ALP level of 125mg/dl, and leukocyte count 14000 cells/cumm, which led to the diagnosis of residual internal calculi after cholecystectomy.

## OBSERVATIONS AND RESULTS

USG Abdomen (11/02/2023) during the initial stage of Ayurvedic treatment revealed the presence of multiple internal calculi in the gall bladder fossa, with the largest stone measuring 9.5mm. The patient was advised to follow the drug and diet regimen strictly. The condition of the patient was monitored every 30 days. After 30 days of treatment, there was considerable relief in abdominal pain. USG Abdomen after 46 days revealed that the size of the largest internal calculi reduced to 7.1mm.

She continued the medicines thereafter and came for follow-up each month. After two years of treatment, a CT scan of the Abdomen and pelvis, which was taken on December 5, 2024, revealed that the residual calculi are completely gone, a small fluid density area measuring 10 x 7mm noted in the gall bladder fossa. - GB stump and no radio- opaque densities noted within.

## DISCUSSION

Still, there is a chance for residual calculus after cholecystectomy, although the condition differs slightly. This may occur due to factors such as bile stasis, incomplete removal of the gallbladder (as in subtotal cholecystectomy), or the presence of a remnant gallbladder. If any part of the gallbladder remains after surgery, it can become inflamed and lead to cholecystitis, even years later<sup>[2]</sup>. Here, the treatment adopted is to facilitate the resolution of the stones and relief from the associated complaints. Gallbladder stones are formed due to excess cholesterol or bilirubin in the bile. Therefore, a *Kapha-Pitta-Medo-Hara* line of treatment was adopted in the primary stage, which eventually led to the complete resolution of stones.

The *Varanadi gana*<sup>[4]</sup> is inherently *Kaphamedohara* in action and also corrects *Agnimandhya* in the body. Except for *Darbha* and *Shatavari*, all the constituent drugs in *Varanadi gana* have *Ushna Veerya*. The formulation also has *Katu Vipaka*. Therefore, it was administered initially to remove *Ama* by correcting *Mandagni*. A study has also demonstrated that *Varanadi Kwatha* is an effective Ayurvedic formulation for controlling chronic inflammation-related disorders<sup>[5]</sup>.

*Trayantyadi Kwatha* is a formulation described in *Ashtanga Hridayam* for the treatment of *Vidradi*, *Kamala*, etc.<sup>[6]</sup> The drugs in this formulation predominantly contain *Tikta* and *Katu Rasa*, which are effective in alleviating symptoms like *Aviapaka* and *Aruchi*. They pacify vitiated *Pitta Dosha*, promote *Dhatu Poshana*, and reduce *Dourbalya*. The *Tikta Rasa*, being *Rakta Shodhaka* and *Pitta Shamaka*, exerts an action on *Pittashaya Ashmari*. The formulation's hepatoprotective properties contribute to its efficacy in reducing elevated SGOT, SGPT, total and direct bilirubin, bile pigments, and bile salt levels. As *Trayantyadi Kwatha* is inherently *Pittarakta hara*, it acts on *Pittashaya Ashmari* (bile stones)<sup>[7]</sup>.

*Kanchanara Guggulu* is a *Kapha-Medo-Hara* formulation mentioned in *Bhaishajya Ratnavali*<sup>[8]</sup>. The ingredients possess properties like *Deepana*, *Pachana*, *Lekhana*, *Strotoshodhana*, *Anulomana*, and *Kapha-shamaka*, which can potentially address the pathogenesis of residual stones. *Guggulu* has *Deepana*, *Pachana*, and *Lekhana* properties, alleviating both *Vata* and *Kapha* while regulating *Agni*. *Trikatu* has *Ushna*, *Tikshna*, *Laghu*, *Ruksha Guna*, *Katu Rasa*, *Katu Vipaka*, and *Ushna Veerya* properties, making it effective as a *Kapha-Vata-shamaka*, *Deepana*, *Pachana*, *Stroto-vishodhana*, and *Shothahara* drug. *Triphala*, a popular herbal remedy, promotes bowel movement and has *Deepana*, *Pachana*, *Vatanulomaka*, and *Strotoshodhaka* properties, potentially correcting *Agnimandhya*. Studies have demonstrated that *Triphala* stimulates bile secretion, aids digestion, and reduces serum lipid levels. The combined properties of *Kanchanara Guggulu*'s ingredients may help improve *Agni*, thereby regularizing this disease condition<sup>[9]</sup>.

*Patola Katurohinyadi Kwatha* is described in *Ashtanga Hridaya* and is used to manage *Pitta Vikaras* and liver disorders<sup>[10]</sup>. It contains six ingredients: *Patola* (*Trichosanthes dioica* Roxb.), *Katurohini* (*Picrorhiza kurroa* Royle Ex Benth.), *Raktachandana* (*Pterocarpus santalinus* L.), *Murva* (*Marsdenia tenacissima* Roxb.), *Guduchi* (*Tinospora cordifolia*

Willd.), and Patha (*Cissampelos pareira* var. *hirsute*). These herbs possess *Pittagna*, *Kamalahara*, *Vishagna*, and *Raktaprasadhaka* properties. Patola has demonstrated hepatoprotective and lipid-lowering properties, attributed to its ability to reduce ALT, AST, and ALP levels and repair hepatocytes. The presence of saponins and tannins in *Patola* may inhibit lipid absorption. *Katuohini* contains iridoid glycosides, cucurbitacin glycosides, and other compounds, contributing to its *Tikta Rasa*, *Laghu-Ruksha Guna*, and *Katu Vipaka* properties. These properties may explain its pharmacodynamic activity in lipid disorders. *Picroside* has shown efficacy in models of liver toxicity, and *P. kurroa* extracts have demonstrated hepatoprotective activity and increased bile production. *Guduchi* has antihepatotoxic activity, normalizing liver function and reducing liver injury. Studies have shown its effectiveness in restoring altered liver functions (ALT, AST) and morphological changes. The formulation's properties and ingredient-specific activities suggest its potential benefits in resolving calculi<sup>[11]</sup>.

*Triphala Guggulu*<sup>[12]</sup> contains *Triphala*, which promotes digestion and lowers cholesterol, *Pippali*, which works against *Kapha* and reduces fat, and *Guggulu*, which has *Tikta*, *Katu Rasa*, *Laghu*, *Ruksha Guna*, and *Ushna Virya* properties, making it effective in reducing blood lipid levels. The constituents of *Triphala Guggulu* possess *Tikta*, *Kashaya*, *Madhura Rasa*, *Ushna Virya*, *Katu Vipaka*, *Laghu*, *Ruksha*, *Ushna*, *Tikshna Gunas*, *Tridosahara*, and *Shothahara* properties. These properties help relieve *Kapha*, *Vata*, and *Pitta doshas*. Specifically: *Tikta*, *Kashaya Rasa*, *Laghu*, and *Ruksha Guna* relieve *Kapha*, *Ushna Virya* reduces *Vata* and *Kapha*, *Tikta*, *Kashaya*, and *Madhura Rasa* alleviate *Pitta*. *Triphala Guggulu* activates *Agni* due to its *Ushna Virya* and *Laghu*, *Ruksha Guna*, and reduces *Srotorodha* due to its *Ushna*, *Tikshna*, *Laghu Guna*, and *Ushna Virya*. *Guggulu*'s properties make it effective in treating inflammatory conditions due to its *Kapha-Vatahara*, *Kledahara* effects<sup>[13]</sup>.

*Kokilakshaka Kwatha*, mentioned in the context of *Vatasonita*<sup>[14]</sup>, can relieve pain and inflammation. Pharmacological studies on *Asteracantha longifolia* indicate its potential in treating various conditions, including inflammatory ailments, hepato-biliary, and kidney disorders<sup>[15]</sup>.

*Veeratarvadi Kwatha* is specifically indicated for pain caused by *Ashmari*<sup>[16]</sup>. In Ayurveda, *Veerataru* is known for its effectiveness in treating *Mootravaha Srotodushti* conditions, such as *Mutrakruchra*, *Mutraghata* (anuria), *Ashmari*, and *Sharkara*. The ingredients of *Veeratarvadi Kwatha* possess *Vatakaphahara* properties, including *Strotoshodhana*, *Lekhana*, *Sophahara*, *Mootrala*, and *Bastishodhana*,

along with *Deepana-Pachana karma*. These properties help break down the pathogenesis of *Ashmari*<sup>[17]</sup>.

*Kaidaryadi Kwatha* is a traditional formulation mentioned in *Chikitsamanjari*, a valuable text for *Vaidyas* in Kerala. The formulation is described in the context of *Mahodara* (ascites) and consists of four ingredients: *Kaidarya*, *Patola*, *Sunthi*, and *Haritaki*. It has a specific action on gastrointestinal diseases. Its *Sophahara*, *Kaphamedohara*, and *Yakrit Prasadana* properties make it effective in treating residual calculi<sup>[18]</sup>.

*Chandraprabha Gutika*<sup>[12]</sup> is considered *Sarva-Roga-Pranaashini*, curing various diseases. It possesses *Katu*, *Tikta*, *Kashaya*, and *Madhura Rasa*, *Ushna Virya*, and properties like *Laghu*, *Ushna*, *Tikshna*, and *Ruksha*. The formulation includes anti-inflammatory ingredients like *Karpooora*, *Musta*, *Devadaru*, *Guggulu*, *Triphala*, *Ela*, *Shilajatu*, and *Makshika Bhasma*, which help reduce pain.

*Gokshuradi Guggulu*<sup>[12]</sup> contains diuretic, stimulant, and *Ashmari Bhedana* drugs, which favor the expulsion of calculus. *Gokshura* (*Tribulus terrestris*) has *Madhura Rasa*, *Guru-Snigdha Guna*, *Sheeta Veerya*, *Madhura Vipaka*, and pacifies *Vata* and *Pitta*. Both *Chandraprabha* and *Gokshuradi guggulu* also have an indication in *Asmari*, and they will reduce the inflammation<sup>[19]</sup>.

*Guggulu tiktaka grtha*<sup>[20]</sup> is *Vatahara* and having *Vedana samanatwa*. Here *Guggulu Tiktaka Kwatha* was given. It possesses *Tikta Rasa*, *Ushna Virya* and *Katu Vipaka*. The *Tikta Rasa* enhances *Dhatvagni* (metabolic activity) and has *Lekhana* properties. The *Ushna* property of *Guggulu* makes it an effective *Vatashamaka* agent. Additionally, its *Ruksha* and *Vishada Guna* properties contribute to its *Medohara* effect. The *Katu Rasa* property facilitates *Deepana*, thereby improving the patient's overall digestive condition<sup>[21]</sup>.

*Charaka* asserts, there is hardly any curable disease which cannot be controlled or cured with the aid of *Shilajatu* (*Ch. chi.1-3/65*). *Shilajatu* has a specific localized action on *Ashmari*<sup>[22]</sup> also.

*Guggulupanchapala Choorna*, a compound formulation mentioned in *Bhagandhara Chikitsa*<sup>[23]</sup>, improves *Jatharagni* due to its *Deepana* and *Pachana* effects. By correcting *Jatharagni* and eliminating *Srotorodha*, the formulation helps normalize vitiated *Doshas*. Its *Ushna*, *Deepana*, *Chedana*, and *Lekhana* properties eliminate vitiated *Kapha* from the *Srotas*, facilitating the outflow of metabolic wastes and preventing future *Srotas* vitiation, resulting in healthy *Dhatu* circulation.

*Madhusnuhi Rasayana*, mentioned in *Sahasrayoga*<sup>[24]</sup> comprising mostly *Agnideepana* and *Tridosahara* drugs, has *Raktaprasadaka* properties due to *Madhu*. This *Lehya* is having *Srotosodhana*,



*Lekhana* and *Rasayana* gunas. Ingredients like *Amalaki*, *Haritaki*, and *Ashwagandha* act as *Rasayana*, providing *Soolaghna* and *Sarvadhātu Vardhana* effects, which can offer mild nourishment (*Brmhana*) to the body. The *Deepana-Pachana* properties of the drugs correct *Dhatupaka*, ensuring proper nourishment of all *Dhatu* and preventing excessive *Kleda* formation<sup>[25]</sup>.

Here, the changes made in the formulations during each follow-up are according to the condition of the patient, disease, and associated complaints that are present in the patient due to climatic changes. *Kwatha kalpanas* and some proprietary medicines were used continuously from the beginning. Proprietary medicines were selected by analyzing every ingredient and ensuring the reputation of the pharmaceutical companies.

## CONCLUSION

The case report inferred that the patient with residual calculi with a history of chronic cholecystitis, who underwent laparoscopic cholecystectomy, was treated successfully with an Ayurveda holistic approach without undergoing any kind of surgery. Furthermore, it can be stated that Ayurvedic management, including *Shamana chikitsa*, along with strict adherence to *Pathya-Apathya*, offers excellent results in the treatment of residual calculi. As we know, the gallbladder is a sac that stores bile, and here, the residual stones are present in the remnant gallbladder fossa. Therefore, the stones are difficult to resolve with the medications due to their peculiar formation, and so the direct drug action is limited. A promising result with traditional Ayurvedic medicine offers hope in curing residual calculi while preserving normal bodily conditions. As it is a single case study, the results obtained here cannot be generalized. Therefore, these results can be further revalidated on a larger population to see the efficacy of Ayurveda's holistic treatment on residual internal calculi as an alternative to surgery.

## Declaration of patient consent

Authors certify that they have obtained patient consent form, where the patient has given her consent for reporting the case along with the images and other clinical information in the journal. The patient understands that her name and initials will not be published and due efforts will be made to conceal her identity, but anonymity cannot be guaranteed.

## Patient perspective

I was suffering from severe pain on the right side of the abdomen, which progressively worsened over time and was accompanied by fever and nausea, four and a half years before. I consulted a gastroenterologist at a nearby hospital. The doctor advised an abdominal ultrasound scan. The scan revealed multiple gallstones in the gallbladder, and I

was diagnosed with chronic cholecystitis. After three weeks, I underwent laparoscopic cholecystectomy surgery and was advised on diet and medications. After 2 years, I experienced persistent symptoms such as pain on the right side of the abdomen, fever, and nausea. At that time, I was afraid to take allopathic treatment because of the recurrence of the symptoms even after surgery. Then I visited the Government Ayurveda Medical College Hospital, Thiruvananthapuram. I took an abdominal ultrasound scan. The scan revealed multiple stones in the gallbladder stump. Then the doctor advised me to take the internal medications and also advised me to follow some diet plans. I used to take follow-ups every month, and the doctor had revised the medicines in each visit. I continued the medicine for one year. After one year (December 2024), on CT scan of the abdomen, it was found that all the stones in the gallbladder stump were gone. I got complete relief from the abdominal pain, nausea, and fever. I am very happy and satisfied with the Ayurveda treatment as I have gotten my healthy life back without undergoing any surgery.

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