Liver abscesses are purulent collections in the liver parenchyma that result from bacterial, fungal, or parasitic infection. The Antibiotics, percutaneous drainage and surgery are the only therapeutic solution for this condition. A 30-year young gentleman diagnosed case of multiple Amoebic liver abscesses visited at All India Institute of Ayurveda. He came with complaints of rectal bleeding, fever, pain in the abdomen along with blood and USG of abdomen showed multiple Liver Abscesses. In this case of liver abscess, after taking informed consent the patient was given an Ayurvedic treatment for 60 days without any Allopathic medicine or any invasive technique. There was a significant reduction noted in the symptoms of Abscess. At the end of treatment, USG examination revealed there was no focal defect or lesion in the liver and haematological parameters were found within the reference range. There were no clinically significant adverse reactions noted in the duration of treatment. The results of this study indicate the clinical efficacy of Ayurvedic treatment in the management of liver abscess and patient gave highly satisfactory response after his treatment. The treatment outcomes in the present case indicate that classical Ayurvedic measures may be helpful to the patients of a liver abscess.

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1. Introduction

Amebiasis is still a major health problem in tropical countries including India. Despite a decrease in mortality due to amebiasis by 14.8% over a decade, the number of affected persons has increased to 500 million people worldwide [1]. The mortality due to amebiasis is mostly by extraintestinal infections, amebic liver abscess being the most common one [2]. Many of the complications of liver abscess can be reduced by early diagnosis with the help of ultrasound, which is the gold standard investigation for liver abscess [3]. The immuno-compromised host is more prone to develop an amoebic liver abscess. The size of the Abscess is an important factor in determining the response to medical treatment. Typical symptoms include abdominal pain and fever, where abdominal pain is reported to be present in 98% and fever in 74% of the cases [4]. Liver abscesses carry a mortality rate of 20–60% even with appropriate medical-surgical management [5]. The diagnosis of Liver Abscess is based on, Stool-ova, cyst, Blood-culture, sensitivity, USG-whole abdomen [6].

In modern medicine, the only treatment options for the liver abscess are antibiotics, percutaneous drainage and surgery. In Ayurveda, it can be correlated with Yakrit Vidradhi. Acharya Charaka and Acharya Sushruta mentioned the symptoms of Vidradhi in Yakrit but not documented the line of treatment. In this case study, the combination of Ayurvedic drugs is used to treat Yakrit Vidradhi according to their properties.

2. Case presentation

A 30-year-old man, visited OPD of Department of Kayachikitsa at All India Institute of Ayurveda (1/9/2018) with complaints of low-grade fever, occasional nausea, rectal bleeding in drops since last three days with associated symptoms of incomplete evacuation of bowel, and decreased appetite since last two to three months. The patient also reported history of pain in the abdomen which was usually located in the right hypochondrium and abdominal discomfort since last 3 days. There was no history of tuberculosis or similar episode in the past, no relevant family history was present and had no history of any external exposure, ingestion of raw food or milk, or known contacts to animals but as
he was working as a driver, he used to eat outside food frequently. On examination he was conscious, febrile (Temperature- 100-degree F), pulse rate 114/min and blood pressure were 130/90 mmHg. There was significant icterus present in the bulbar conjunctiva, skin. As per abdominal examination patient had tenderness in right hypochondrium and epigastrium regions, umbilicus inverted. There were mild Hepatomegaly and Splenomegaly present. On per rectal examination, there were 2nd-degree internal haemorrhoids at 2, 5, & 7 O’clock positions. Rest of systemic examination was within normal limits. Hematological investigation revealed hemoglobin 14.9 g/dl, total leukocytes count (TLC) 15,800/cumm (polymorphs 77%, lymphocytes 16%, eosinophil 4%, monocytes 3%, basophils 0%), however liver enzymes SGOT/SGPT-35/40, total Bilirubin of 1.6 mg/dl (Direct- 1.1 and Indirect- 0.5). Albumin- 4 g/dl, Alkaline phosphatase was elevated to 125 IU. Stool for Ova and Cyst showed Ova nil and Entamoeba histolytica Cyst present. U.S.G abdomen showed liver is enlarged in size- 18 cm with grade II fatty infiltration with the well-defined hypoechoic lesion in Liver in Segment II measuring 115 cc and in segment VII measuring 26.22 cc seen with enlarged spleen measuring 13.9 cm with a diagnosis of right lobe Liver Abscess (Fig. 1). Renal function and serum electrolytes were within references range.

A treatment protocol was prepared for the sequential management of the disease. As the patient suffered from Arsha (Raktarsha) and Udara Roga simultaneously. As it was considered as Nidanarthakar Roga (Arshebhya Jatharam,) and the treatment planned accordingly [7].

![Image](https://example.com/image.jpg)
3. Management

As the patient was suffering from low grade fever, the first step of treatment protocol was to manage the fever along with Abscess. Based on presenting symptoms, Liver abscess can be correlated with Yakrit Vidradhi in Ayurveda. Thus, treatment for Yakrit Vidradhi along with Arsha as described by Acharyas was started [8–10]. There is no direct correlation of amoebic liver abscess in Ayurveda. It can be defined as Yakrit vikar or Yakrit Vidradhi. According to Ayurveda concept, Yakrita is moola of Raktavaha Srotas. Rakta and Pitta have Ashraya Ashrayee (substratum and subsistence) relationship so mostly Yakrit Vikaras (liver diseases) occur due to vitiation of Pitta, so most of the drugs mentioned for Yakrit Vikara (Liver diseases) or Kamala are Kapha- Pittashamaka either due to Tikta (bitterness), Kashaya (astringent) Rasas or Madhura Vipaka or Sheeta Veerya [11]. The medicines used in the treatment protocol adopted along with the approximate time are enlisted in the Table 2. Below table given for the various medicine preparation used in the treatment protocol (Table 1).

Patient was advised to consume Kulthi Yusha (Horse gram) with some controlled diet and controlled physical activities. Controlled diet implies restriction of the high-fat diet, spices and contaminated food (street food & water) and controlled physical activity means limited physical exertion related to his profession. He was advised not to drive more than 30 km in one run and take proper rest (>30 min) between two successive drives. On 7th day of treatment, his vitals were 124/80 mmHg, 90/min and 98°F i.e. blood pressure, pulse rate and temperature respectively. After 35th day of the treatment—Laboratory investigation were carried out that reported following changes TLC — 5.9000/Cumm (polymorphs 63%, lymphocytes 10%, total bilirubin — 0.47 mg/dl, direct bilirubin — 0.28 mg/dl, indirect bilirubin — 0.19 mg/dl, SGOT-33 IU/l, SGPT-41 IU/l, Alkaline phosphatase — 97.4 IU/l and stool ova cyst investigation confirms the presence of cyst in the stool. U.S.G abdomen reveal enlarged liver 15.8 cm in size with grade 2 fatty infiltration and no focal defect or lesion. Also, splenomegaly of size 15 cm was noted (Fig. 2).

After the treatment of 35 days, the patient's condition was improved and he felt healthy. Clinically there was no icterus, pain in the abdomen and fever. But occasionally patient passed hard stools and felt pain in the anal region during defecation. Subsequently 36 days of treatment, all previous medications were discontinued except Phalatrikadi kvāthā cīrṇa 10 g m BD before food, Arogyavardhani Vaṭ 250 mg BD after food along with Arikukhāra Rasa 250 mg BD after food and Kasisadi Taila for local application on the anal region. Sitz bath continued. On 58th day, repeated investigations revealed normal CBC, LFT, and stool -ova cyst. After that patient was asked to continue Phalatrikadi kvāthā cīrṇa for management of fatty liver as well as hepatomegaly and patient was followed up regularly. After 60 days, the patient did not experience any symptoms, hence the medication were discontinued but advised to follow the dietary restrictions. Now the patient is symptom free and in good health.

This strategic treatment was adopted for the management of Liver Abscess stated below (Table 2). The duration of the treatment can be varied due to the size and number of the abscesses.

Fig. 2. U.S.G. abdomen repeated after 35 days showed liver is enlarged in size- 15.8 cm with grade II fatty infiltration and no any focal defect or lesion was seen in the liver with splenomegaly of size 15 cm.
4. Discussion

There were many studies conducted on the liver abscess. One of the studies on liver abscess management reported that, once recognized, percutaneous drainage and antibiotic treatment are the mainstay of management for PLA [18]. One of the other studies states percutaneous catheter drainage is a better modality compared to percutaneous needle aspiration especially for larger abscesses that are partially liquefied or with thick pus [19].

But the treatment protocol in the present study was prescribed according to their reference in the Ayurveda classics and based on the mode of action of drugs. *Mahasudarshan ghan vati* consist of *Chirayata* and *Kutaj* as the main ingredient of the classical formulation. The pharmacological data provide the evidence that for the sustenance of folklore claim of *Swertia chirata* as an antipyretic agent. *Swertia marina* found in aqueous extract of *S. chirata* is probably responsible for the antipyretic activity [20]. *Swertia marina* has also been tested for its anti-hepatitis properties [21]. Mangelin is testified to have anti-viral, antioxidant and anti-inflammatory activities [22]. *Swerchirin* is well-known for its anti-malarial, hepatoprotective, pro-hematopoietic and blood glucose-lowering activities [23]. The intervention of *PhalatrikadiKwath* is decided based on the main ingredient which is *Kutki* (*Fkurorra*). *P. kurroa* retrogressed several features like lipid content of the liver tissue, morphological regression of fatty infiltration, hypolipidemic activity, and reduction of cholestasis [24]. *Kutki* possesses hepatoprotective anti-viral and anti-oxidants activities [25]. *Moringa* (*Shigru* or *Shajan*) is best effective in acute inflammation and is also useful in chronic inflammatory conditions. It has the ability to inhibit cellular accumulation and fluid exudation [26]. *Arogyavardhana* *Vat* helps in the preservation of the physiology and structure of *yakrit* (liver) as it is said to possess *Rasayana* (rejuvenating) properties. It is effective in acute viral hepatitis, possesses significant effects on recovery of the liver function and hepatoprotective effect against CCl4-induced liver injury [27]. *Arshakumar* *Rasa* containing *Rasa*, *Gandhika*, *Abhraka*, *Tankana* etc. *Abhrak bhasma* (mica-based) is reported to possess hepatoprotective, anabolic, immunomodulatory effects [28]. *Acharya Sushruta* advocated the use of *Kasisadi Taila* in *Dushta Vrana*, external application of *Kasisadi Taila* helps in cleaning the wound and helps in easy healing. *Kasisadi Taila* prepared with *Kasika* as the main ingredient in wound healing for its efficacy has been indicated in *Sushruta Samhita*, (Sutrasthana 37th chapter, 16th verse) [29].

5. Conclusions

In the present case, the impact of the treatment given to the patient of Liver Abscess indicated a decent outcome. The entire Ayurvedic treatment methodology selected for this situation indicated *Kapha-Pitta shamaka*, Anti-inflammatory, Antioxidant, and liver rehabilitation properties. Where no invasive strategy was utilized and very little time was required for the improvement in subjective as well as objective standards. However, the specific method of activity of medications can’t be asserted, only based on a couple of case studies, yet in light of progress in abstract and target boundaries seen for the present case, the above method of activity can be hypothesized. For additional exploration, the research can be carried out with a large sample size.

6. Investigations

- Abdominal ultrasound to locate an abscess
- Blood tests for signs of infectious inflammation, such as an increased serum white blood count and neutrophil levels (CBC, LFT, KFT ETC)
- Stool ova cyst test.

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Author contributions

Dr. Swarnima Mishra: Conceptualization, Methodology, Writing- Original draft preparation. Dr. Divya Kajaria: Supervision, Writing- Reviewing and Editing, Conceptualization.

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