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Effective Management of Non-alcoholic Fatty liver disease with Siravedha - A Case Report

Case Report

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Abstract

Background: Nonalcoholic Fatty liver disease (NAFLD) is a form of Simple fatty liver whose progression leads to adverse circumstances, e.g., metabolic dysfunction. *Sushruta* said that the *Sira Vedha* at *Dakshin Kurpara Sandhi* as a therapy for *Yakrit Vikara* Modern science also supports on the same page that phlebotomy treatment for some liver diseases. Aim & Objectives: To study the efficacy of *Siravedha* in the management of Nonalcoholic Fatty liver disease. Material & Methods: Single case study of 44 years old female patient suffering from complaints such as nausea, loss of appetite, distended abdomen, weight gain, constipation for 10 Months. Diagnosed NAFLD patient by USG had severe insensitivity towards allopathic medicines. After a thorough examination of the patient based on *Ayurvedic* fundamentals, three sittings of *Siravedha* (65 ml Bloodletting) from the *Dakshin Kurpar Sandhi* (Rt.Cubital fossa) were done at the interval of 15 days and followed was taken after one month. Result & Observations: U.S.G. Abdomen done after one month showed encouraging results and improvement in the liver grade. The liver showed normal shape and Echotexture. Moreover, clinical features, also resolved completely. Discussion: *Siravedha* may decrease liver enzymes, oxidative stress, and necrosis, reducing apoptosis and improving liver cells' health. Conclusion: This case report is helpful to plan further clinical studies in a large sample size by showing the efficacy of *Siravedha* in the management of Nonalcoholic Fatty liver disease without causing any undue event. This case study also reaffirms the classical reference of the specific site of *Raktamokshana* in a specific clinical condition.

Key Words: Non-Alcoholic Fatty Liver Disease, NAFLD, *Sira Vedha,* USG.

Introduction

Non-alcoholic Fatty liver disease (NAFLD) is one of the hepatic appearances of metabolic syndrome. It is a form of Simple fatty liver. It is associated with characterized progressive hepatocellular injury. The prevalence of NAFLD is increasing day by day, one of the major causes of increasing widespread obesity and diabetes mellitus (D.M.) [1]. If it is neglected, it can ultimately lead to liver cirrhosis and hepatocellular carcinoma, which are the cause of liver-related morbidity and mortality. In NAFLD, no pharmacological agent is established as a standard R.X., so lifestyle modification is a single option for such patients.

However, *Sushruta* said that the *Sira Vedha,* i.e., type of *Raktamokshana* at *Dakshin Kurpara Sandhi* as a therapy for *Yakrit Vikara.* Modern science also supports on the same page that phlebotomy treatment for some liver diseases but does not mention the exact site for phlebotomy. Still, because of a lack of clinical evidence, one cannot confidently practice it in routine exercise. Overview of all the above facts, through this case study, a novel attempt has been made to study the efficacy of *Sirvedha* with lifestyle modifications for the management of Nonalcoholic Fatty liver disease to generate clinical evidence.

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Details of the case

It is a single case study. The demographic details of the patient are provided in table no.1.

Chief Complaints

Chief & associated complaints of the patient are depicted in table 2.

History of present illness

A 45-years-old female patient was symptomless before ten months; gradually, she suffered from clinical features mentioned in table no.2.She had taken symptomatic treatment from an allopathic physician, but she didn't get satisfactory relief. Therefore, she approached *Panchakarma* O.P.D. Mahatma Gandhi

Ayurveda Hospital & research center, Salod, Wardha, Maharashtra for *Ayurvedic* treatment.

History of the patient

Detailed History of the patient is provided in table no.3.

General examination (Clinical Findings)

O/E- Status of the patient is moderate

P/A: Hard, Non-tender but distended

- No abnormal findings such as Ascites/ Hepatomegaly/ Splenomegaly were noted in clinical examination.
- Blood pressure: 110/80 mm of Hg
- Weight: 63 kg
- Height: 141 cm
- *Prakriti- Kaphapradhana Pittaja*

Clinical features showed the abnormality of the gastrointestinal system, Rest of the systemic examination did not find any abnormality.

***Ayurvedic* examination**

- ***Ashtavidha Parikshana*** *Ashtavidha Parikshana* is depicted in table no.4.
- ***Strotas Parikashana*** *Rasavaha,Raktavaha Annavaha & Purishvaha Strotas Vikruta*

Investigations

USG Abdomen & pelvis (20/08/21)

Raised echotexture in liver having size 14.5 cm showing grade I Fatty liver. The Rest of the findings are normal.

Diagnosis

Yakrit Vikar (Non-alcoholic fatty liver disease) with Grade-I fatty liver

Intervention

Three sittings of *Siravedha* were given to the patient at the interval of 15 days (on baseline visit, 15th day, and 31th day), followed was taken after one month. Approximately 65 ml of blood was let at each sitting from the *Dakshin Kurpar Sandhi* (Right Cubital fossa). Simultaneously, lifestyle modifications with diet regimes are also advised to the patient and assessed on the basis of subjective (Table no.5) and objective parameters (Table no. 6).

Procedure of *Sira Vedha*

a) Pre-procedural method: Disinfect the entry site. Positively identify the subject by two forms of identification; ask the subject to state and spell his/ her name and his/her birth date. Check these against the requisition (paper or electronic). Check the requisition form for requested tests, other subject's information. Position the subject in a chair, or sitting or lying on a bed. Perform hand hygiene and put on gloves

b) Procedural method: Identified site for the venipuncture is medial cubital. Select medial cubital for venipuncture, by placing the tourniquet 3 to 4 inches above the selected puncture site on the subject. Do not put the tourniquet on too tightly or leave it on the subject longer than 1 minute. Next, put-on non-latex gloves, and palpate for a vein. When a vein is selected, cleanse the area in a circular motion, beginning at the site and working outward. Allow the area to air dry. After the area is cleansed, it should not be touched or palpated again. If you find it necessary to reevaluate the site by palpation, the area needs to be re-cleansed before the venipuncture is performed. Ask the subject to make a fist; avoid "pumping the fist." Grasp the patient's arm firmly using thumb to draw the skin taut and anchor the vein. Swiftly insert the needle through the skin into the lumen of the vein. The needle should form a 15–30-degree angle with the arm surface. Avoid excess probing.

c) Post-procedural method: Ask the subject to hold the gauze or cotton wool in place, with the arm extended & raised. Ask the subject NOT to bend the arm, because doing so causes ahaematoma. Discard the used needle and syringe or blood-sampling device into a puncture resistant container. Check the label and forms for accuracy. Remove gloves and place them in the general waste. Perform hand hygiene.

Result & observations

After one month, the patient was assessed for clinical features and U.S.G. reports which were repeated. After three sittings of *Siravedha*, grade I fatty liver turned to normal and showed no raised echotexture in the liver. After this one month, the patient became symptom-free without giving any single medicine orally. Her lipid profile also got to normalcy. Assessment of the patient based on clinical features and radiological findings are shown in tables 5 & 6, respectively.

Table No.1: Demographic details

S.N.	Head	S.N.	Head
1	Name:- XYZ	**6**	Occupation: Housewife
2	Sex:-Female	**7**	Marital status: Married
3	Age:- 44 Years	**8**	Education: Graduate
4	Address:- Wardha	**9**	Socio economic status: Middle Class
5	Phone no. :- ******8024	**10**	O.P.D. No.: 2108260012

Table No.2: Chief & associated Complaints

S. N.	Symptoms	Severity	Duration
1	*Agnimandya* (Loss of appetite)	Grade-2	For 10 Months
2	*Udaradhmana(*Distension in abdomen)	Grade-3	
3	*Aruchi* (Loss of taste)	Grade-1	
4	*Apakti* (Indigestion)	Grade-2	
5	*Malavstambha* (Constipation)	Grade-2	
6	*Shirshoola* (Headache associated with nausea and vomiting)	Grade-2	
7	Weight gain	-	Two years

Table No.3: History of the patient

S.N.	Heads	Details of the patient
1	Past History	No history of major medical disease H/0-Renal stone before two years(resolved after hydrotherapy) H/0- Severe insensitivity towards allopathic medicines
2	Family History	Mother –N.A.D.
		Father – Obese, and K/C/O/HTN
		Siblings: N.A.D.
3	Personal History	Diet: ➢ Pure vegetarian diet, excess intake of spicy, oily, and fatty food ➢ Intake of food at Irregular time
		Disturbed life due to Stress family life
		Sleep: Interrupted
		No history of any addiction

Table no.4: *Ashtavidha Parikshana*

S.N.	Head	Observation	S.N.	Head	Observation
1	*Nadi* (Pulse)	84/min (*Kaphapradhana Pittaja)*	5	*Shabda* (Speech)	*Spashta*
2	*Mala* (Stool)	Unsatisfactory *Aniyamit,*	6	*Sparsha* (Touch)	*Samshitoshna*
3	*Mutra* (Urine)	*Samyak* (5-6 times /day)	7	*Druka* (Vision)	Spashta
4	*Jivha* (Tongue)	*Saam*	8	*Akruti* (Posture)	*Sthoola*

Table no.5: Assessment of the patient

S. N.	Subjective Parameter	Before Treatment (on 1st day)	On 15th Day	After Treatment (31th day)
1	*Agnimandya* (Loss of appetite)	Grade-2	Grade-1	Grade-0
2	*Udaradhmana* (Distension in abdomen)	Grade-3	Grade-2	Grade-0
3	*Aruchi* (Loss of taste)	Grade-1	Grade-0	Grade-0
4	*Apakti* (Indigestion)	Grade-2	Grade-1	Grade-0
5	*Malavstambha* (Constipation)	Grade-2	Grade-1	Grade-0
6	*Shirshoola* (Headache associated with nausea and vomiting)	Grade-2	Grade-1	Grade-0
7	Weight gain	63kg	60 kg	58 kg

*Grading reference- Prof. M.S. Baghel, Dr. Rajagopal S., Developing Guidelines for Clinical Research Methodology in Ayurveda, WHO-DFC Sponsored Project, Institute for Postgraduate Teaching & Research in Ayurveda, Gujarat Ayurved University, Jamnagar, 2011

Table No.6: Objective Parameter Changes in radiological findings (U.S.G. Abdomen & Pelvis)

20/08/21 (Before treatment)	22/09/21 (1 month after treatment)
Raised echotexture in liver having size 14.5 cm showing grade I Fatty liver.	No raised echotexture in the liver. Normal U.S.G. Impression. No changes of fatty liver.

Discussion

Effect of *Siravedha,* i.e., bloodletting in NAFLD, can be justified as follows: Hyperferritinemia is frequently observed in persons with chronic liver disease, especially in NAFLD, due to iron deposition in the liver, and it often induces insulin resistance and triggers grade of liver injury. Hyperferritinemia occurs in approximately one-third of patients with NAFLD, and it is primarily responsible for further hepatic fibrosis as a result of enhanced oxidative stress in the liver tissues. *Siravedha* may reduce these ferritin levels by evacuating blood from the body and avoiding such types of injury severity to liver tissues. Moreover, *it* also decreases elevated liver enzymes, oxidative stress, and necrosis, reducing apoptosis and improving liver cells' health. It avoids further liver damage and fibrotic changes by reducing such oxidative stress[1,2]. The Hypolipidaemic effect of Siravedha in this patient can be justified based on the observations noted by a systematic review done by Jaruvongvanich V et al.2016. The same observation is pointed out in this case also. In addition to this, the Same review study showed that due to bloodletting, there occurs a significant drop in systolic blood pressure (from 148 mmHg to 130 mmHg), heart rate, and blood glucose levels; and there was a marked improvement in cholesterol levels. Reduction in triglyceride levels and rise in the high-density cholesterol level due to *Siravedha* are also proved.

In this patient, a total five kg weight loss was observed within one month. A preliminary study conducted by Researcher Andreas Michalsen of the Charité-University Medical Centre in Berlin, Germany, to study the weight-reducing effect of bloodletting in obese people with metabolic syndrome also supports this finding of the current study by stating that bloodletting can use as therapy for weight & blood pressure reducing effect and to decrease the cardiovascular risk in such patients[3]. Obese patients or people with metabolic syndrome and hypertension often have above-average levels or high serum iron levels. This study also states that *Siravedha* reduces the body's stores of iron, R.B.C. The body uses iron stored in other sites to compensate for this deficit and uses for the formation of new R.B.C. [4]. According to the study conducted by Andreas Michalsen, bloodletting is also a safe and effective way to reduce such types of iron stores. The weight-reducing effect of bloodletting is also supported by a study conducted at the University of California, San Diego, stating that 650 calories are washed out per pint of blood while donation [5,6].

It may occur due to the burning of additional calories to replace the blood or plasma in the body (at least temporarily). The body's metabolism may increase due to the body's utilization to use energy for synthesis of new proteins, R.B.C., and other blood components to replace those lost while bloodletting [7-14].

Conclusion

This case report is helpful to plan further clinical studies in large sample size by showing the efficacy of *Siravedha* in the management of Nonalcoholic Fatty liver disease without causing any undue event. It also enhances the beneficial effect of lifestyle modification within a shorter duration. This case study also reaffirms the classical reference of the specific site of *Raktamokshana* in a specific clinical condition. Due to its iron depleting and anti-oxidant effect, it can become a safe and promising intervention to treat Nonalcoholic Fatty liver disease and avoid further liver damage.

The Conflict of Interest-Nil
The source of any support received: NIL

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