



A Comprehensive Reversal of Non-Alcoholic Fatty Liver Grade-2 (NAFLD): Clinical Insight of Case Report

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ABSTRACT:

Non-Alcoholic Fatty Liver Disease (NAFLD), a hepatic manifestation of metabolic syndrome, is rising due to sedentary lifestyles and poor diet. It involves hepatic triglyceride accumulation without significant alcohol intake. Grade 2 NAFLD, marked by moderate fatty infiltration, is a key stage for timely intervention to prevent progression into steatohepatitis or cirrhosis. In Ayurveda, it correlates with *Santarpanttha Yakrit Vikara*, resulting from *Kapha-Meda Dushti*, *Agnivaishamya*, and *Srotorodha* at the *Raktavaha Srotas*. This case study evaluates the efficacy of *Virechana* and *Shamana Chikitsa* in lifestyle-induced Grade 2 NAFLD. A 47-year-old female teacher presented with weight gain, central obesity, fatigue, and bloating. USG showed Grade 2 fatty liver with an incidental umbilical hernia. Ayurvedic assessment revealed *Agnimandya* and *Kapha-Meda Dushti*. Management included: *Deepana-Pachana* to restore *Agni*, *Virechana Karma* for systemic detoxification, Internal medicines—*Katuki Churna*, *Phalatrikadi Kwath* for *Lekhana* and hepatostimulation. The treatment was continued for three months with regular monitoring. Follow-up USG showed complete resolution of fatty infiltration and normalized echo-texture. The patient achieved 7 kg weight loss, improved digestion, reduced bloating, and enhanced energy levels. No adverse events occurred. This case highlights the potential of Ayurvedic interventions in reversing NAFLD. The integrative approach of *Virechana* with rational *Shamana Chikitsa* provided safe, effective, and sustainable outcomes. It emphasizes Ayurveda's role in holistic, preventive, and personalized management of lifestyle-related hepatic disorders.

KEYWORDS: *Kaphamedu-Dushti* NAFLD, *Phalatrikadi Kwath*, *Virechana*, *Yakrit Vikara*.

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INTRODUCTION:

Non-Alcoholic Fatty Liver Disease (NAFLD) has emerged as the most prevalent cause of chronic liver disease worldwide, characterized by hepatic fat deposition exceeding 5-10% of liver weight in the absence of significant alcohol consumption^[1]. Progression of NAFLD can lead to steatohepatitis, fibrosis, and cirrhosis, posing significant health risks. It is becoming epidemic with increased obesity, prevalence in general populations ranges from 11.2% to 37.2% ^[2]. Ayurveda recognizes conditions resembling NAFLD under *Yakrit Vikara* ^[3], particularly *Santarpanoatha* disorder, where vitiated *Kapha* and *Meda* obstruct *Srotas*, resulting in Hepatic dysfunction. Early intervention using Ayurvedic therapies may reverse fatty infiltration and prevent disease progression.

CASE REPORT:

A 47-year-old obese female (BMI 35kg/m²) presented at *Kayachikitsa* OPD ITRA Jamnagar, with a history of gradual weight gain and central obesity over 4 years with on and off fatigue and bloating. She had no complain of abdominal pain, jaundice or digestive disturbances. The general condition of patient was good with moderate appetite and tongue coated, vitals are as follows- BP: 120/80mmHg, Pulse rate: 78/min (regular, full volume), temperature was normal. On Systemic examinations-CNS patient was conscious,

well oriented to time, place, person; higher mental functions were intact with no abnormality detected. CVS: S1S2 heart sound heard clearly, no other abnormality found. On respiratory examination air entry normal with clear lung field. P/A: on inspection- fatty distended abdomen which moves with respiration, no scars etc found. On superficial palpation no tenderness present, on deep palpation no organomegaly found. On percussion tympanic sound heard; on auscultation bowel sound heard.

Anthropometry: height:164 cm, weight: 95kg, BMI: 35.3kg/m²
Waist circumference: 104cm, waist-hip ratio: 1.019

Family and past history: Nothing contributory.

Ayurvedic Assessment:

Nidana (etiological factors): excess consumption of *Guru*, *Snigdha*, *Madhura* *Ahara Dravya* along with sedentary lifestyle. **Dosha-Dhatu:** predominantly vitiation of *Kapha Dosha* and *Medha Dhatu*. **Samprapti:** *Agnimandya*→*Kapha-Meda Pradhana Dushti*→*Srotorodha* in *Yakrit*→*Yakrit Dushti*→*Yakrit Vikara* (NAFLD).

Investigations:

Liver function test, lipid profile and fasting blood sugar level were within normal limits. Details are mentioned in table no.1.

Table-1: Investigations

Tests	Before treatment	After treatment
Ultrasonography of abdomen	Grade 2 fatty liver, cholelithiasis (largest of 12.7mm), umbilical hernia defects approx. 3.6cm (18/09/2024)	Liver normal size and echotexture, cholelithiasis (largest 10.3cm), umbilical hernia defect approx. 2.6cm (13/03/2025)

Lipid profile	Total cholesterol: 235mg/dl Triglyceride: 198mg/dl HDL: 39.9mg/dl LDL: 119mg/dl	Total cholesterol: 177mg/dl Triglyceride: 153mg/dl HDL: 42.1mg/dl LDL: 98mg/dl
Liver function test	SGOT:13 SGPT:14 Alk. Phosphatase: 56 Total protein:6.82 Albumin globulin ratio:1.58 Total bilirubin:0.43	SGOT:14 SGPT:15 Alk. Phosphatase:58 Total protein:6.80 Albumin globulin ratio:1.57 Total bilirubin:0.43
Fasting blood sugar	104mg/dl	98mg/dl
Hemoglobin	12.7gm%	12.6gm%

Table-2: Time line of the Case Report:

Date	Clinical events	Intervention/procedure
29/09/2024	First visit to OPD Diagnosed as NAFLD	Virechana procedure was explained, advised for admission.
08/11/2024 to 13/11/2024	Deepana-Pachana	<i>Shivakshara Pachana Churna</i> 5gm with <i>Takra</i> 3 times a days after meals <i>Musta siddajala Muhurmuhur Pana</i>
14/11/2024 to 19/11/2024	<i>Snehapana</i> started	<i>Snehapana</i> with <i>Tripbala Grita</i> at morning empty stomach till <i>samyaka snigdha lakshana</i> observed 1 st day-30ml 2 nd day-70ml 3 rd day-140ml 4 th day-180ml 5 th day-240ml
20/11/2024 to 22/11/2024	<i>Virechanapurva Sarvanga</i> <i>Abhyanga</i> and <i>Swedana</i>	After <i>Samyaka Snigdha Lakshana</i> , <i>Sarvanga Abhyanga</i> with <i>Tilataila</i> and <i>Sarvang Bashpa Swedan</i> with <i>Dashamula Kwath</i> for 3 days done
23/11/2024	<i>Virechana</i> <i>Pravara Shuddhi</i> observed with 30 vega.	<i>Virechana</i> administered with <i>Trivruth Avaleha</i> 100gm with <i>Tripbala Kwath Anupana</i> 150ml
23/11/2024 to 29/11/2024	<i>Samsarjana Krama</i>	<i>Samsarjana Krama</i> advised for 7 days as per <i>Pravara Shiddhi</i> with 3 <i>Annakala</i> and patient was discharged
30/11/2024 to 15/12/2024	<i>Shamanoushadhi</i> started	<i>Phalatrikadhi Kwath</i> 40ml twice a day empty stomach <i>Katuki Churna</i> 3gm and <i>Musta Churna</i> 3gm Twice a day after meals with lukewarm water.
16/12/2024 to 30/12/2024	First follow-up	<i>Phalatrikadhi Kwath</i> 40ml twice a day empty stomach <i>Katuki Churna</i> 3gm and <i>Musta Churna</i> 3gm Twice

		a day after meals with lukewarm water.
31/12/2024 to 15/01/2025	Second follow-up	<i>Phalatrikadhi Kwath 40ml</i> twice a day empty stomach <i>Katuki Churna 3gm</i> and <i>Musta Churna 3gm</i> Twice a day after meals with lukewarm water.
16/01/2025 to 30/01/2025	Third follow-up	<i>Phalatrikadhi Kwath 40ml</i> twice a day empty stomach <i>Katuki Churna 3gm</i> and <i>Musta Churna 3gm</i> Twice a day after meals with lukewarm water.
31/01/2025 to 15/02/2025	Fourth follow-up	<i>Phalatrikadhi Kwath 40ml</i> twice a day empty stomach <i>Katuki Churna 3gm</i> and <i>Musta Churna 3gm</i> Twice a day after meals with lukewarm water.
16/02/2025 to 02/03/2025	Fifth follow-up	<i>Phalatrikadhi Kwath 40ml</i> twice a day empty stomach <i>Katuki Churna 3gm</i> and <i>Musta Churna 3gm</i> Twice a day after meals with lukewarm water.

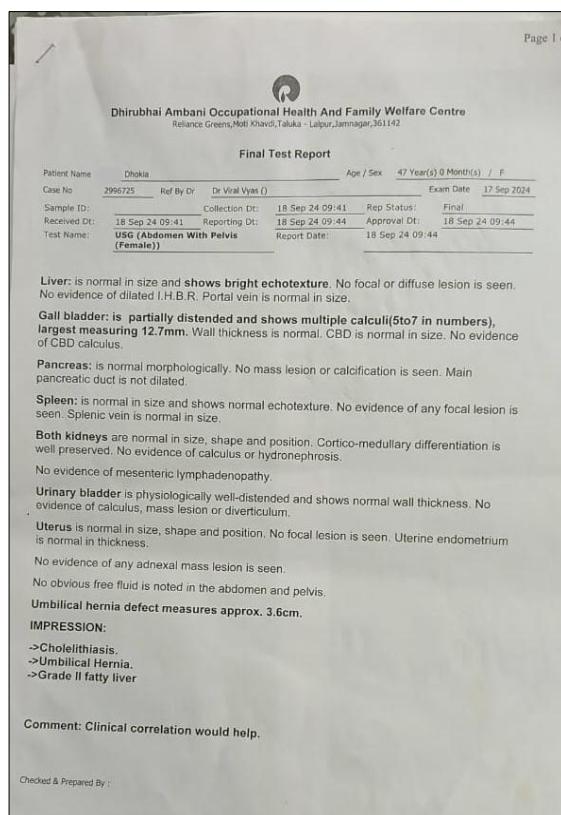


Figure-1: USG abdomen and pelvis before treatment

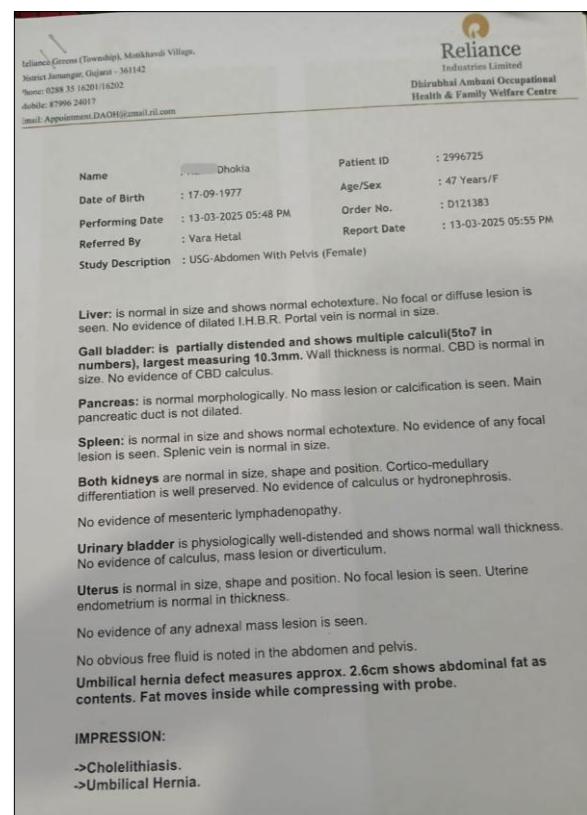


Figure-2: USG abdomen and pelvis after treatment

RESULT:

After *Virechana* patient found weight loss of 7 kg, with lightness in the body. Ultrasonography of abdomen showed complete reversal fatty tissue in the liver, also reduced size in the gall stone after the ayurvedic intervention for 3 months.

DISCUSSION:

Non-Alcoholic Fatty Liver Disease (NAFLD), marked by triglyceride accumulation in hepatocyte, is a globally prevalent liver disorder. If left untreated, it may progress to steatosis, hepatomegaly, and cirrhosis. Due to consumption of *Madhura*, *Guru Aharadravya* with *Adhyashana* along with sedentary life-style lead to vitiation of *Agni* and *Kapha Pradhana Medha Dhatus Dushti*. This vitiated *Kapha-medas* obstruct the normal flow of **Vata** (*Margavarodhana*) and gets *Sthanasamshraya* in *Yakrit* and leading to manifestation of this condition. To treat this *Kaphamedavaranajanya Yakrit Roga Amapacha, Agnideepana* and *Srotoshodhana* followed by *Kaphamedgna Anushadhi* used in this case. For this purpose *Shivakshara Pachana Churna*^[4] which contains *Haritaki, Yavakshara, Ajamoda, Saindava, Trikatu*, it does *Deepana-Pachana* by its *Ushna, Teekshna Guna* and does additionally *Vatanulomana* which is required in *Medavruta Vata* condition, ultimately corrects the *Mandagni. Musta Siddajala* enhances *Agni* and helps in clearing *Ama* by its *Katutikta Rasa*. This drug exhibit carminative, antioxidant, and hepatoprotective effects.^[5] After this *Snehabhana* initiated with *Tripahala grita*^[6] supports *Agnideepana, Srotoshodhana*, and, it has hypolipidemic, anti-inflammatory and hepatoprotective effects, regeneration of hepatocytes, crucial in reversing early-stage NAFLD.^[7] *Virechana* administered to correct the *Meda-Avarana*, and *Tripahala Kwath* used with this for *Kapha-medas Lekhan*

ultimately helping in *Srotoshodhana*. *Phalatrikadi Kwath* mentioned in *Pandukamala Chikitsa* of *Chakradatta* contains *Tripahala, Haridra, Vishala, Musta*.^[8] It act as *Deepana, Pittarechaka, Tridoshagna* by its *Tikta-kashay, Laghu-ruksha, Tridoshagna* properties. *Katuki* has *Tikta Rasa, Laghu, Ruksha* and *Katu Vipaka* properties. It does *Doshasangatha Bhedana* and enhances liver detoxification ultimately stimulates hepatocyte regeneration.^[9] Studies proved its cholagogue and choleric (stimulates bile secretion and flow) effect facilitating fat emulsification and preventing lipid accumulation in the liver.^[10] Hence both formulations used for *Sampraptivighatana* of *Medavrutajanya Yakrit Vikara*.

CONCLUSION:

Ayurvedic management using *Virechana* and *Shamanoushadhi* effectively addressed metabolic dysfunction and hepatic fat accumulation in NAFLD. This holistic approach highlights Ayurveda's potential in preventing disease progression.

Limitation of study:

As it is single case study, efficacy can be well proved with randomized clinical trial with larger sample

Consent of patients: Informed written consent was taken.

Conflict of interest: The author declares that there is no conflict of interest.

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