

Application of naturopathy management on non-alcoholic fatty liver and cholelithiasis – A case report

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Received – 02 March 2022

Initial Review–05 March 2022

Accepted –21 March 2022

ABSTRACT

Cholelithiasis and Non-alcoholic Fatty liver disease are the most common hepatobiliary disorder which are reported in hospitals. Damage to the hepatic cells due to high cholesterol, improper food and imbalanced bile results in the cascade of hepatobiliary disorders. Here is a case of a 64-year male patient with a previous history of cholelithiasis has indigestion and frequent burping for the past 2 months. In the ultra-sonogram findings, he was diagnosed with Cholelithiasis, Fatty liver grade 1 with simple hepatic cyst (1.3 cm), hypercholesterolemia. This case study was done to investigate the effect of Dietary management and liver flush in Cholelithiasis and fatty liver. The patient was given 10 days fruit diet and given liver flush on the 11th day followed by dietary modification for a month. After the treatment his cholesterol level reduced from 207 to 149 while bilirubin level also showed reduction from 2.44 to 2.17. Ultra-sonogram findings shows that normal liver size and echo texture and absence of calculi in Gall bladder. Under this case study we can conclude that there is a positive improvement in the hepatobiliary disorder by following the Naturopathic management.

Keywords- Liver flush, Fatty liver, Detoxification, Naturopathy.

Gallstones are hardened deposits of the bile formed inside the gallbladder which occurs due to imbalance in chemical constituent of the bile. Gallstones are becoming increasingly common in all age groups, but the incidence increases with age and women are more prone as compared to men. It is asymptomatic, and only 10% and 20% will eventually become symptomatic within 5 years and 20 years of diagnosis. Thus, the average risk of developing symptomatic disease is low, and approaches 2.0-2.6% in a year [1]. In symptomatic gallstones, the most common clinical manifestation is recurrent right upper quadrant pain or epigastric pain. It may be due to intake of fatty food and mostly occur at night. There can be association of vomiting, nausea or pain intensity variations. Fever can be occurring in this condition due to infection. Other symptoms include jaundice which may present due to obstruction in bile [2].

Non-alcoholic fatty liver disease (NAFLD) is defined as macro vesicular steatosis in $\geq 5\%$ hepatocytes, in the absence of a secondary cause such as alcohol or drugs. It encompasses a spectrum of disease from non-alcoholic fatty liver (NAFL) and other complications like fibrosis and cirrhosis. [3] Consumption of vegetables or fruits decreases the chances of gallstones and fatty liver, while intake of spicy foods, fried foods increase the chances of the disease. Dietary modifications are said to be the common cause for Hepato biliary dysfunction. In the present study, we adopted apple fruit diet followed by liver flush using olive oil, lemon juice seems to be effective in rejuvenating liver and removes gall stones from gall bladder. [4]

CASE REPORT

A 64-year-old male came to our yoga and naturopathy outpatient department with a complaint of indigestion and

Table 1: Pre and Post assessment.

S.NO	Test name	Pre-assessment	Post assessment
1.	Serum cholesterol (mg/dl)	207	149
2.	Bilirubin Total (mg/dl)	2.44	2.17
3.	Bilirubin Indirect (mg/dl)	1.87	1.51
4.	Ultra-sonogram	Liver: Normal in size and shows diffuse increase in echo texture. Simple cyst measures 1.3cm measures in segment 2 left lobe of liver Gall bladder: Multiple calculi largest measuring 8 mm within. Impression: Fatty liver Grade 1, Simple hepatic cyst, Cholelithiasis	Liver: Normal in size and Echo texture. Gall bladder: No visible calculi noted.

repeated burping for the past two months. His condition aggravated on taking spicy foods, non-vegetarian foods and relieved by taking warm water and bland foods.

In Physical examination, tenderness was observed in epigastric and upper right quadrant on palpitation. Negative Murphy's sign observed and vitals are stable. he was recommended for other laboratory investigations. Ultra-sonogram findings revealed that diffuse increase in echotexture in liver and simple cyst with a size of 1.3 cm in segment 2 in the left lobe of the liver and also had calculi in gall bladder largest measuring 8 mm. In Lipid profile and Liver function test cholesterol level was 207mg/dl; Total bilirubin was 2.44mg/dl, and Indirect bilirubin was 1.87 mg/dl. He was diagnosed with Fatty liver –grade 1, simple hepatic cyst and Cholelithiasis. He had no history of alcoholic consumption and his dietary habits included oily and non-vegetarian foods. He was then explained about his condition and treatment procedure to be followed; he was convinced and got admitted in our Inpatient department. In this case the treatment was given in the form of mono diet followed by a liver flush.

He was given apple fruit diet 5 times a day for every 3-hour interval for 10 days. On the 11th day liver flush procedure was followed which included at evening 5 o'clock two tablespoon of Epsom salt mixed in 200 ml of water was given. At 6 o'clock in the evening, 150ml of olive oil and 150 ml of lemon juice were mixed in equal proportions and given 6 times with a gap of 15 minutes and overnight fasting was observed. On the 12th day morning 7' o'clock Enema was given to the patient and advised to take high fibre diet on that day. On subsequent follow up after one-month, Ultra sonogram findings showed healthy liver with normal size

and echo texture, Gall bladder devoid of any calculi. Also, there is a reduction in the cholesterol level from 207 mg/dl to 149 mg, Bilirubin Total from 2.44 to 2.17; Bilirubin Indirect from 1.87 to 1.51. He was also relieved from symptoms.

DISCUSSION

Cholilithiasis or gall stones formed in patients are predominantly crystalline monohydrate and there are rare chances of composition with calcium and other pigmented stones. Imbalance in the cholesterol composition in bile cause precipitation and hardening of cholesterol results in gall stones. Cholesterol Cholelithiasis is primarily a disease of liver rather gall bladder because the lithogenicity of bile is from the liver and not from gall bladder [5]. In this condition, imbalance of cholesterol biosynthesis and defective bile acid formation due to low or relatively low activity of cholesterol 7 α hydroxylase, the rate limiting enzyme for bile acid biosynthesis and cholesterol elimination could result in excessive cholesterol secretion. [6] Non Alcoholic fatty liver disease is mainly occur due to increased accumulation of the triglycerides in liver cells which are formed from the esterification of free fatty acids and glycerols formed within the cell especially free fatty acids and oxidative stress causes cell injury. The abnormal lipid metabolism and NFLD influences further cascade of hepatic diseases such as cirrhosis, fibrosis and even hepatocellular carcinoma [7].

Donnelly *et al.* used a multiple-stable-isotope method, demonstrating that approximately 60% of liver triglyceride content derived from FFA influx from adipose tissue, 26% from DNL, and 15% from diet [8]. Imbalanced lipid

metabolism and oxidative stress are said to be the common cause for these condition.. The total antioxidant activity of apples with the peel was approximately 83 μmol vitamin C equivalents, which means that the antioxidant activity of 100 g apples (about one serving of apple) is equivalent to about 1500 mg of vitamin C. Vitamin C is a powerful antioxidant, It helps to decrease the Cholesterol biosynthesis [9]. Consumption of apple or apple juice expressed the significant improvement in the anti oxidant enzymes in liver especially SOD, GSHPx and hepatic TBARS , general oxidation markers were reduced upto 52% [10].

Aprikian et al. in more recent studies, found that combined apple pectin and apple phenolic fractions lowered plasma and liver cholesterol, triglycerides, and apparent cholesterol absorption to a much greater extent than either apple pectin alone or apple phenolics alone. This work suggests that there is a beneficial interaction between fruit fiber and polyphenolic components and also supports the benefits of eating whole fruits as opposed to dietary supplements [11].

Sies et al. conducted a study showing the effect of liver cleansing regimen on patients which consisted of an intake of apple and vegetable juice without food, followed by the consumption of olive oil and lemon juice over several hours, which resulted in the passage of green, semi-solid stools which was due to the action of gastric lipases on the triacylglycerols that make up olive oil, yielding long chain carboxylic acids, primarily oleic acid. This was followed by the saponification into large insoluble micelles of potassium carboxylates from lemon juice known as soap stones. [12] It helps to flush out the stored sludge in the gall bladder and followed by high fiber diet helps to increase the production of cholecystokinin which increases the gallbladder motility and effective emptying of gallbladder. [12]

CONCLUSION

The result of this case report shows that mono fruit diet followed by liver flush procedure seemed to be a very effective in treating Non-alcoholic fatty liver disease and cholelithiasis. It can act as a conventional therapy for hepatobiliary diseases.

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How to cite this article: Anto P L, Poornachandran P, Narayanasamy M. Application of naturopathy management on non-alcoholic fatty liver and cholelithiasis – A case report. Indian J Integr Med. 4(2)18-20.

Funding: None

Conflict of Interest: None Stated