



**ORIGINAL RESEARCH PAPER**

**Radiology**

**MULTIFOCAL NODULAR LIVER STEATOSIS- A RARE METASTASIS MIMICKER BENIGN DISORDER**

**KEY WORDS:** Hepatic metastasis mimicker, hepatic steatosis, pseudotumours, fatty liver disease

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**ABSTRACT**

Fatty liver disease (alcoholic and non alcoholic) is a common pathology of benign nature. our case was a suspect of metastasis of liver. Following further investigations, diagnosis of Multifocal nodular liver steatosis was made. Subsequent histological examination diagnosis was confirmed. Multifocal liver steatosis is a pathology that need to be differentiated from multiple nodular liver lesion.

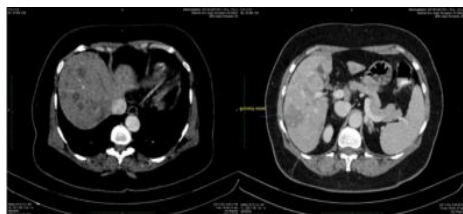
**Introduction**

Non alcoholic fatty liver disease is an increasing concern worldwide, there is gradual increase in its prevalence. There is many associated systemic diseases related with this, mainly diabetes, metabolic syndrome and hemochromatosis. Fatty liver disease mainly has diffuse pattern of involvement. Sometime it effect liver inform of multiple nodular lesions known as Multifocal nodular liver steatosis. It is a close mimicker of metastasis. But advance imaging techniques are key for correct diagnosis.

**Case report**

A 55 year old female patient came to hospital with abdominal discomfort since few days. Clinical examination of patient was normal. Blood investigation including liver function and tumour marker (carcinoembriogenic antigen, CA 19-9 and AFP) were normal. Further abdominal ultrasound was performed which reveal multiple well defined to ill defined hyperechoic lesion in liver mimicking metastatic lesion. Ultrasound reveal no other abnormalities, For further evaluation Triple phase CT abdomen and pelvis and MRI abdomen performed. On CT, Liver shows multiple well defined hypodense lesion in liver on plain study, which remains hypodense to liver in all phase but shows similar level contrast enhancement to normal liver parenchyma.

There was a striking feature present- Traversing vessels through lesion, No mass effect on vessels inform form of displacement



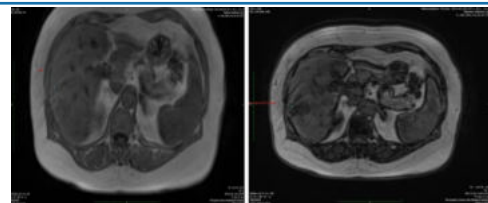
**Figure 1 CT findings**

**On contrast MRI,**

Liver shows multiple well defined lesion which appears bright on T2 images. Lesion do not invade nor displaces adjacent liver vessels. Lesion do not show abnormal high or low enhancement following IV gadolinium contrast injection.

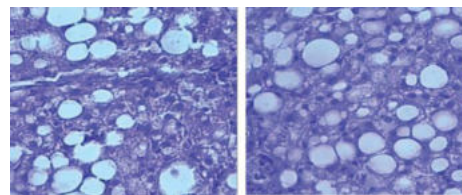
**On Chemical shift imaging,**

This nodular lesions were hyperintense on T1W images and shows signal drop (hypointensity) in OUT phase. This finding leads to confirmation of intracellular lipid content. At the end diagnosis of multifocal hepatic steatosis was made.



**Figure 2 MRI Findings**

After USG guided liver biopsy, On histopathological examination, show fat globules accumulation intracellularly with some area of periportal inflammation with few area of focal fibrosis.



**Figure 3 histopathological findings**

**Discussion**

Fatty liver is due to accumulation of abnormal lipid in hepatocyte. It is a benign entity, however the risk of developing fibrosis and cirrhosis increases because of inflammation. It is one of the routine finding in routine ultrasound of abdomen. A rare form of it, multinodular hepatic steatosis needs to be differentiated from metastatic liver disease or pseudotumours. Major component of these deposited fat are TGA and contribution from other form of cholesterol. These deposition of lipid is due to more synthesis than utilization of intracellular lipid.

Majority of patient are asymptomatic. In some, clinical symptoms are manifestations of metabolic syndrome, such as obesity, Diabetes mellitus, metabolism, dyslipidemia and arterial hypertension. The pathophysiology of multifocal liver steatosis is complex and till date we are not able to completely formulate exact causation and its molecular level consequence. Many factors like accumulation of toxins and tissue hypoxia due various aetiology are possible causes.

Multifocal nodular liver steatosis usually presents as multiple hyperechoic lesion on USG which on CT appears as multiple hypodense lesions, similarly to metastatic disease but lack of invasion or displacement of vessels are against metastasis. MRI is the most useful diagnostic tool in these cases. On MRI, due to high fat content it will appears as hyperintense lesions

on T1W and T2W images. For confirmation of intracellular fat chemical shift imaging (CSI) is highly diagnostic which shows single drop in OUT phase images. There is similar enhancement to normal liver parenchyma, MRI with signal drop on out-of-phase sequence compared with in-phase sequence are very helpful for confirming intracellular lipid content in these liver lesions. Contrast-enhanced ultrasound may add diagnostic value as compared to non contrast ultrasound. There is no need for liver biopsy, but it remains gold standard. It will show fat globules accumulation intracellularly with some area of periportal inflammation with few area of focal fibrosis.

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