

# “Unravelling the Enigma: A Case Study of Nodular Regenerative Hyperplasia Detected by Liver Ultrasonography”

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## ABSTRACT

Liver ultrasonography is a common imaging modality used for the evaluation of hepatic pathologies. However, certain rare presentations can pose diagnostic challenges. A rare case study of Nodular Regenerative Hyperplasia detected by USG unravelling the enigma.

## Case Presentation

A 45-year-old male presented to the gastroenterology clinic with complaints of vague abdominal discomfort and intermittent episodes of nausea. His medical history was unremarkable, with no history of liver disease or significant alcohol consumption. Laboratory investigations, including liver function tests, were within normal limits. However, abdominal ultrasonography revealed an unusual finding in the liver:

## Ultrasonographic Findings

The liver appeared enlarged with heterogeneous echotexture, and multiple hypoechoic nodules were scattered throughout the hepatic parenchyma. These nodules varied in size from 1 to 3 centimetres and demonstrated irregular borders. Colour Doppler imaging showed

minimal vascularity within the nodules. Additionally, there was evidence of mild periportal fibrosis noted on ultrasound elastography.

## Diagnostic Evaluation

Given the atypical presentation on ultrasound, further diagnostic workup was pursued. Contrast-enhanced computed tomography (CT) of the abdomen was performed, which revealed similar findings with no evidence of focal hepatic lesions or vascular abnormalities. Serological tests for viral hepatitis, autoimmune markers, and tumour markers were all negative. A liver biopsy was subsequently performed for histopathological correlation [1-4].

## Histopathological Findings

Liver biopsy revealed diffuse nodular regenerative hyperplasia (NRH) with mild fibrosis. There were no features suggestive of cir-

rhosis, malignancy, or specific inflammatory processes. Immunohistochemical staining for vascular endothelial growth factor (VEGF) was negative, ruling out angiogenic aetiology [5-8].

### Clinical Outcome

The patient was managed conservatively with close monitoring of liver function tests and periodic imaging studies. He remained asymptomatic during the follow-up period, with no evidence of disease progression or development of complications related to NRH.

### Conclusion

NRH is a rare vascular disorder characterized by diffuse transformation of the hepatic parenchyma into small regenerative nodules, often associated with various systemic conditions or medications. This case underscores the importance of considering uncommon aetiologies in the differential diagnosis of liver abnormalities detected on ultrasonography, necessitating a multidisciplinary approach for accurate diagnosis and management.

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