

# Unusual Histological Discovery: Liver Biopsy Case Report

Keshmoni Navya\*

Department of Pharmacy, Jawaharlal Nehru Technological University, Hyderabad, Telangana, India

## Abstract

Histological analysis is a crucial field in medicine, focusing on the examination of tissues and organ structures at the microscopic level. Its significance lies in aiding the diagnosis and treatment of various medical conditions. In this context, we introduce a patient case in which a liver biopsy unveiled an exceptionally uncommon histological observation.

**Keywords:** Histology • Diagnosis • Tissue science

## Introduction

A liver biopsy is a medical procedure performed to extract a minute sample of liver tissue for microscopic scrutiny. This diagnostic technique is instrumental in assessing an array of liver conditions, including hepatitis, cirrhosis, and liver cancer. The process entails the insertion of a slender needle through the skin into the liver, followed by the retrieval of a small tissue specimen [1].

## Literature Review

A 52-year-old male patient presented to our hospital with abdominal pain and jaundice. His medical history included hepatitis C infection and a history of alcohol abuse. Physical examination revealed hepatomegaly and jaundice. Laboratory tests showed elevated liver enzymes, bilirubin, and INR levels. An ultrasound examination indicated multiple hepatic nodules, prompting the performance of a liver biopsy for further evaluation [2].

## Liver biopsy indications

Liver biopsy may be recommended for patients with elevated liver enzymes, abnormal liver function tests, or suspected liver diseases, such as: Chronic hepatitis B or C, non-alcoholic fatty liver disease, alcoholic liver disease, autoimmune liver diseases like autoimmune hepatitis or primary biliary cholangitis.

Genetic liver conditions such as hemochromatosis or Wilson's disease: Cirrhosis, liver cancer, liver Biopsy Contraindications. While generally safe, liver biopsy may not be suitable in certain cases, including: Blood clotting disorders or anticoagulant use, ascites (abdominal fluid accumulation), severe obesity, uncontrolled hypertension or heart failure, active infections like hepatitis A, B, or C, allergies to local anesthetics or medications used during the procedure, pregnancy.

The procedure is typically performed on an outpatient basis. Beforehand, patients may be asked to fast, undergo a physical exam, blood tests, and imaging studies to assess liver location and potential risks [3,4]. During the procedure, the patient lies on their back, and the physician administers a local

anesthetic to numb the area. A small incision may be made, or a needle is inserted through the skin into the liver to obtain a tissue sample. The entire procedure usually takes less than an hour.

## Risks and complications

Although generally safe, liver biopsy carries some risks, including: Bleeding, pain at the biopsy site, infection, accidental puncture of other organs or structures, such as the lung or gallbladder. Afterward, patients may need to rest on their right side for several hours to prevent bleeding. Strenuous activity and heavy lifting should be avoided for several days, following any specific instructions provided by their physician [5].

Microscopic examination of the liver biopsy specimen revealed multiple nodules composed of sheets of neoplastic cells with clear cytoplasm and centrally located nuclei. The tumor cells were arranged in a trabecular pattern with occasional pseudo-acinar formations. No evidence of mitotic activity, necrosis, or inflammation was observed. Immunohistochemical analysis confirmed that the tumor cells were positive for cytokeratin 7 and negative for cytokeratin 20, CD10, and HepPar-1. Based on the histopathological and immunohistochemical findings, a diagnosis of hepatocellular carcinoma (HCC) with a clear cell variant was established. The clear cell variant of HCC is an uncommon histological subtype characterized by neoplastic cells with abundant clear cytoplasm, which can be mistaken for other clear cell tumors like renal cell carcinoma or metastatic clear cell carcinoma.

## Discussion

Hepatocellular Carcinoma (HCC) stands as the predominant form of primary liver cancer, representing about 75-85% of total instances. It typically develops within the context of chronic liver conditions like hepatitis B or C infection, alcoholic liver disease, or non-alcoholic fatty liver disease. The clear cell variant of HCC is a less common subtype, constituting less than 5% of cases. This variant is linked to a graver prognosis than conventional HCC, as it exhibits a heightened likelihood of vascular invasion and recurrence [6].

## Conclusion

Medical histology assumes a pivotal role in the identification and treatment of an extensive array of medical conditions, including liver cancer. The clear cell variant of hepatocellular carcinoma (HCC), though infrequent, presents a diagnostic challenge while bearing substantial prognostic significance. To ensure precise diagnosis and optimal patient care in liver cancer cases, maintaining a high level of suspicion and conducting meticulous histological examinations, complemented by pertinent immunohistochemical assessments, are imperative. In summary, liver biopsy remains a vital diagnostic instrument for the assessment of various liver ailments. While generally safe, it warrants a thorough evaluation of potential risks and complications. Through judicious patient selection and careful procedural execution, liver biopsy serves as an

\*Address for Correspondence: Keshmoni Navya, Department of Pharmacy, Jawaharlal Nehru Technological University, Hyderabad, Telangana, India, E-mail: navya-k@gmail.com

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invaluable resource for the diagnosis and therapeutic management of liver diseases.

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## Conflict of Interest

None.

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