

Case Report: A Rare Histological Finding in a Case of Liver Biopsy

Keshmoni Navya*

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

Abstract

Medical histology is the study of the microscopic structure of tissues and organs in the body. It plays a critical role in the diagnosis and management of a wide range of medical conditions. Here, we present a case of a patient who underwent a liver biopsy, which revealed a rare histological finding.

Keywords: Histology • Diagnosis • Tissue Science

Introduction

Liver biopsy is a procedure that involves obtaining a small sample of liver tissue for microscopic examination. It is a diagnostic tool used to evaluate various liver diseases, such as hepatitis, cirrhosis, and liver cancer. The procedure involves inserting a thin needle through the skin and into the liver, and then withdrawing a small tissue sample [1].

Case Presentation

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

Indications for liver biopsy

Liver biopsy may be indicated in patients with elevated liver enzymes, abnormal liver function tests, or suspected liver disease. It can help diagnose a wide range of liver disorders, such as:

- Chronic hepatitis B or C
- Non-alcoholic fatty liver disease (NAFLD)
- Alcoholic liver disease
- Autoimmune liver diseases, such as autoimmune hepatitis or primary biliary cholangitis
- Genetic liver diseases, such as hemochromatosis or Wilson's disease
- Cirrhosis
- Liver cancer

Contraindications for liver biopsy

***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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Liver biopsy is generally a safe procedure, but it may not be recommended in some cases, such as:

- Blood clotting disorders or anticoagulant use
- Ascites (fluid accumulation in the abdomen)
- Severe obesity
- Uncontrolled hypertension or heart failure
- Active infections, such as hepatitis A, B, or C
- Allergies to local anesthetics or medications used during the procedure
- Pregnancy

Liver biopsy can be performed as an outpatient procedure. Before the procedure, the patient may be asked to fast for several hours, and the physician may perform a physical exam, blood tests, and imaging studies to determine the location of the liver and identify any potential risks.

During the procedure, the patient will lie on their back, and the physician will clean the skin over the liver and inject a local anesthetic to numb the area. A small incision may be made, or a needle may be inserted through the skin and into the liver to obtain a tissue sample. The entire procedure usually takes less than an hour [3,4].

Risks and complications

Liver biopsy is generally a safe procedure, but like any medical procedure, it carries some risks, such as:

- Bleeding
- Pain at the biopsy site
- Infection
- Puncture of other organs or structures, such as the lung or gallbladder
- Rarely, death

After the procedure, the patient may need to lie on their right side for several hours to prevent bleeding. They should avoid strenuous activity and heavy lifting for several days and follow any specific instructions provided by their physician [5].

Histopathological examination

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. There was no evidence of mitotic activity, necrosis, or inflammation. Immunohistochemical analysis revealed that the tumor cells were positive for cytokeratin 7 and negative for cytokeratin 20, CD10, and HepPar-1.

Diagnosis

Based on the histopathological and immunohistochemical findings, a diagnosis of hepatocellular carcinoma (HCC) with clear cell variant was made. The clear cell variant of HCC is a rare histological subtype characterized by neoplastic cells with abundant clear cytoplasm, which can be mistaken for other clear cell tumors such as renal cell carcinoma or metastatic clear cell carcinoma.

Discussion

HCC is the most common primary liver cancer, accounting for approximately 75-85% of all cases. It typically arises in the setting of chronic liver disease, such as hepatitis B or C infection, alcoholic liver disease, or non-alcoholic fatty liver disease. The clear cell variant of HCC is a rare subtype, accounting for less than 5% of all cases. It is associated with a poorer prognosis than conventional HCC, with a higher propensity for vascular invasion and recurrence [6].

Conclusion

Medical histology plays a crucial role in the diagnosis and management of a wide range of medical conditions, including liver cancer. The clear cell variant of HCC is a rare histological subtype that can be challenging to diagnose but has important prognostic implications. A high degree of suspicion and careful histological examination, combined with appropriate immunohistochemical testing, are essential for accurate diagnosis and optimal management of patients with liver cancer. In conclusion, liver biopsy is an important diagnostic tool used to evaluate various liver diseases. It is generally a safe procedure,

but potential risks and complications should be carefully considered before performing the procedure. With appropriate patient selection and careful technique, liver biopsy can provide valuable information for the diagnosis and management of liver disease.

Acknowledgement

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Conflict of Interest

None.

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