A Case Of Immediate Hepatitis C Infection Leading To Cholestatic Hepatitis With Significant Viremia After Liver Transplantation

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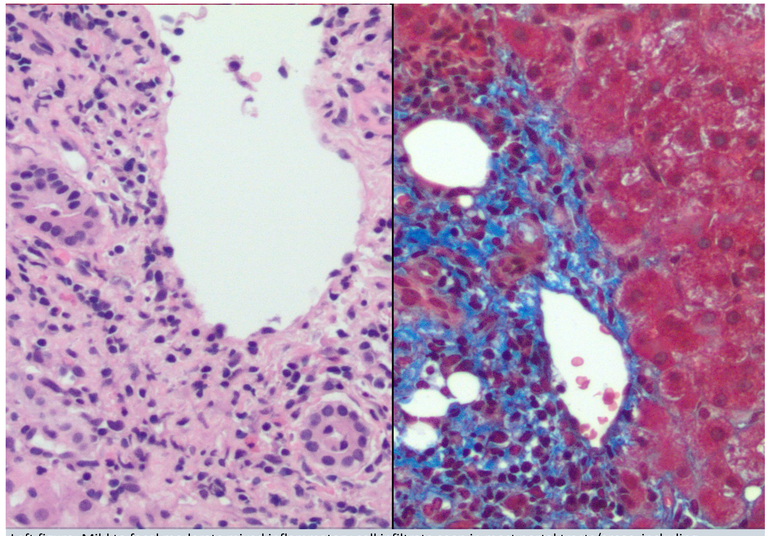
❖ Introduction:

- With the success of direct active antiviral therapy (DAA), organs from Hepatitis-C (HCV) positive donors can be used for transplant in HCV-negative (HCV-) recipients with excellent graft survival and post-transplant course.
- This has expanded the donor pool to meet the accelerating need of liver transplantation in the United States.
- In trials involving HCV- recipients and HCV+ donors, up to 100% of the recipients achieved sustained virologic response using DAA therapy.
- However, the risk of HCV infection and subsequent hepatitis remained in certain patients.



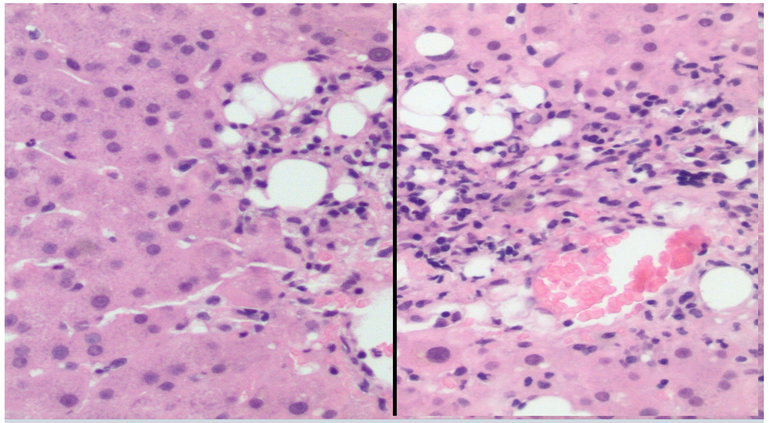
Left figure: Mild to focal moderate mixed inflammatory cell infiltrate seen in most portal tracts/areas, including neutrophils, mononuclear, eosinophils, and plasma cells, associated with scattered interface hepatitis. Focal endotheliitis is evidenced by inflammatory cells undermining the endothelial cells. Interlobular bile duct injury is focal and mild. Feature of Mild acute cellular rejection. Right Figure: Trichrome stain shows no delicate periportal strands of "chicken wire" like pericellular fibrosis; an early fibrosing cholestatic hepatitis was still under consideration.

❖ Case Description:

- We present a case of a 55-year-old male with a medical history of atrial fibrillation and hepatic cirrhosis secondary to primary biliary cholangitis, complicated by hepatocellular carcinoma.
- Pre-operative HCV antibody (ab) and RNA tests were negative for the recipient.
- He underwent successful orthotopic liver transplantation from a deceased donor that was HCV+.
- The post-transplantation course was complicated by undifferentiated shock, requiring vasopressors postoperative day (POD) 1, acute renal failure requiring dialysis POD 14, and persistent ascites complicated by multi-organism peritonitis
- On POD 5, the patient had worsening hyperbilirubinemia, with a peak total bilirubin of 25.6 mg/dL on POD 12.
- A liver biopsy suggested mild acute cellular rejection but not fibrosing cholestatic hepatitis (FCH), which was inconsistent with the degree of hyperbilirubinemia.
- Histology revealed peri-portal lipogranulomas that are sometimes seen with early HCV-induced liver injury.
- The HCV RNA load was 25,863,636 IU/mL POD 7.
- The patient was started on Sofosbuvir / Velpatasvir for the treatment of HCV on POD 9.
- There was an improvement in HCV viral load (3,097 IU/mL POD 16), hyperbilirubinemia, and well shock.`

❖ Discussion:

- Acute HCV infection is rare and usually asymptomatic in immunocompetent patients; hence evidence regarding histologic appearance is limited.
- In post-transplant patients, HCV activation can mimic acute cellular rejection on pathology.
- It is recommended to start DAA within the first 7-14 days after clinical stability is achieved.
- Since the genotype of HCV from the donor is not routinely evaluated, it is recommended to use a pan-genotypic regimen (Glecaprevir/Pibrentasvir or Sofosbuvir/Velpatasvi).
- FCH is an important differential, but our patient did not have hepatitis C prior to the transplant, characteristic histopathologic findings, or a time course of more than 1 month after transplant as seen in FCH.



Some lipogranulomas are shown in portal tracts (left). In addition, hepatocyte focal necrosis evidenced by hepatocyte dropout and replaced with mononuclear cells and macrophages mixed with lipogranulomas are identified in the lobule (right). No dense lymphoid aggregate was identified, a typical feature for HCV. An unusual finding in acute cellular rejection, points to the recurrent HCV infection.