World Journal of Hepatology 42670

Acute Portal Vein Thrombosis After Liver Transplant Presenting with Subtle Ultrasound Abnormalities: A Case Report

All new additions to the manuscript have been underlined.

Reviewers' Comments to Author:

Reviewer #1: The article is well-written, interesting and informative, and deserved to be known to the area of liver transplantation.

Thank you for your comment.

Reviewer #2: Enjoyed reading this manuscript and my comments are as follows: 1. 1st reported case of acute PVT diagnosed in a post-liver transplant recipient 2. Important if this finding holds true as PVT can be difficult to diagnose in a post-op LT patient. 3. Did authors review their LT patients with diagnosis of PVT and determine whether this finding was noted previously? ie.need a denomitor. I am concerned this may be a chance finding which is not reproducible but if taken out of context may lead to confusion and diagnostic uncertainty.

Thank you for your critique. We agree with your assertion that diagnosing PVT in a post-operative LT patient is difficult, particularly with ultrasound, and we hypothesized in our manuscript that in this particular case that arterial anastomotic edema may have possibly contributed to the lack of frank thrombus seen in the portal vein. We also agree that it would be beneficial to review our LT patients and determine if PVT had been diagnosed post-operatively; unfortunately, to undertake this research would involve conducting a new research study, along with IRB approval. The seven days allowed for revision of the manuscript precludes this investigation. In our manuscript (1st paragraph of the Discussion), however, we reported incidence rates of PVT post-LT, which we believe more accurately reflects how often PVT post-LT occurs: Reports of acute PVT post-LT typically state an incidence rate of 1-3%, however one case series of adult and pediatric patients documented an incidence of 5.7%[2–4]. *Because of this incidence, we believe that while uncommon, PVT post-LT is a condition that providers caring for LT patients must be aware of, know how to diagnose, and understand the limitations of ultrasound for its detection, given that graft failure and re-transplantation have occurred due to it.*

Reviewer #3: The manuscript entitled "Acute Portal Vein Thrombosis After Liver Transplant Presenting with Subtle Ultrasound Abnormalities: A Case Report" is well presented. In this study, the authors have presented a case with portal vein thrombosis after liver transplantation. This is an important issue to be considered in order to ensure its early diagnose and treatment. Generally, it is a very in depth study, well written and well organized. Minor degree of language polishing is required. More recent studies regarding portal vein thrombosis, published during the period 2016-18, is better to be included in the manuscript.

Thank you for your suggestions. We have included further references from more recent studies regarding portal vein thrombosis, with information on prevalence, classification, and risk factors (please see References, citations 6-11, five of which are from 2017-2018).

Reviewer #4: Couri et al. presented a case with Acute portal vein thrombosis (PVT) after liver transplant. The case is interesting. I have some questions and comments; 1- Did you investigated inherited risk factors for acute PVT? 2-Did you investigated CMV serology? 3-Updating discussion part with recent reports about acute PVT would be usefull. Thank you for giving opportunity to review your report.

Thank you for your critiques. Unfortunately, the patient was not tested for inherited risk factors for PVT. This may have been because the PVT was presumed to have been secondary to the hypercoagulable state of surgery, and because liver transplantation is a known risk factor for PVT. Testing for inherited genetic defects would have been useful in this patient to determine if she or her family members would potentially need lifelong anticoagulation. We added the following to the text, in the second paragraph of the discussion: Risk factors for PVT include hypercoagulable states (such as malignancy or genetic defects), LT, increased portal vein resistance, and decreased portal vein flow. *We also added the following to the Discussion, paragraph 5:* While no inherited hypercoagulability testing was done for this patient as her PVT was presumed to be secondary to the hypercoagulable state of surgery and because LT is a known risk factor for PVT, case reports exist documenting PVT in the setting of acute CMV infection in immunocompromised and immunocompetent patients, likely due to local inflammation and the development of anti-phospholipid antibodies (15–19).

One week before transplant, as part of her expedited transplant workup, she was tested for CMV, and her serologies were IgG positive but IgM negative. We have added the following to the text, in the Case Report section, paragraphs 2 and 3: She was cytomegalovirus (CMV) IgG positive but IgM negative. *And* she received a CMV donor positive deceased donor orthotopic liver transplant. *In addition, we investigated further the relationship between CMV and PVT and found several case reports documenting this association. We have included the following in the Discussion, paragraph 5:* While no inherited hypercoagulability testing was done for this patient as her PVT was presumed to be secondary to the hypercoagulable state of surgery and because LT is a known risk factor for PVT, case reports exist documenting PVT in the setting of acute

CMV infection in immunocompromised and immunocompetent patients, likely due to local inflammation and the development of anti-phospholipid antibodies (15–19). Although pre-LT testing confirmed that the patient was not actively infected with CMV and had immunity, the donor was CMV IgG positive. Transplant providers should be aware of the association between PVT and CMV, particularly in CMV donor positive/recipient negative patients and in the setting of immunosuppression.

We have updated the discussion with further references from more recent studies regarding portal vein thrombosis (please see References, citations 6-11, five of which are from 2017-2018). We have also included five references regarding the association between CMV and PVT—please see citations 15-19.