Journal of Comprehensive Clinical Practice
An official Journal of **Vivekananda Polyclinic and Institute of Medical Sciences,** Lucknow, UP, India

CASE REPORT

Unusual Imaging findings in a Child with Acute Hepatitis A Infection

Minakshi Ngairangbam[1*], Vaishali Upadhyaya[1], Taruna Vijaywargiya[2]

[1]Department of Radiodiagnosis, Vivekananda Polyclinic & Institute of Medical Sciences, Lucknow, UP, India
[2]Department of Pediatrics,, Vivekananda Polyclinic & Institute of Medical Sciences, Lucknow, UP, India

Abstract

Hepatitis A infection in children generally presents with mild, self-limiting symptoms. Extrahepatic manifestations, such as acute renal injury, are rarely reported in non-fulminant Hepatitis A. We present a case of a 14-years-old girl with non-fulminant Hepatitis A infection, who was incidentally detected with a left adnexal mass during routine ultrasound imaging. Further evaluation with MRI unexpectedly revealed findings suggestive of acute pyelonephritis, contrary to the typical presentation of Hepatitis A.

ARTICLE INFO

***Correspondence:**
Minakshi Ngairangbam
minakshing3@gmail.com

Dates:
Published: 30-12-2024

Keywords:
Hepatitis A, Extrahepatic manifestations, Acute Pyelonephritis, Ovarian torsion, Spontaneous detorsion

Conflict of Interest:
The authors have no conflict of interest

How to Cite:
Ngairangbam M, Upadhyaya V, Vijaywargiya T. Unusual Imaging findings in a Child with Acute Hepatitis A Infection. Journal of Comprehensive Clinical Practice. 2024;18(2): 73-75

Introduction

Hepatitis A infection typically manifests with mild symptoms in young children. However, older children may occasionally present with more severe and atypical manifestations, including fulminant Hepatitis, relapsing Hepatitis, acalculous cholecystitis, pancreatitis, and rare extrahepatic manifestations such as urticaria, maculopapular rash, acute kidney injury, cutaneous vasculitis, arthritis, autoimmune hemolytic anemia, and cryoglobulinemia.[1] Although acute renal failure is not uncommon in fulminant Hepatitis, it is exceedingly rare in non-fulminant Hepatitis.[2] To date, approximately 51 cases of acute renal failure associated with non-fulminant Hepatitis A have been reported in the literature.[3] Here, we report a case of a child with acute non-fulminant Hepatitis A infection, associated with pyelonephritis and a coincidentally detected left adnexal mass.

Case Report

A 14-years-old girl presented to the pediatric outpatient department with fever, abdominal pain, jaundice, and dark urine. Blood tests showed elevated liver enzymes, conjugated hyperbilirubinemia, and positive IgM anti-HAV antibodies (Table 1). An abdominal ultrasound revealed mild hepatomegaly, edematous gallbladder walls, moderate ascites, and mild bilateral pleural effusion. Additionally, a heterogeneous lesion in the left adnexa was noted, prompting further evaluation with MRI.

MRI of the abdomen confirmed the ultrasound findings and further revealed patchy T2 hyperintense regions with restricted diffusion extending from the

©Authors, 2024. **Open Access** This article is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International (CC BY-NC-SA 4.0) License, which allows users to download and share the article for non-commercial purposes, so long as the article is reproduced in the whole without changes, and the original authorship is acknowledged. If you remix, transform, or build upon the material, you must distribute your contributions under the same license as the original. If your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this licence, visit https://creativecommons.org/licenses/by-nc-sa/4.0/

Table 1. Laboratory values at the time of admission & follow up 4 weeks after discharge

Lab parameters	Results at the time of admission	Results during follow up 4 weeks after discharge	Reference values
Haemoglobin	11 gm/dL	11	12-15 gm/dL
TLC	9840	8900	4000-11000
DLC	76/20/01/03	50/42/06/02	
SGPT	954	48	0–45 U/L
SGOT	304	45	0–31 U/L
S.Bilirubin T/D/I	6.89/4.62/2.27	0.96/0.35/0.61	0.3-1.2/<0.5/<O.8 mg/dL
Alk Phosp.	372	189	38-126 IU/L
PT/INR	14.2/1.03	N/A	12.60–15.11/0.964–1.176
Anti HAV IgM	12.20	N/A	Reactive>1.20
S. Creatinine	0.49	0.48	0.51–0.95 mg/dL
Blood Urea	18	10	17–55 mg/dL
Urine pus cells	2-3/HPF	N/A	0–5/HPF

N/A: Not assessed

cortex to the medulla alternating with normal parenchyma in bilateral kidneys. These findings were consistent with acute pyelonephritis. We ruled out acute infarct as infarct appears more wedge shaped and there was no associated renal arterial or venous abnormality in our case. Serum creatinine was however normal, indicating early stages of renal involvement. Urine microscopy subsequently performed to rule out possible bacterial etiology for pyelonephritis yielded negative results. These findings of pyelonephritis in our patient were therefore attributed to the ongoing Hepatitis A infection. The left adnexal lesion was identified as an enlarged ovary with peripherally displaced follicles with internal stromal hemorrhage showing partially restricted diffusion. Furthermore, it was displaced medially and located anterior to the uterus. All these features were suggestive of ovarian torsion. However, the patient showed no symptoms clinically suggesting torsion. She was therefore advised for a follow up ultrasound examination.

Our incidental MRI finding of pyelonephritis significantly altered the treatment trajectory as the patient was managed with a 3rd generation cephalosporin extending up to a period of 14-days, which usually has a therapy duration of 3-5 days in isolated severe Hepatitis cases without pyelonephritis.

On follow-up examination 1-month later, the patient had complete remission of symptoms with near normal lab parameters (Table 1) and normal ultrasound appearance of both ovaries, suggesting the possibility of spontaneous detorsion, a rare phenomenon documented in the literature.

Discussion

Acute Hepatitis A infection usually has a short, benign, and self-limiting course.[4] Typical presentations include an asymptomatic form seen in children less than 5-years and a symptomatic form in relatively older children and adults, characterized by malaise, fatigue, and icteric Hepatitis.[5] Very rarely, non-fulminant Hepatitis A has led to extrahepatic manifestations like acute kidney injury. Several mechanisms have been postulated in the pathogenesis of renal injury in such settings. These include: 1. Insufficiency of renal blood flow due to developing endotoxemia or cryoglobulinemia; 2. Glomerulonephritis or interstitial nephritis due to immune complexes; and 3. Acute tubular necrosis due to the direct cytopathic effect of the virus or due to immune complexes.[6] Our case underscores the importance of a comprehensive workup in uncovering renal complications, which are often overlooked due to their rarity in the context of

Hepatitis A, and prompts further research into the immunological and pathological interplay between Hepatitis A and the development of pyelonephritis.

This case also highlights the need for further research into spontaneous ovarian detorsion, as current literature on this phenomenon is extremely limited. This would contribute to the optimization of management approaches, leading to safer strategies that avoid unnecessary surgical interventions and focus on the preservation of ovarian function while simultaneously preventing recurrence.

Conclusion

Although renal involvement associated with Hepatitis A virus (HAV) is rare and has been reported in only a few cases, vigilant monitoring of renal function is warranted even in non-fulminant Hepatitis A. This approach is essential to accurately assess the incidence of renal complications, enabling early detection and treatment.

References

1. Amarapurkar DN, Amarapurkar AD. Extrahepatic manifestations of viral Hepatitis. Ann Hepatol. 2002;1(4):192-5.
2. Eng C, Chopra S. Acute renal failure in nonfulminant Hepatitis A. J Clin Gastroenterol. 1990;12(6):717-8.
3. Oe S, Shibata M, Miyagawa K, Honma Y, Hiura M, Abe S, et al. Hepatitis A complicated with acute renal failure and high hepatocyte growth factor: A case report. World J Gastroenterol. 2015;21:9671-4.
4. Muñoz-Martínez SG, Díaz-Hernández HA, Suárez-Flores D, Sánchez-Ávila JF, Gamboa-Domínguez A, García-Juárez I, et al. Atypical manifestations of Hepatitis A virus infection. Rev Gastroenterol Mex (Engl Ed). 2018;83:134-43.
5. Leadnar WM, Lemon SM, Kirkpatrick JW, Redfield RR, Fields ML, Kelley PW. Frequency of illness associated with epidemic Hepatitis and virus infection in adults. Am J Epidemiol. 1985;122:226-33.
6. Yasar B, Akbayir N, Celik S, Ozgil D, Akkan Z, Yildiz K, et al. Acute oligo-anuric renal failure during the course of non-fulminant Hepatitis A in a patient with anorexia nervosa. Turk J Gastroenterol. 2002;13:164-75.