A Rare Hepatobiliary Manifestation of a Common Opportunistic Gastrointestinal Infection

Jordan Malone, DO[1]; Giri Movva, MS4[3]; Anni Chowdhury, DO[1]; Nikita Prasad, MD[1]; Jaison S. John, MD[2], Manav Sharma, MD[2]

1. Department of Internal Medicine, The University of Texas Medical Branch
2. Department of Gastroenterology and Hepatology, The University of Texas Medical Branch
3. The University of Texas Medical Branch, School of Medicine

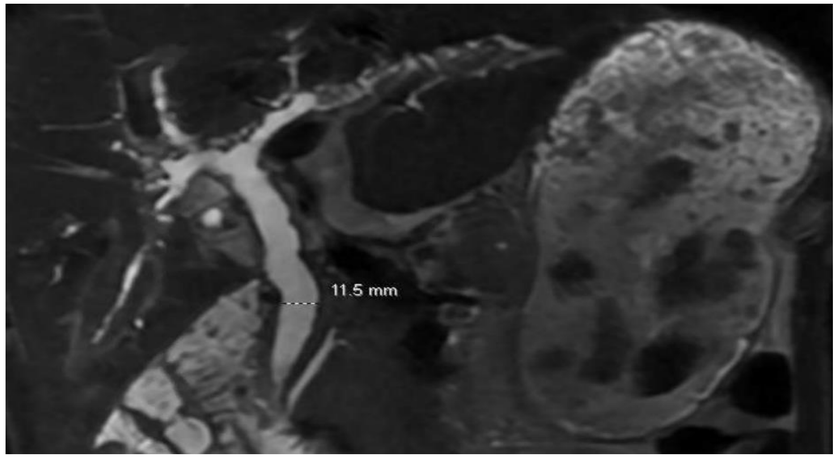
Background

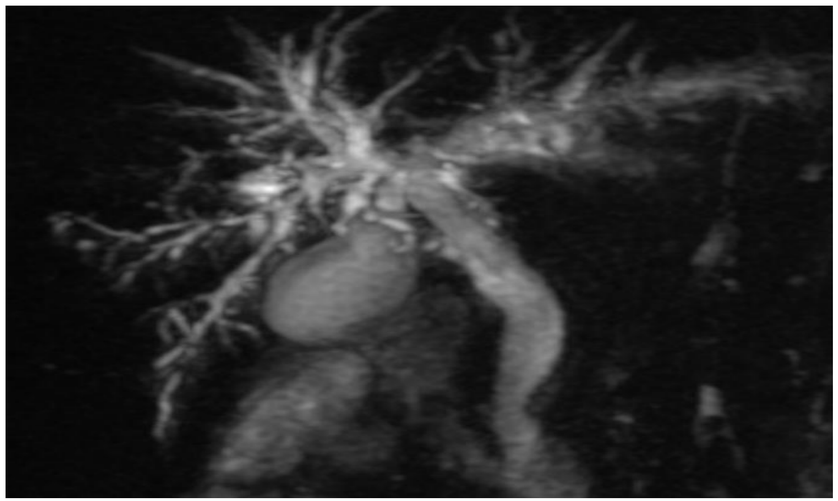
- AIDS cholangiopathy is a rare biliary tract syndrome seen in AIDS patients primarily with CD4 counts less than 100 cells/microliter[1].
- It commonly manifests as multiple biliary strictures secondary to chronic inflammation. This is caused by one or more opportunistic infectious pathogens with *Cryptosporidium parvum* being isolated in most cases[2-5].
- Overall incidence is currently unknown but has decreased since initiation of potent ART in the mid-1990s[6].
- Here we describe a case of a 29-year-old male with newly diagnosed AIDS who presented with months of gradually worsening abdominal pain and diarrhea.

Case Description

- A 29-year-old African American male with a past medical history of recently diagnosed HIV/AIDS and a history of treated syphilis presented with 6 months of chronic diarrhea associated with persistent right upper quadrant abdominal pain.
- Physical examination on admission was significant for a cachectic male with severe tenderness to palpation in the right upper abdominal quadrant with a positive Murphy sign.
- Lab work revealed ALP 275 U/L, ALT 74, AST 93 with normal total bilirubin, CD4 count 68, fecal calprotectin 142, and lipase 467.
- Fecal pathogens were positive for Enteroaggregative *E. coli* and *Cryptosporidium parvum*. Imaging revealed extensive hepatobiliary distension with gallbladder wall thickening.
- MRCP showed dilated intra- and extrahepatic biliary ducts with scattered microabscesses, multiple small filling defects within the CBD, and filling defects within the gallbladder lumen. (Images 1,2)
- AIDS-related cholangiopathy with concurrent *C. parvum* diarrhea was diagnosed; treatment with nitazoxanide and ciprofloxacin was started following initiation of ART.
- ERCP was deferred given patients immunocompromised state and his improvement on medical therapy alone without evidence of biliary obstruction.

Imaging





Images 1 & 2: Dilated intra and extrahepatic biliary ducts with enhancing thickened wall associated with scattered microabscesses consistent with cholangitis. No stricture to explain biliary ductal dilatation.

Discussion

- The two most common pathogens associated with AIDS cholangiopathy are *Cryptosporidium parvum* and *Cytomegalovirus*[2-5].
- Typical clinical presentation: RUQ/epigastric pain with diarrhea.
- Fever and jaundice secondary to obstruction is much less frequent (10-20%)[2-5].
- Cholestatic pattern of liver injury is typical.
- 23% of patients with cryptosporidium diarrhea developed biliary tract disease in a study of 95 AIDS patients[5].
- Biliary strictures seen in AIDS-related cholangiopathy may resemble primary sclerosing cholangitis, but segmental extrahepatic strictures are characteristic of this AIDS-related disorder[8].
- ERCP is often necessary to relieve any biliary strictures that predispose to obstruction but in this case, symptomatology improved with medical management of infection alone.
- This case highlights the importance of recognition of this rare AIDS-related syndrome and prompt GI service evaluation. This cholangiopathy is not seen in other immunocompromised cohorts such as transplant patients[9].
- Proper imaging with MRCP and consideration of ERCP to relieve strictures if obstruction is suspected is crucial in management.

References

1. Bouche H, Housset C, Dumont JL, Carnot F, Menu Y, Aveline B, Belghiti J, Boboc B, Erlinger S, Berthelot P, et al. AIDS-related cholangitis: diagnostic features and course in 15 patients. J Hepatol. 1993 Jan;17(1):34-9. doi: 10.1016/s0168-8278(05)80518-5. PMID: 8445217.
2. Ducreux M, Buffet C, Lamy P, Beaugerie L, Fritsch J, Choury A, Liguory C, Longuet P, Gendre JP, Vachon F, et al. Diagnosis and prognosis of AIDS-related cholangitis. AIDS. 1995 Aug;9(8):875-80. doi: 10.1097/00002030-199508000-00007. PMID: 7576321.
3. Teixidor HS, Godwin TA, Ramirez EA. Cryptosporidiosis of the biliary tract in AIDS. Radiology. 1991 Jul;180(1):51-6. doi: 10.1148/radiology.180.1.2052722. PMID: 2052722.
4. Forbes A, Blanshard C, Gazzard B. Natural history of AIDS related sclerosing cholangitis: a study of 20 cases. Gut. 1993 Jan;34(1):116-21. doi: 10.1136/gut.34.1.116. PMID: 8381757; PMCID: PMC1374112.
5. Hashmey R, Smith NH, Cron S, Graviss EA, Chappell CL, White AC Jr. Cryptosporidiosis in Houston, Texas. A report of 95 cases. Medicine (Baltimore). 1997 Mar;76(2):118-39. doi: 10.1097/00005792-199703000-00004. PMID: 9100739._
6. Chen XM, Keithly JS, Paya CV, LaRusso NF. Cryptosporidiosis. N Engl J Med. 2002 May 30;346(22):1723-31. doi: 10.1056/NEJMra013170. PMID: 12037153.
7. Vakil NB, Schwartz SM, Buggy BP, et al. Biliary cryptosporidiosis in HIV-infected people after the waterborne outbreak of cryptosporidiosis in Milwaukee. N Engl J Med. 1996;334(1):19-23. doi:10.1056/NEJM199601043340104
8. Bilgin M, Balci NC, Erdogan A, Momtahen AJ, Alkaade S, Rau WS. Hepatobiliary and pancreatic MRI and MRCP findings in patients with HIV infection. AJR Am J Roentgenol. 2008 Jul;191(1):228-32. doi: 10.2214/AJR.07.3197. PMID: 18562750.
9. Wilcox CM, Mönkemüller KE. Hepatobiliary diseases in patients with AIDS: focus on AIDS cholangiopathy and gallbladder disease. Dig Dis. 1998;16(4):205-213. doi:10.1159/000016868