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Anaplastic T cell lymphoma in a patient with autoimmune hepatitis and hepatitis C infection

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Received: 13 Apr. 2021

Accepted: 20 June 2021

Published: 29 Aug. 2021

Keywords: Anaplastic T cell lymphoma, HCV infection, Non-Hodgkin lymphoma

Abstract

Lymphomas are rarely associated with liver disease. We hereby present a case of anaplastic T cell lymphoma in a 45-year-old female, who had received four cycles CHOP chemotherapy regimen and was evaluated for abdominal pain, fever along with weight loss. She was later found to have features of chronic liver disease on ultrasound along with varices on screening endoscopy. Serological workup was positive for hepatitis C infection while her liver biopsy showed features of autoimmune hepatitis. She was managed with steroids and azathioprine along with direct acting antiviral agents.

Citation: Ismail H, Akbar N, Abrar G, Mohammad A, Shah SZ, Majid Z, Hassan Luck N. Anaplastic T cell lymphoma in a patient with autoimmune hepatitis and hepatitis C infection. J Prev Epidemiol. 2021;6(2):e36. doi: 10.34172/jpe.2021.36.



Introduction

Anaplastic large T-cell lymphoma (ALCL) is a type of non-Hodgkin lymphoma (NHL). It is also known as Ki-1 lymphoma. It is a fast growing lymphoma, which is usually seen in young individuals including children (1,2). ALCL accounts for 2% of lymphoma. There are two forms of anaplastic large cell lymphoma (ALCL). Primary cutaneous ALCL which is limited to skin and systemic ALCL which involves the organs and the lymph nodes. Systemic ALCL has further divided in to two forms based on ALK gene. ALK positive ALCL accounts for 0.5% of lymphoma and have better prognosis than the ALK negative ALCL (3,4).

NHL most commonly involves liver, apart from lymph nodes, spleen and bone marrow. Liver biopsy is generally needed to rule out hepatic dysfunctions or deranged liver function test secondary to chemotherapy or other medications. Rarely a lymphoma is associated with other liver diseases such as chronic hepatitis C (5-8), chronic hepatitis B (9, 10), primary biliary cirrhosis (11).

Case Report

A 45-year-old female, known case of ALCL diagnosed on inguinal lymph node biopsy two year ago, underwent 4 cycles of chemotherapy (CHOP), the last one 20 days ago. She was referred to gastroenterology OPD with complaints of right upper abdominal pain, low-grade fever and generalized weakness for 2 months. On general physical examination, she appeared pale, while on

Key point

HCV infection should be evaluated in patients with T cell lymphoma. It may occur as a complication of immunodeficiency state.

examination, her abdomen was soft, with mild tenderness noticed in epigastric region. Laboratory examination revealed plasma hemoglobin 10.1 g/dL (normal 11-15 g/dL) with total leukocyte count of 4.3×10^9 cells per microliter, platelets $102 \times 10^9/\mu\text{L}$, blood urea nitrogen 32 mg/dL, serum creatinine 0.6 mg/dL, a total bilirubin of 1.20 mg/dL, alanine aminotransferase 56 U/L (normal 0-37 U/L), aspartate aminotransferase 81 (0-40 U/L), alkaline phosphate 127 u/L (normal 111-150) and albumin 3.7 g/dL. The international normalized ratio was 1.07. Her serological workup showed anti HCV positive, HbsAg negative with HCV RNA PCR (polymerase chain reaction) was detected. Her autoimmune profile was also sent that showed ANA positive (1:40), anti LKM (anti-liver-kidney microsomal antibodies), ASMA (anti-smooth muscle antibodies) negative and serum IgG levels were raised (18 g/L). She underwent CT-scan chest, abdomen and pelvis that showed liver measures 15.2cm in size, altered parenchymal texture is also seen along with diffuse nodularity, margins are irregular and nodular. Few tiny hypo-dense nodules are noted in both lobes of liver, which are not enhancing on portovenous phase, largest one

measures 0.6×0.3 cm in size. No filling defect seen. Spleen measures 13.7 cm in size, no ascites. A small nodule seen in right lobe of thyroid, few sub-centimeter mediastinal lymph nodes are seen in pre-tracheal and pre-cranial region. She also had liver parenchymal biopsy that showed expanded portal tracts with lymphocytic infiltrates and fibrosis, occasional plasma cells are also noted with foci of piecemeal necrosis and lobulitis also visualized. Florid bile ductular seen. Portal tract to portal tracts bridging fibrosis are noted, forming partial nodules. Modified histologic activity index is 5/6 (partial cirrhosis; [Figure 1](#)). Endoscopy revealed three columns of grade I esophageal varices without red sign seen. Multiple erosions seen in body and antrum of stomach, while normal looking mucosa of bulb of duodenum ([Figure 2](#)). Then, she was treated with direct acting anti-viral therapy (ribavirin, sofosbuvir and daclatasvir) for three months and based on a simplified score of autoimmune hepatitis of six she was kept on tablet Deltacortril 5 mg and azathioprine 50 mg once daily. She was follow-up after two weeks that showed improved liver function tests with alanine aminotransferase 26 U/L (normal 0-37 U/L), aspartate aminotransferase 31 U/L (0-40).

Discussion

ACLCL is a rare entity; it is differentiated from other lymphomas by the expression of CD30 antigen and cytology showing anaplastic cells. It affect children and young adults, it is more common in males than females (12- 15).

ACLCL is further categorized in to ALK positive lymphoma and ALK negative lymphoma based on the alteration on gene. ALK positive ACLCL is a fast growing tumor and effects middle-aged people and it shows good response to chemotherapy and has a better prognosis as compared to ALK negative ACLCL which tends to involve elderly people. ALK positive ALCL carries a 10-year survival rate of 90%, while, ALK negative ALCL contains a stated five-year survival rate of 35% to 49% (16,17).

ACLCL is classified in to two forms based upon the site of lymphoma. Primary cutaneous ACLCL usually involves the skin and they are less aggressive than primary systemic ACLCL however (18) primary systemic ALCL involves the lymph nodes. It can involve the lungs, liver, bone marrow, skin and soft tissues (19).

The association between hepatitis C virus and T cell lymphoma is indistinct. Several studies have been reported a connotation between HCV infection and B-cell NHL (20-25). Few case reports have shown the link between HCV and T-cell lymphomas. Our case is the first case, which showed the association between HCV and anaplastic T cell lymphoma.

Conclusion

In conclusion, HCV infection should be evaluated in patients with T cell lymphoma. It may occur as a

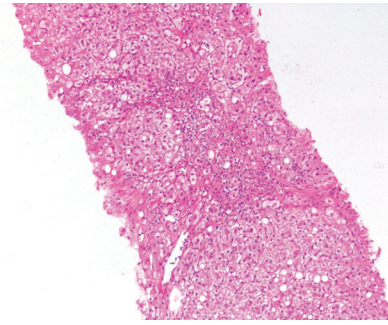


Figure 1. Liver biopsy showed expanded portal tracts with lymphocytic infiltrates and fibrosis, occasional plasma cells are also noted with foci of piecemeal necrosis and lobulitis also visualize with bridging fibrosis.

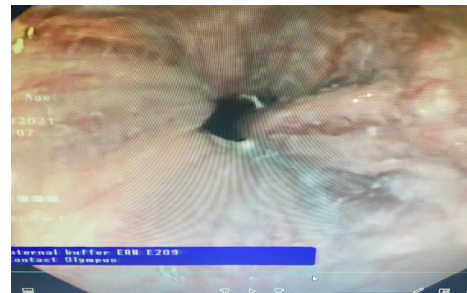


Figure 2. The evidence of grade I varices as seen on the endoscopy image

complication of Immunodeficiency state. Additional studies should be conducted to define the association between HCV infection and T cell lymphomas.

Authors' contribution

Case management by MZ, IA, AN, MA, SSZ and HLN. Manuscript drafting by ZM. All authors read and signed the final paper.

Conflicts of interest

The authors declare that they have no competing interests.

Ethical issues

Ethical issues (including plagiarism, data fabrication, double publication) have been completely observed by the authors. The patient gave the consent to publish as a case report.

Funding/Support

None.

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