Infectious Mononucleosis: A Case Report

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Abstract :

A 6 year old male patient presented with history of fever, pharyngitis, multiple cervical lymphadenopathy and mild hepatomegaly. Complete blood count examination revealed lymphocytic leucocytosis with many lymphocytes showing atypia and Downey Type 1, 2 and 3 appearances. Serology for EBV-VCA IgM was equivocal but lymph node biopsy gave confirmatory evidence of infectious mononucleosis.

Key Words : Multiple cervical and abdominal lymphadenopathy, Atypical Lymphocytosis, Epstein - Barr virus.

Introduction :

Infectious mononucleosis is a clinical syndrome caused by Epstein-Barr virus (EBV), particularly common in adolescents and children. [1] In developing countries primary infection is more frequent in first decade of life. Transmission being principally through exposure to infected saliva, it is called "Kissing disease". [3] The typical features are fever, pharyngitis, lymphadenopathy, malaise and an atypical lymphocytosis. An atypical lymphocytosis of at least 20 percent or atypical lymphocytosis of at least 10 percent plus lymphocytosis of at least 50 percent strongly supports the diagnosis, as do a positive heterophile antibody and specific IgG/IgM tests. [1] Symptomatic treatment, the mainstay of care, includes adequate hydration, analgesics, antipyretics and rest.

Case Report :

A 6 year old male, presented with complaints of mild to moderate degree fever, cough and cold for 7 days. On examination, he had mild tachypnea and tachycardia. Multiple cervical lymphnodes around 1 cm. in size, freely mobile, non-tender and small inguinal lymphnodes were palpable. On abdominal examination liver was palpable, 2-3 cm, firm and non-tender.

His haematological investigations showed Hb-11.5g/dl, TLC-29,140/cmm, DC- P28%,L-63%,E-00%,M-02%, Band cells 07%, and Platelet Count-1,78,000/cmm. Peripheral smear showed marked lymphocytic leukocytosis and many atypical lymphocytes with Downey 1, 2 and 3 appearance (Figure-1). Biochemical investigations showed CRP-5.7mg/dl, SGPT-162 IU/L, SGOT-286 IU/L, ALP-952 IU/L, LDH-7251 IU/L.

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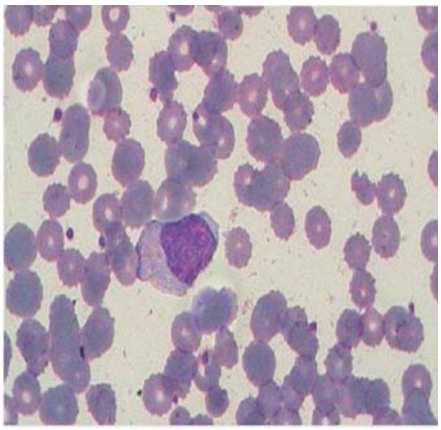
Figure 1: Peripheral smear showing Downey Type 2 lymphocyte.



USG abdomen and pelvis showed mild hepatosplenomegaly and scant free fluid in the peritoneal cavity. CT thorax and abdomen revealed hepatosplenomegaly, mediastinal, para-arotic and celiac axis lymphadenopathy, mild ascites and left sided diaphragmatic eventration, suspicious of lymphoma or tuberculosis.

The clinical history and CBC findings were in favour of an infectious etiology but monospot test was negative. EBV (VCA)-IgG was 3.29 u/ml which was normal whereas EBV (VCA)-IgM was 8.08 u/ml which was equivocal. A cervical lymph node biopsy showed partially effaced nodal architecture with mild hyperplasia & indistinct margins of follicles. Mild to moderate infiltration by tingible body macrophages and mononuclear cells having moderate nuclear atypia and plasmacytoid changes were seen in capsule, subcapsular sinuses and within follicles[Figure-2,3(a) &3(b)]. Thus lymph node showed marked reactive changes favouring viral lymphadenitis, with infectious mononucleosis the most likely possibility.

During hospital stay, patient's hemoglobin deteriorated

from 11.5 g/dl to 7.9 g/dl and liver enzymes remained elevated. He was put on conservative treatment and on follow up after six weeks, he had become afebrile, asypmtomatic & his haemoglobin had recovered to 10.8 g/dl.

Figure 2: Lymph node showing paracortical infiltration by mononuclear cells and reactive follicles with indistinct margins (10X, H&E stain).

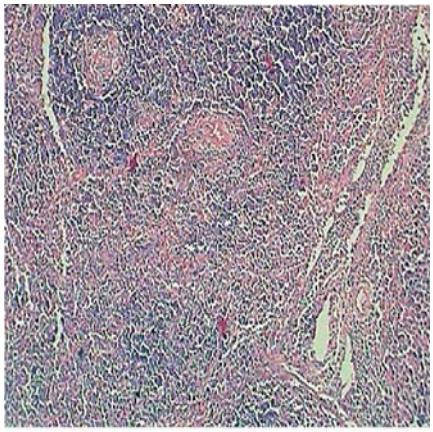


Figure 3(a) & 3(b): Lymph node showing tingible body macrophages and mononuclear cells having mild to moderate nuclear atypia and plasmacytoid changes (40X, H&E Stain).

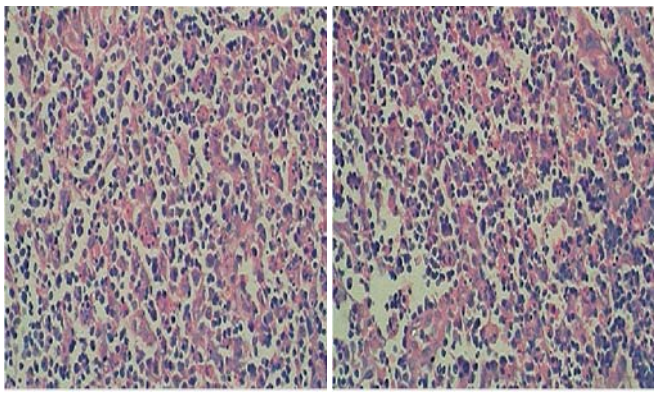


Figure 3(a) **Figure 3(b)**

Discussion :

Infectious mononucleosis, a clinical syndrome seen in children and adolescents caused by Epstein-Barr virus (EBV), is characterized by the triad of fever, lymphadenopathy and pharyngitis. EBV is a herpes virus that replicates primarily in β-lymphoctyes but may also do so in epithelial cells of pharynx and parotid duct. [1] The infection is spread primarily by saliva and incubation period is four to eight weeks. The typical clinical features are fever, pharyngitis, lymphadenopathy and malaise but older patients are less likely to have sore throat and lymphadenopathy and more likely to have hepatomegaly and jaundice. [1, 2] Diagnostic criteria include an atypical lymphocytosis of at least 20 percent or atypical lymphocytosis of at least 10 percent plus lymphocytosis of at least 50 percent in peripheral blood in the presence of fever, pharyngitis and lymphadenopathy and confirmed by a positive serology. Atypical lymphocytes resembling monocytes or immature cells are highly pleomorphic. They are classified as Downey cells type 1, 2 & 3. Type 1, which are small, have indented or lobulated nuclei with clumped chromatin and scanty cytoplasm, Type 2 which have a round to oval nucleus, moderately clumped chromatin, absent or indistinct nucleoli and abundant grey-blue cytoplasm and Type 3 which are larger with round to oval nuclei having moderately dispersed chromatin, one or more prominent nucleoli and is moderately abundant cytoplasm which stains deeply basophilic.

The original serologic Paul-Bunnell test for detection of heterophile antibodies by tube agglutination of sheep or horse red blood cells is now replaced by convenient slide latex agglutination or solid-phase immunoassay. Although relatively specific, they are less sensitive in the first week of illness and in patients younger than 12 years. More specific and sensitive tests are VCA-IgG and VCA-IgM (VCA-Viral Capsid Antigen), especially helpful in patients who have highly suggestive clinical features but negative heterophile antibody test. When the results are negative, these tests are better than heterophile antibody tests in ruling out infectious mononucleosis caused by EBV. [4] Antibody to early antigen can also be detected and is a sign of active infection, but 20% of healthy people may have this antibody for years. Antibody to Epstein-Barr Nuclear Antigen (EBNA), though not detectable until six to eight weeks after the onset of symptoms, can help distinguish between acute and previous infections. If EBNA is positive in a patient with acute symptoms and suspected infectious mononucleosis, previous infection is suggested. [1] Elevated hepatic transaminase levels are common, occurring in approximately one half of patients.

The mainstay of treatment is good supportive care, including adequate hydration, NSAIDS or acetoaminophen for fever and myalgias, throat lozenges or sprays, or gargling with a lidocaine solution to relieve pharyngeal discomfort. Corticosteriods are recommended only in patients with significant pharyngeal edema that threatens respiration. [1] Complications are mainly

haematological, such as hemolytic anemia, thrombocytopenia, aplastic anemia, thrombotic thrombocytopenic purpura, hemolytic uremic syndrome and DIC. [5, 6] Neurologic complications seen in 1-5% of cases include Guillain-Barre syndrome, facial paralysis, meningoencephalitis, aseptic meningitis, peripheral neuritis, cerebellitis and optic neuritis. [6] Potentially fatal complications include splenic rupture and air way obstruction caused by lymphoid hyperplasia and mucosal edema. In some cases EBV infection serves as a trigger for development of hemophagocytic lymphohistiocytosis characterized by prolonged fever, lymphadenopathy, hepatospenomegaly, exanthema, hepatic dysfunction, cytopenia and possibly lymphoma. [3]

Conclusion :

A case of infectious mononucleosis with rising hepatic enzymes and falling haemoglobin level indicating hemolysis is described. Serology for EBV-VCA IgM was equivocal whereas lymph node biopsy gave confirmatory evidence of infectious etiology. Patient was on conservative management and on follow up after six weeks showed symptomatic as well as biochemical and haematological improvement.

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