Case Report

Infectious mononucleosis with follicular tonsillitis and urinary tract infection

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ABSTRACT

Despite the prevalence of Epstein-Barr virus (EBV) infection, new reports of weird and atypical manifestations of the infection continue to emerge, raising the question of how well we know this pathogen. The clinical appearance of patients who become infected throughout their youth or early adulthood is changing as the infection age rises in developed countries. Other physical symptoms are less noticeable and liver involvement is more noticeable throughout these stages. To inform health-care professionals of this change, an update on infectious mononucleosis variable manifestation is necessary. This case presented a 28-year-old female presented with a history of fever, nausea, and vomiting with odynophagia and cervical lymphadenopathy. Complete blood count and peripheral blood film examination revealed lymphocytic leukocytosis with many reactive lymphocytes. Her monospot test for EBV was positive along with a urine culture positive for *Staphylococcus aureus*.

Key words: Cervical lymphadenopathy, Epstein-Barr virus, Lymphocytic leucocytosis

Infectious mononucleosis (IM) is a clinical syndrome caused by the Epstein-Barr virus (EBV). EBV is a member of the herpes family and one of the most common viruses known to infect humans. It is estimated that 90% of the general population becomes infected with the virus before the age of 30 years [1]. However, in most cases, the infection is self-limiting and rarely leads to dangerous complications, fewer than 1% of cases experience serious complications particularly common in adolescents and children [1]. In developing countries, the primary infection is more frequent in the first decade of life. Liver involvement is seen in 80–90% of cases. It is mainly characterized by a transitory elevation of liver enzymes. The transmission is principally through exposure to infected saliva, it is called "kissing disease." The typical features are fever, pharyngitis, lymphadenopathy, malaise, and an atypical lymphocytosis [2].

CASE REPORT

A 28-year-old female presented with complaints of sudden onset fever with chills 7 days back. Fever was high-grade which subsided on taking paracetamol per oral 650 mg and recurred after 12 h for the first 2 days then recurrence every 5–6 h from the 3rd day onward. She had nausea and vomiting from day 3 of the fever and developed a sore throat, odynophagia, and a change in voice on the 4th day of the fever. She also developed pea size swelling on the right side of the neck on the 5th day of fever. There was no history of cold, cough, shortness of breath, joint pain, rashes or dysuria, and lose motion.

On examination, she had mild tachycardia (HR-108 bpm) with a fever of 102°F and a palpable right jugulodigastric lymph node (around 1 cm) in size, freely mobile, and non-tender. Her oral cavity examination showed a whitish membrane over the pharynx and white spots over the bilateral tonsils.

Her peripheral smear showed leukocytosis with absolute lymphocytosis. Activated/reactive lymphocytes known as virocytes were seen. Biochemical and hematological investigations are shown in Table 1. Ultrasonography abdomen showed internal echoes within the urinary bladder lumen. The polycystic pattern was seen in both ovaries.

The patient's history, general examination, and blood investigations were highly in favor of infectious etiology which was also confirmed after getting a monospot test positive. During the course of hospitalization, she was put on intravenous antibiotics, good intravenous hydration, antipyretic, NSAID, and other supportive care. An ENT examination was performed, and she was diagnosed with acute follicular tonsillitis. Her urine culture came positive for *Staphylococcus aureus*. Antibiotics were modified according to the sensitivity report. The patient

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Table 1: Biochemical and hematological investigations of the patient

S. No.	Laboratory test	Laboratory value
1	Hemoglobin	12.9 g/dl
2	Total leukocyte count	17.6/cm^2
3	Differential leukocyte count-P	24%
4	Leukocytes	71%
5	Eosinophil	00%
6	Basophil	0.5%
7	Monocytes	3.8%
8	Platelet count	2.1 lac/cmm
9	C-reactive protein)	6.2 mg/dl
10	Serum glutamic pyruvic transaminase	423 IU/L
11	serum glutamic-oxaloacetic transaminase	292 IU/L
12	Alkaline phosphatase	132 IU/L
13	Gamma-glutamyl transpeptidase	325 IU/L

became fever free from the third day of admission and her liver function test showed improvement (SGOT-280 IU/L and SGPT-145.6 IU/L). The oral examination also showed the disappearance of the white membrane on day 4 with reduced white spots over the tonsils and suppression of nausea and vomiting. The patient was discharged on the 5th day after hemodynamic stabilization on oral antibiotics and NSAID.

DISCUSSION

IM, a clinical syndrome caused by the EBV, is characterized by the triad of fever, lymphadenopathy, and pharyngitis. EBV is a herpes virus that replicates primarily in lymphocytes but may also do so in epithelial cells of the pharynx and parotid duct. The infection spreads primarily by saliva and the incubation period is 4 to 8 weeks which recovers normally without difficulties after a few weeks or months, although it can be aggravated by a variety of hematologic, neurological, pulmonary, psychiatric, and hepatic issues [2].

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. Diagnostic criteria include an atypical lymphocytosis of at least 20 percent or atypical lymphocytosis of at least 10% plus lymphocytosis of at least 50% in peripheral blood in the presence of fever, pharyngitis, and lymphadenopathy which are confirmed by a positive serology [3]. Atypical lymphocytes resembling monocytes or immature cells are highly pleomorphic. They are classified as Downey cells type 1, 2, and 3. Type 1, which is small, has indented or lobulated nuclei with clumped chromatin and scanty cytoplasm, Type 2 which has a round to oval nucleus, moderately clumped chromatin, absent or indistinct nucleoli, and abundant grey-blue cytoplasm, and Type 3 which is larger with a round to oval nuclei having moderately dispersed chromatin, one, or more prominent nucleoli and is moderately abundant cytoplasm which stains deeply basophilic [4].

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 1st 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 IM caused by EBV [5]. Antibodies 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. Antibodies to Epstein-Barr Nuclear Antigen (EBNA), though not detectable until 6 to 8 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 IM, a previous infection is suggested. 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 acetaminophen for fever and myalgias, throat lozenges or sprays, or gargling with a lidocaine solution to relieve pharyngeal discomfort. Corticosteroids are recommended only in patients with significant pharyngeal edema that threatens respiration. Complications are mainly hematological, such as hemolytic anemia, thrombocytopenia, aplastic anemia, thrombotic thrombocytopenic purpura, hemolytic uremic syndrome, and disseminated intravascular coagulation. Neurologic complications seen in 1–5% of cases include Guillain-Barre syndrome, facial paralysis, meningoencephalitis, aseptic meningitis, peripheral neuritis, cerebellitis, and optic neuritis. Potentially fatal complications include splenic rupture and airway obstruction caused by lymphoid hyperplasia and mucosal edema [6]. In some cases, EBV infection serves as a trigger for the development of hemophagocytic lymphohistiocytosis characterized by prolonged fever, lymphadenopathy, hepatosplenomegaly, exanthema, hepatic dysfunction, cytopenia, and possibly lymphoma [7].

CONCLUSION

A case of IM with raised hepatic enzymes and urinary tract infection suggests the infection caused by *S. aureus*. The monospot test was positive and the peripheral blood film showed reactive lymphocytes. The patient was managed conservatively. On follow-up after 1 week, the patient was completely symptom-free.

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