

## CLINICAL VIGNETTE

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# Symptomatic Pharyngitis with Cytomegalovirus

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### *Introduction*

Pharyngitis and tonsillitis are estimated to account for over 10% of all office visits for primary care providers and over 50% of antibiotic usage in the outpatient setting.<sup>1</sup> Associated issues are post strep conditions, such as rheumatic fever and glomerulonephritis and the large number of patients who are given antibiotics for non-group A beta-hemolytic streptococcal infection (GABHS). The four criteria strongly suggesting GABHS are: fever over 38 degrees C, tender anterior cervical lymph nodes, lack of a cough, and a pharyngotonsillar exudate. When all four criteria are present, there is a high probability of GABHS being present, and these criteria have been called the Centor criteria.

Infectious mononucleosis is an important condition with many of these symptoms. Usually a rapid strep is 95% sensitive and specific, and a mono spot test is specific, but not very sensitive. We present a young woman with a negative strep culture and negative monospot test, who had a cytomegalovirus infection clinically. The importance of this finding is discussed below.

### *Case Report*

A 22-year-old female, children's day care center worker developed a sore throat with shoddy tender adenopathy and a fever up to 38 degree C. She was seen at an outside Urgent Care Center, and sent home with the diagnosis of "viral syndrome".

Her symptoms persisted however, and she began to notice an extensive white exudate over both tonsils, increased fatigue, and fever still up to 38 degree C. She had been exposed to her young nephew who had similar symptoms for over one month with no definitive diagnosis.

A rapid strep test with pharyngeal culture and a mono spot test were all done and all three were normal. Because she was not improving, further testing including a Toxoplasma IgM, HIV 1/2 4<sup>th</sup> generation and CBC were obtained. She had a mild leukocytosis, and thrombocytosis and a normal liver panel. She had a strikingly positive CMV IgM and IgG.



### *Discussion*

The spectrum of human illness caused by CMV is diverse and depends in large measure on the host, with three groups identified:

1. perinatal disease and CMV inclusion disease
2. Immunocompromised- this includes patients who have had solid organ and bone marrow transplants. The risk of CMV disease is proportionate to degree of immunosuppression and also includes patients with HIV disease. CMV retinitis, for instance, can occur in both immunocompetent and immunocompromised hosts, so it is important to determine the degree of immunocompetence.

3. Immunocompetent. This appears to be the case for our patient but AIDs testing was done as a precaution. Occupational exposure, such as a child care center<sup>3</sup> or close personal exposure<sup>4</sup> are the likely sources of infection, both for this patient and in general

A landmark study<sup>5</sup> of 494 patients with infectious mononucleosis was significant for several results:

1. Seventy-nine percent of patients had infectious mono 2<sup>nd</sup> to Epstein Barr Virus (EBV) as diagnosed by heterophile antibody.
2. Seventy-three patients were heterophile antibody negative, and almost half of these patients had CMV infection. It was concluded that CMV mono represented the cause of previous EBV negative patients in most cases, especially in the right clinical setting.

A large number of patients present to their PCP with symptoms consistent with either strep (GABHS) or Infectious Mononucleosis syndromes. Cytomegalovirus (CMV), should be considered in both immunocompetent and immunocompromised patients. CMV testing may lead to the discovery of an otherwise undiagnosed immunocompromised condition.

## REFERENCES

1. **Klemola E, Von Essen R, Henle G, Henle W.** Infectious-mononucleosis-like disease with negative heterophil agglutination test. Clinical features in relation to Epstein-Barr virus and cytomegalovirus antibodies. *J Infect Dis.* 1970 Jun;121(6):608-14. PubMed PMID: 4316146.
2. **Henle W, Henle G, Scriba M, Joyner CR, Harrison FS Jr, Von Essen R, Paloheimo J, Klemola E.** Antibody responses to the Epstein-Barr virus and cytomegaloviruses after open-heart and other surgery. *N Engl J Med.* 1970 May 7;282(19):1068-74. PubMed PMID: 4314606.
3. **Klemola E.** Recurrent virus meningitis. *Br Med J.* 1970 Feb 28;1(5695):564. PubMed PMID: 5435198; PubMed Central PMCID: PMC1699565.
4. **Klemola E.** [Antibiotics for restricted use]. *Duodecim.* 1970;86(4):252-7. *Finnish.* PubMed PMID: 5419256.
5. **Klemola E.** Hypersensitivity reactions to ampicillin in cytomegalovirus mononucleosis. *Scand J Infect Dis.* 1970; 2(1):29-31. PubMed PMID: 4329122.

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