



Splenomegaly from Recurrent Infectious Mononucleosis in an NCAA Division I Athlete



David R Bakal, MD,¹ Donald Kasitinon, MD,^{1,2} Andrea L Kussman, MD,² and Calvin E Hwang, MD²

¹Stanford University, Department of Physical Medicine & Rehabilitation

²Stanford University, Department of Sports Medicine

Introduction

- Infectious mononucleosis (IM) is a common self-limiting illness most frequently caused by the Epstein-Barr virus (EBV) and characterized by fever, pharyngitis, and cervical lymphadenopathy.
- Splenomegaly is commonly found in those with IM and can lead to the rare complication of splenic rupture, which has an incidence of 0.1-0.5% in IM.
- Physical activity is thought to be a risk for splenic rupture. This limits how quickly an IM-infected athlete can safely return to sport.
- Roughly 90% of individuals over age 35 are seropositive for EBV antibodies, which are thought to provide immunity against future infection.
- We present a case of an NCAA Division I athlete with a history of remote IM infection who developed a new symptomatic IM infection with splenomegaly.

Case Report

Initial presentation

- 21-year-old NCAA Division I male swimmer presented with a two-day history of fevers and body aches.
- Past medical history notable for Gilbert's syndrome and mononucleosis infection in childhood, previously confirmed with positive EBV VCA IgG titers. After evaluation, his current symptoms were attributed to an upper respiratory infection, and he was sent home with instructions to continue supportive care.

Day 4 post-symptom onset

- The patient presented to the ED with fatigue, dark urine, and jaundice. His labs were notable for elevated LFTs and a normal WBC count with elevated variant lymphocytes (Table 1).
- Abdominal ultrasound was notable for an enlarged homogenous spleen measuring 15.3 centimeters (Figure 1a).
- EBV VCA IgM was positive.
- He was diagnosed with IM. He was monitored overnight and was discharged home the next day after repeat labs showed down-trending LFTs and a stable WBC count (Table 1).

Day 7 post-symptom onset

- The patient reported resolution of his fevers and improved energy, but ongoing mild pharyngitis.
- LFTs remained elevated and WBC count had increased (Table 1).
- Spleen size remained virtually unchanged at 15.0 cm.
- Full EBV antibody titers were notable for EBV VCA (+)IgG and (+)IgM, EBV early antigen (EA) (-)IgG, and EBV nucleic acid (EBNA) (-)IgG, consistent with a current or recent EBV infection.
- He was sent home with instructions to continue avoiding all exertional activities.

Day 9 post-symptom onset

- The patient's symptoms had completely resolved.
- LFTs remained elevated but were improving (Table 1). Spleen length was 14.8cm (Figure 1b).
- He was advised to continue with strict activity restrictions.

Day 21 post-symptom onset

- LFTs had considerably improved (Table 1) and spleen measured 13.1 cm (Figure 1c).
- The patient was cleared to return to training with gradual progression to full activity the following week.

Table 1: Lab values and spleen size throughout the course of the illness

	Day 4	Day 5	Day 7	Day 9	Day 21
AST	358	285	357	210	44
ALT	351	276	362	292	58
Total Bilirubin	13.0	10.8	4.1	1.8	1.3
Alkaline Phosphatase	254	224	319	308	120
WBC (K/uL)	7.8 (42% variant lymphocytes)	8.4	11.7 (38% variant lymphocytes)		
Spleen Size	15.3 cm		15.0 cm	14.8 cm	13.1 cm

Discussion

- To the authors' knowledge, this is the first published case of serologic confirmed recurrent IM infection with or without splenomegaly.
- The lack of literature in recurrent IM is likely because antibodies made at the time of initial infection confer a certain degree of immunity to future infection.
- This case demonstrates that a prior IM infection should not preclude a workup for recurrent acute IM if the history and exam are suspicious.
- This case also demonstrates that splenomegaly can still occur in an episode of recurrent IM. This is important because a missed diagnosis of IM with splenomegaly can be devastating if the appropriate activity restrictions are not relayed to the patient.



Figure 1a: Spleen measuring 15.3 cm on admission to the ED four days after symptom onset.

Figure 1b: Spleen measuring 14.8 cm nine days after symptom onset at which time patient was asymptomatic.

Figure 1c: Spleen measuring 13.1 cm three weeks post symptom onset with normalization of transaminitis.

Conclusions

- There is no data regarding whether splenomegaly from IM reinfection is associated with a similar risk of splenic rupture compared to initial IM infection. Additionally, there are no formal recommendations as to when an athlete with recurrent IM can safely return to sport.
- Given this lack of data, the authors of this case report recommend utilizing the same clinical guidelines for initial IM infections and recurrent IM infections, which is rest for a minimum of 3 weeks followed by resumption of light activity and gradual progression to full activities.
- Additional research is needed to assess the degree to which EBV VCA IgG antibodies confer immunity to future infection.

References

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