

Symptomatic atrial fibrillation with infectious mononucleosis

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Infectious mononucleosis (IM) is caused by Epstein-Barr virus, a herpes virus that is spread by intimate contact. Asymptomatic viral shedding commonly occurs among adolescents and young adults, and the most typical clinical syndrome is a self-limiting acute febrile illness. Clinical features include fever, pharyngitis, lymphadenopathy, splenomegaly, and hepatomegaly, which is the least common.¹ Life-threatening complications occur in only 5% of cases and include the following: splenic rupture, upper airway obstruction, neurologic complications, pericarditis, and myocarditis.

Serious morbidity and mortality are associated with cardiac complications of IM^{2,3}; this is illustrated in the case below. Because most patients with IM are treated as outpatients, primary care providers must be vigilant and educate their patients.

Case description

A 19-year-old healthy white male patient presented to hospital with sore throat, fever, chills, malaise, and increasing shortness of breath of 7 days' duration. Symptoms worsened despite outpatient therapy with amoxicillin and prednisone. Pertinent examination findings included dehydration, lethargy, erythema of the pharynx, enlarged tonsils with slight exudates, and a respiratory rate of 22 breaths/min. Leukocyte count was 19000/mm³, with 48.6% lymphocytes (with few atypical cells), 37.5% neutrophils, and 13.6% monocytes. Alanine aminotransferase was 379 U/L; aspartate aminotransferase was 92 U/L; and alkaline phosphatase was 171 U/L. A computed tomographic scan of the abdomen showed positive hepatosplenomegaly and heterophil antibody test results. He received ibuprofen, intravenous methylprednisolone, and intravenous fluids.

On day 2 of admission, the patient developed a sharp, pleuritic, nonradiating chest pain on his left side, which was worsened by inspiration and relieved by leaning forward. He also complained of palpitations and diaphoresis. His heart rate was 165 beats/min and his blood pressure was irregularly irregular at 160/100 mm Hg. Electrocardiogram (ECG) showed atrial fibrillation with rapid ventricular response. Thyroid function test results were normal and transthoracic echocardiogram revealed minimal posterior pericardial effusion. He responded well to treatment with diltiazem and converted back to normal sinus rhythm

within 48 hours. He was subsequently discharged and instructed to use ibuprofen and diltiazem for 2 weeks. He remained in normal sinus rhythm when he was seen in the outpatient setting 2 weeks later.

Discussion

Although IM is regarded as a benign disease, it is known to affect multiple organ systems with potential complications to the liver, spleen, pharynx, and heart. Pericarditis, with or without effusion, is the most common cardiac complication of IM. Several studies and case reports have shown that atrial fibrillation can occur in the setting of pericarditis, irrespective of the etiology, especially when acute.⁴ Atrial fibrillation can present with palpitation, chest pain, dizziness, or sometimes fainting spells. Diagnosis is suspected in a patient with an irregularly irregular pulse and is confirmed by an ECG. Epstein-Barr virus, the offending agent in IM, has been demonstrated in the pericardium of a patient with viral pericarditis—most likely by direct and local invasion of the pericardium by the virus. The manifestations of acute infectious myocarditis have been shown to result from the direct and local Epstein-Barr viral invasion of the myocardium, as well.⁵

Diagnosis of pericarditis or myocarditis is generally made on clinical grounds. A patient with pericarditis usually presents with low-grade fever and mild to severe chest pain that worsens on inspiration and is relieved by leaning forward. Friction rub, which is not uncommon, was absent in our patient. Acute chest pain in myocarditis mimics acute coronary syndrome. Diffuse ST-segment elevations are typical changes presented on ECGs in patients with acute pericarditis; however, in acute myocarditis the findings are nonspecific.

Echocardiography will confirm the presence of pericardial effusion, structural heart disease, or ventricular dysfunction.^{6,7} Nonsteroidal anti-inflammatory drugs are effective for treatment of pericarditis.¹ Atrial fibrillation in IM responds well to β -blockers and calcium channel blockers. In our patient, the diagnosis and treatment of atrial fibrillation and pericarditis was prompt because he was hospitalized. Potential and deleterious complications from atrial fibrillation include angina, heart failure, and stroke. As the majority of patients with IM are treated as outpatients, primary care physicians must be aware of these complications and educate their patients to report potential cardiac symptoms promptly.

In addition, patients with IM should be advised to limit cardiac stress during the course of their illness.⁵

Conclusion

Although IM occurs in young healthy patients, fatal complications have occurred and can be prevented. Family physicians should always educate patients about the potential complications of IM and encourage them to report symptoms early. ✪

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Competing interests

None declared

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EDITOR'S KEY POINTS

- Although infectious mononucleosis (IM) is often thought to be a benign disease, it can affect multiple organ systems.
- Atrial fibrillation can occur in IM as a result of viral invasion of the pericardium. A pericardial effusion can occur in conjunction with atrial fibrillation.
- In most cases, treatment with nonsteroidal anti-inflammatory drugs is effective for the treatment of the pericarditis. Atrial fibrillation usually responds well to β -blockers and calcium channel blockers in IM.
- Patients with IM should be warned of the signs or symptoms of potential complications.

POINTS DE REPÈRE DU RÉDACTEUR

- Même si on croit souvent que la mononucléose infectieuse (MI) est une maladie bénigne, elle peut affecter de multiples organes.
- La MI peut provoquer une fibrillation auriculaire en raison d'une invasion virale du péricarde et, simultanément, un épanchement péricardique.
- Dans la majorité des cas, un traitement aux anti-inflammatoires non stéroïdiens est efficace pour la péricardite. La fibrillation auriculaire réagit habituellement bien aux β -bloquants et aux inhibiteurs calciques durant une MI.
- Il faudrait renseigner les patients souffrant de MI au sujet des signes ou des symptômes des complications possibles.

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