

Letters to the Editor

Unusual occurrence of ventricular tachycardia induced by single bee sting

Sir,

A 35-year-old female patient was admitted to our emergency room with palpitations, 1 h after a single bee sting in the left hand. She was previously in good health, not on any medications and did not have any past allergic reactions. Local inspection of the left hand revealed only mild erythema and swelling. Hemoglobin, thyroid-stimulating hormone, and serum electrolyte levels were within the normal range. Initial 12-lead electrocardiogram (ECG) showed short runs of the nonsustained ventricular tachycardia (VT) [Figure 1]. Only a few seconds later, she suddenly complained of chest discomfort, dizziness, and intensive palpitations. Repeat ECG showed wide QRS-complex tachycardia at a rate of 160 b.p.m. without detectable P-waves [Figure 2]. A bolus of 150 mg amiodarone i.v. was administered, which rapidly terminated VT and restored normal sinus rhythm [Figure 3]. The treatment was continued with bisoprolol 2.5 mg twice daily.

Transthoracic echocardiography revealed only a mild mitral valve prolapse with mild mitral regurgitation.



Figure 1: Electrocardiogram showing standard Leads I, II, and III: Frequent ectopic ventricular beats with short runs of the nonsustained ventricular tachycardia

The patient refused to undergo further invasive investigations (namely coronary angiography and electrophysiological study) so we performed computed tomography-coronary angiography, which showed the normal anatomy of the coronary arteries and the absence of stenosis. The patient was discharged after 48 h and remained asymptomatic during the next 6 months follow-up. A 24-h-holter-ECG was performed after 1–6 months and was normal.

Bee stings have been associated with a wide variety of local and systemic reactions including rarely, tachyarrhythmias, commonly occurring in individuals with preexisting heart disease such as left atrial enlargement and left ventricular failure.^[1] Although the arrhythmogenic mechanism of the bee venom is still unknown, many pharmacologically active constituents of the bee venom have been isolated including histamine, serotonin, dopamine and noradrenaline, melittin, hyaluronidase, apamin, and phospholipase A2 which may induce tachyarrhythmias in the absence of anaphylaxis.^[2] However, in the presence of anaphylaxis tachyarrhythmias are more common, and possible mechanisms include a direct antigen-antibody myocardial reaction, a pharmacological effect of mediators released during anaphylaxis, the effects of agents such as adrenaline used for treatment, hypoxia, hypotension, preexisting heart disease or a combination of several factors.^[3]

In this patient only mild mitral valve prolapse was demonstrated by transthoracic echocardiography; and to the best of our knowledge, this is the first reported case of



Figure 2: Electrocardiogram showing standard Leads I, II, and III: Sustained ventricular tachycardia with the right bundle branch block pattern



Figure 3: Electrocardiogram showing standard Leads I, II, and III: Regular sinus rhythm just after conversion with amiodarone

VT in a patient with mild mitral valve prolapse-induced by single bee sting in the absence of anaphylaxis. Bee venom as a metabolic insult and resultant autonomic overactivity probably induced tachyarrhythmia in this case.

Cardiac magnetic resonance imaging to look for myocardial scarring and electrophysiologic study to look for inducibility of idiopathic outflow tract VT would be indicated in the setting of purely monomorphic VT.

Finally, this case implies the necessity of meticulous ECG monitoring in patients presenting with palpitations and ventricular ectopic beats after bee sting, because malignant tachyarrhythmias may occur even in the absence of anaphylaxis in the setting of only mild structural heart abnormalities, as reported here.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

**Zoran Stajic, Predrag Djuric,
Aleksandra Grdnic,
Zdravko Mijailovic**

Clinic of Cardiology, Military Medical Academy, Belgrade,
Serbia, Southeast Europe

Correspondence:

Dr. Zoran Stajic,
Clinic of Cardiology, Military Medical Academy,
17 Cmotravska, 11040 Belgrade, Serbia, Southeast Europe.
E-mail: zoran0312@yahoo.com

References

1. Przybilla B, Ruëff F. Insect stings: Clinical features and management. *Dtsch Arztebl Int* 2012;109:238-48.
2. Habermann E. Bee and wasp venoms. *Science* 1972;177:314-22.
3. Fisher BA, Antonios TF. Atrial flutter following a wasp sting. *J Postgrad Med* 2003;49:254-5.

Access this article online	
Quick Response Code: 	Website: www.ijccm.org
	DOI: 10.4103/0972-5229.160295

How to cite this article: Stajic Z, Djuric P, Grdnic A, Mijailovic Z. Unusual occurrence of ventricular tachycardia induced by single bee sting. *Indian J Crit Care Med* 2015;19:429-30.