



Case Report

JMR 2016; 2(3): 57-58

May- June

ISSN: 2395-7565

© 2016, All rights reserved

www.medicinarticle.com

Atrial Fibrillation induced by the Samsam Ant (*Pachycondyla sennaarensis*) sting: a case report and related literature review

Kashif Bin Naeem*¹, Parwaneh Madad¹, Najiba Abdul Razzaq¹

¹ Al Baraha Hospital, Dubai, Ministry of Health, UAE

Abstract

Ant allergy is rare but can cause severe life-threatening anaphylaxis mandating urgent treatment. Samsam Ant (*Pachycondyla sennaarensis*) is endemic in UAE and constitutes a public health hazard. It can cause mild skin reaction to severe anaphylaxis. Cardiac arrhythmias are rarely reported. We report a patient who presented with Samsam ant sting and developed transient atrial fibrillation in addition to anaphylactic reactions. The case report highlights the rare association with atrial fibrillation and reviews the related literature.

Keywords: Samsam ant, *Pachycondyla sennaarensis*, Atrial fibrillation.

INTRODUCTION

Although most insect sting allergy is associated with bees and wasps, several species of ants are capable of stinging. Approximately 8,800 species have been described [1]. These ants are usually endemic to a particular area. In USA, the imported fire-ants (*Solenopsis invicta* and *Solenopsis richteri*) are the main culprits [1]. In Australia, the jack-jumper ant (*Myrmecia pilosula*) and the bull ant (*Myrmecia pyriformis*) are the major cause of ant sting allergy. Other ants capable of inducing allergic reactions include *Pachycondyla chinensis*, found in Japan, China and other Far East Asian countries, and *Pachycondyla sennaarensis* that is common in the Arabian Peninsula [2].

We report a patient who presented with Samsam ant sting and developed transient atrial fibrillation in addition to anaphylactic reactions.

CASE REPORT

A 60-year-old female, with no previous illness, presented to our center with complaints of itching, redness and urticarial rash all over the body after an insect bite. The insect was reported as the endemic Samsam ant. The daughter reported that the patient developed similar allergic reaction to the ant few months back. She initially went to a primary health center where she was treated with intravenous steroids and anti-allergy medications. However, she reported to us as the condition did not settle. Upon presentation, she looked distressed and uncomfortable, itching with rash all over the body. Her BP was 130/89 mmHg. She was tachycardiac with pulse rate of 150/m, irregular in rhythm. Cardiovascular examination was unremarkable. ECG showed atrial fibrillation with fast ventricular rate (figure 1). While in ER, she was given intramuscular epinephrine and chlorpheniramine with nebulizers. Lab tests showed normal CBC, renal, liver and thyroid functions. Trans-thoracic echocardiography was completely normal with no evidence of structural heart disease. She was admitted in CCU for monitoring. She was given intravenous digoxin to control the heart rate. Within the next few hours, she reverted to normal sinus rhythm (figure 2). She recovered with the treatment and was discharged next day.

DISCUSSION

Pachycondyla sennaarensis, commonly known as the Samsam ant (pronounced samsoom in Arabic), belongs to the family *Formicidae*, subfamily *Ponerinae* and tribe *Ponerini*. The species is widely distributed throughout the African tropics ranging from the Sahelian zone in the north to a level about even with

*Corresponding author:
Dr. Kashif Bin Naeem
Al Baraha Hospital, Dubai,
Ministry of Health, UAE

southern tip of Madagascar. It is common in all urban areas of the UAE and commonly resides in gardens and buildings. It has recently been recognised as a health hazard in UAE, where four deaths have been recorded in the past four years due to anaphylactic shock (unpublished data) [2]. The ant is black-brown and has a slender body, 4-5 mm long. It forms nests in open sunny areas that may be very extensive covering several square meters and containing several hundred workers with only a single queen. The most important morphological features of this ant are the large eyes and mandibles with a dorsolateral pit and the presence of a deep mesopropodal furrow (figure 3) [3]. The ant does not bite, rather it injects venom through a stinger. The sting is extremely painful with the pain persisting for up to four hours. The welt is intensely itching for the first few days that disappears after 5 to 7 days, without any scar [2].



Figure 1: ECG showing atrial fibrillation with fast ventricular rate **Figure 2:** ECG showing normal sinus rhythm after reversion



Figure 3: Picture of the Samsam Ant

Several cases have been reported in the Middle East. Dib *et al* [2] studied 31 patients with Samsam ant stings in UAE who developed anaphylactic reactions and performed clinical examination, skin tests and specific IgE antibody titrations. The main clinical manifestations of the reactions were anaphylactic, consisting of respiratory, skin, neurological and gastrointestinal manifestations. The mechanism of the reaction was found to be type 1 IgE-mediated hypersensitivity that can be identified with skin tests with RAST technique. The study also indicated a predominance in women, likely due to the fact that the women are more exposed to the ants at home. Alanazi *et al* [3] reported four cases who presented to Riyadh, Saudi Arabia after allergy secondary to the sting of Samsam ant. They presented with rash, itching, shortness of breath and swelling of upper airway. One of these needed endotracheal intubation and epinephrine infusion in addition to anti-histamines and steroids. Al-Shahwan *et al* [4] reported another case in Saudi Arabia with recurrent anaphylactic reactions to the ant sting. The ant was identified when brought by the relatives from home. Rizk *et al* [5] reported a placental abruption and intrauterine death of

the fetus of a 21-year-old female who developed anaphylaxis following the Samsam ant sting.

Cardiac arrhythmias have not been frequently reported after the Samsam ant sting. Salam *et al* [6] reported a young man who presented with transient atrial fibrillation induced by the black ant sting in 2002. Since then no further cases of atrial arrhythmias have been reported indicating its rare association.

If an allergic or anaphylactic reaction to the ant sting is suspected, an attempt should be made to identify the offending arthropod. Allergic individuals need to carry a syringe preloaded with epinephrine that can be self-administered in an emergency, as well as wear a medical information tag [7]. Immunotherapy has been explored as an option to treat ant allergic patients. The safety and effectiveness of several immunotherapy options have been documented for fire ant stings, but the same therapy has not proven to be effective for *Pachycondyla* species [8]. Although immunotherapy with an extract of *Pachycondyla* species ants is expected to be highly effective, the limited geographical distribution of each species presents a major challenge to making venom extracts available for clinical use [9].

CONCLUSION

Samsam ant allergy is being increasingly recognized as a public health hazard in UAE. Public and clinician awareness needs to be enhanced regarding the condition. Although immediate treatment remains standardized as for all anaphylactic reactions, specific species-related immunotherapy treatment strategies should be evaluated with further research.

Conflicts of interest

All authors have none to declare.

Funding

Nil.

REFERENCES

1. Shek LP, Ngiam NS, Lee BW. Ant allergy in Asia and Australia. *Curr Opin Allergy Clin Immunol* 2004; 3:25-328.
2. Dib G, Guerin B, Banks WA. Systemic reactions to Samsam ant: an IgE-mediated Hypersensitivity. *J Allergy Clin Immunol* 1995; 96: 465-472.
3. Alanazi M, Alshahrani M, Alsalamah M. Black ant stings caused by *Pachycondyla sennaarensi*: a significant health hazard. *Ann Saudi Med* 2009 May-Jun; 29(3): 207-11.
4. Al-Shahwan M, Al-Khenaizan S, Al-Khalifa M. Black (Samsam) ant induced anaphylaxis in Saudi Arabia. *Saudi Med J* 2006; 27(11): 1761-1763.
5. Rizk DE, Mensah-Brow E, Lukic M. Placental abruption and intrauterine death following an ant sting. *Int J Gynaecol Obstet* 1998; 63:71-72.
6. Salam AM, El-Tawil MS, Abuzaid H. Transient atrial fibrillation induced by black ant sting. *Heart Views (serial online)* 2002; 3: 5-5.
7. Steen CJ, Janniger CK, Schutzer SE. Insect sting reactions to bees, wasps and ants. *Int J Dermatol* 2005; 44: 91-94.
8. Tankersley MS, Walker RL, Butler WK. Safety and efficacy of an imported fire ant rush immunotherapy protocol with and without prophylactic treatment. *J Allergy Clin Immunol* 2002; 109:556-562.
9. Brown SG, Heddle RJ. Prevention of anaphylaxis with ant venom immunotherapy. *Curr Opin Allergy Clin Immunol* 2003; 3(6): 511-6.