Hymenoptera sting in the head and neck region and severe allergic reactions

Stanisława Bazan-Socha, Agnieszka Padjas, Joanna Żuk
Unit of Allergy and Clinical Immunology, Department of Internal Medicine, Jagiellonian University Medical College, Kraków, Poland

The article entitled “Hymenoptera sting in the head and neck region is not a risk factor for grade IV systemic reactions in patients with venom allergy,” published in the current issue of the Polish Archive of Internal Medicine (Pol Arch Intern Med) by Cichocka-Jarosz et al., is an interesting study undermining the general knowledge that a Hymenoptera sting in the head or neck is related to a more severe systemic anaphylactic reaction, as compared with a sting in other parts of the body. Obviously, insect sting allergy is an important problem for internists, because it has been recognized as the most common cause of anaphylaxis in adults, affecting up to 7.5% of them, and 56.6% to 94.5% of the population has been stung at least once in their lifetime. Death from anaphylactic shock after sting represents 20% of deaths due to anaphylactic shock from any reason.

The article is interesting particularly because of a common belief, shared also by family doctors and medical students, that a sting in the head or neck is life-threatening. Indeed, in 1990, a sting in the head region was postulated by Mueller et al. as a risk factor for a fatal outcome. However, authors of more recent publications did not share such an opinion. Thus, more large epidemiological studies are needed to verify this hypothesis.

In the current report, Cichocka-Jarosz et al. analyzed 195 patients (109 adults and 86 children), aged 2 to 74 years, treated with venom immunotherapy owing to at least grade II systemic anaphylactic reaction based on the 4-grade classification system by Mueller. Surprisingly, the authors demonstrated that the head and neck was the most common site of Hymenoptera insect stings (about 30% of the study group), but this site was not related with a more severe allergic reaction. On the other hand, they found a higher risk of grade IV systemic reactions in individuals living in the village and in adults (30 years or older). The results of the study are in line with other observations. Stoevesandt et al. identified 4 significant indicators or risk factors for severe anaphylaxis in Hymenoptera venom allergy, such as elevated baseline serum tryptase levels, absence of angioedema or urticaria during anaphylaxis, less than 5 minutes from the sting to the first symptom onset, and advanced age. Advanced age, higher baseline serum tryptase levels, and the absence of skin symptoms after exposure to venom were also noted as the risk factors of more severe sting-related systemic reactions by Arzt et al., as opposed to sex, sting site, and venom type.

Cichocka-Jarosz et al. concluded that patients who were stung in the head or neck region should not immediately use adrenaline as self-medication, but rather the decision should be postponed based on the further progression of clinical symptoms. However, the main study results should be interpreted with caution. As stated by the authors, it has been demonstrated that even a large local reaction due to a sting, which is a common clinical presentation of Hymenoptera venom allergy, if localized in the mouth or tongue region, might still be potentially fatal due to upper respiratory tract edema not related to systemic anaphylactic symptoms. Thus, it might require an immediate and aggressive medical intervention. In the present study, only 2 individuals were stung in the mouth region, and in both cases, this resulted in very severe systemic reactions. This observation suggests that a sting in the mouth area should be treated with greater caution than those in the other skin regions of the head.

Another critical comment on the study is that the elderly patients were underrepresented in the adult population at a mean (SD) age of 41.08 (14.62) years. These individuals are characterized by numerous comorbidities, including cardiovascular diseases, which increase the risk of dying from a sting. They are also frequently treated with β-blockers, which worsen the course of anaphylaxis. Considering that the most severe
TABLE 1  Safety rules for avoiding Hymenoptera stings during the flight period of insects

1. Do not eat or keep food outside.
2. Avoid walking barefoot outdoors.
3. Wear shoes that cover the entire foot.
4. Avoid accumulation of garbage close to the house.
5. Do not take out the trash yourself. Ask someone to assist you.
6. Avoid eating out in bars or restaurants.
7. Avoid eating outdoors.
8. Avoid visits to open-air markets.
9. Avoid opening windows and doors.
10. Install insect nets on the windows.
11. Use insect sticky trap at home.
12. Avoid using cosmetic fragrances.
13. Avoid using scented laundry powders and liquids.
14. Do not use scented laundry powders and liquids.
15. Avoid wearing clothes that are intense or pastel in color.
16. Do not keep fresh flowers in the house.
17. Avoid consuming alcohol indoors and outdoors.
18. Do not hang laundry outdoors.
19. Avoid using public toilets.
20. Wear skin-covering clothes (long sleeves, long trousers, hat, etc).

These rules, which are recommended for patients and their families in our department, are presented in Table 1. However, in our opinion, they should also be communicated to a large population, including nonallergic individuals, in order to popularize healthy behaviors that help avoid unwanted exposure to insect venom.

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