Uvula Bee Sting: A Case Report

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ABSTRACT

There have been several reports of Hymenoptera sting around the world, but only a few have been reported being stung at the oropharynx which is considered uncommon and can cause life threatening condition. The authors reported a case of a 41-year-old healthy man who had a bee sting at his uvula 4 hours before coming to the hospital. He felt a lump in his throat and had some degrees of difficult swallowing and breathing and had muffled voice. The uvula was swollen and there was a pinpoint penetrating lesion at the anterior surface of the uvula. No stinger was identified. Vital signs were stable with no stridor nor wheezing. Intraoperative examination to identify stinger was conducted and tissue at the stinging area was excised to confirm complete removal of the possible embedded foreign body.

Keywords: Bee sting, hymenoptera, uvula, oropharynx, upper airway obstruction

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BACKGROUND

There have been several reports of Hymenoptera sting worldwide which usually happens in the head and neck region[1-4], but sting in the oropharyngeal area[5-9] and below[10] are uncommon and can cause life threatening condition. Clinical reactions to the sting vary from local with or without systemic symptoms from venom and allergic reactions to anaphylaxis, which determine the treatment required. The authors reported the first Thai case of bee stinging at the uvula and the management of this unfortunate uncommon incidence.

CASE REPORT

A 41-year-old healthy Thai male presented at the emergency room reporting of having had a bee sting at his uvula. The patient was yawning loudly when a bee flew in his mouth and stung at his throat. He immediately spit the bee out. Four hours later the patient came to the hospital with the feeling of a lump in his throat and had developed difficultly in swallowing and breathing. He was fully conscious and corresponded well, but spoke with muffled voice. The patient had no previous history of being stung by other Hymenoptera species apart from ants, and has no history of allergic reactions to insect bites, food, drugs or other chemicals. The uvula showed marked swelling with a pinpoint penetrating lesion at the anterior surface, approximately 1 cm above the uvular tip, where blood was oozing from. No stinger was identified. Vital signs showed body temperature of 36°C, respiratory rate 28/min, pulse rate 66/min and BP 155/96 mmHg. Room air pulse oxymetry was 100%. The patient showed signs of partial upper airway obstruction with forced inspiration and a slight retraction of suprasternal notch, but there was no stridor and the breathe sound was clear. There were no skin rashes or any other allergic reactions elsewhere. The rest of the physical examinations were within normal limits.

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The patient was admitted into the hospital after receiving antihistamine (diphenhydramine HCl) intravenously at the ER and no further progression of upper airway obstruction was observed. The possible embedded or remaining stinger at the uvula was further investigated under endoscopic examination in the operating room. No retained stinger was identified. The penetrating lesion along with some soft tissue underneath was then excised from the uvula, to make sure that the stinger, if retained, was completely removed. Histopathological finding of the lesion showed stromal edema with dense inflammatory cell infiltrates. No foreign body was seen. The patient recovered well, with no further development of swollen uvula, upper airway obstruction or allergic reactions elsewhere, and he was discharged the next day. The patient returned to his healthy status at 1 week follow up at the hospital, in which information regarding delayed onset of allergic reactions was given. The patient reported no abnormal symptoms on the next 2 weeks phone call follow up.

DISCUSSION

The patient's reactions to a bee sting can occur from after being stung up to 48 hours and determine the treatment required.

Local reactions or urticaria without systemic reactions are only limited to the stinging area or distal area due to edema, caused by influx of inflammatory cells as well as immunoglobulins in response to foreign bodies, whereas allergic reaction is usually generalized and mainly caused by immunoglobulin E (IgE) mediated mast cells and basophils activation which release mediators such as histamine and leukotrienes that circulate throughout the whole body and develop reactions beyond the stinging area. Treatment usually requires intravenous antihistamine with or without corticosteroid to prevent recurrent or prolonged allergic reactions.

Anaphylaxis occurs when sudden systemic release of the mediators results in target organ (skin, vascular system and respiratory system) reactions and is considered when patient has generalized urticaria, vomiting, shortness of breath, wheezing, laryngoedema, lingular edema or uvula edema, weakness, syncope, confusion, or chest pain.[11] Emergency airway establishment and intravenous isotonic crystalloids should be ready when necessary. Treatment of choice for severe systemic reactions and anaphylaxis is epinephrine (1:1,000) (1 mg/ml) administered intramuscularly or subcutaneously, 0.3 ml dose for adults and 0.01 mg/kg (maximum 0.3 ml) for children.[12]

Ten of 11 cases reported to have a bee stung at oropharyngeal area manifested local oropharyngeal swelling without associated systemic reactions and were improved following either steroid or antihistamine or both administration. Every case had retained stinger removed either by auto-dislodgement from swallowing or spitting out or by healthcare providers.[6-8] There was only one case of being stung by over hundred bees all over his body along with a retained stinger at oropharynx for more than 24 hours who developed hepatitis, renal insufficiency and rhabdomyolysis. The patient was treated conservatively with paracetamol, corticosteroids, subcutaneous epinephrine and intravenous fluids and was hospitalized for 8 days prior to his discharge from the hospital.[9]

For the patient in this case report, even though, he had uvula edema, the reactions were considered local, with no skin urticaria or systemic symptoms. However, the main concern of emergency situation for this patient was the swollen uvula and soft palate, due to direct stinging, which developed to partial upper airway obstruction. Antihistamine injection was given, to reduce and prevent further local reactions from remaining bee venom, which can progress to even more swollen oropharyngeal tissue, thus intubation or emergency tracheostomy would be required to secure the patient's airway.

The stinger most commonly appears as a dark barb and should be removed as quickly as possible to prevent venom load. Delay in removal may develop generalized reactions and eventually anaphylaxis. Some uncommon complications after bee sting such as tetanus and serum sickness have been observed as a later reaction results from injection of foreign protein or serum and contamination with spores of tetanus bacterium which are

widely found in soil and animal feces, thus tetanus immunization is commonly prescribed in puncture wounds in United States as well as patient education about delayed onset of hypersensitivity for the follow up.[13-14] It is fortunate that the stinger in this patient was not identified, which might be from auto-dislodgement from swallowing or spitting. However, to exercise the possibility of remaining stinger or venom, the stinging lesion along with underneath soft tissue were excised from the uvula, in which histological pathology later confirmed stromal edema with dense inflammatory cells infiltrated and no foreign body.

As for pain control for Hymenoptera sting, acetaminophen and nonsteroidal anti-inflammatory drugs (NSAIDs) such as Aspirin and Ibuprofen are indicated as pain killers, but these are not indicated for the treatment of inflammation from allergic reaction. This is due to the action of inhibition of prostaglandins and thromboxanes synthesis whereas allergic inflammation results mainly from histamines and leukotrienes.[15] Antihistamines and steroids which act by suppressing the release of histamine and polymorphonuclear (PMN) activity, are preferable drugs of choice for the treatment of Hymenoptera sting's inflammation.[16]

CONCLUSION

The uncommon incidence of bee sting at the uvula can be life threatening from the tissue swelling resulting from local reactions with or without systemic reactions of spreading venom. Management of both types of reactions should be treated as emergency situation.

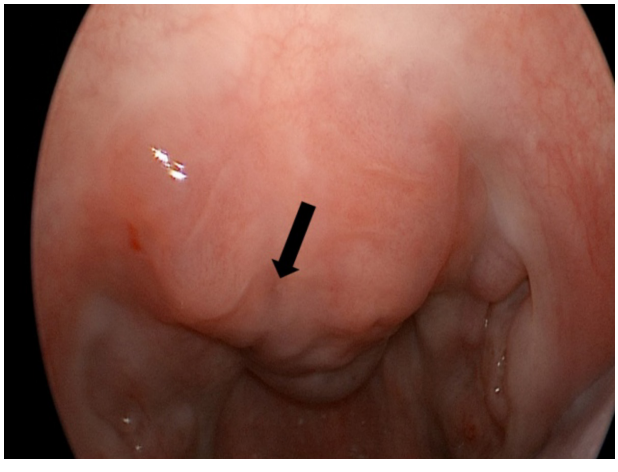

Fig 1. Swollen uvula with a visible stinging lesion. (arrow)

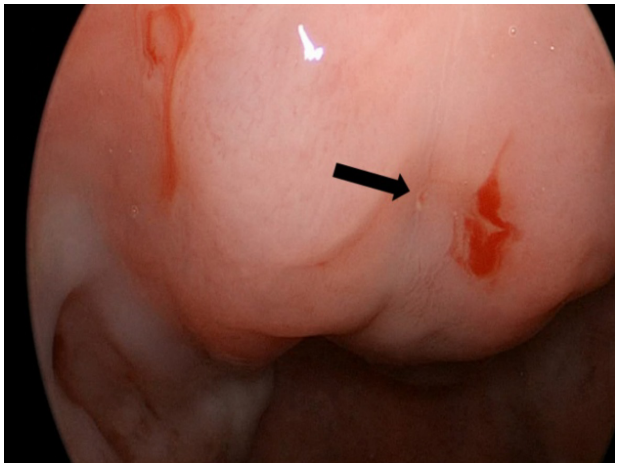

Fig 2. A close up view of the uvula showed a pinpoint penetrating lesion with blood oozing from the lesion. (arrow)

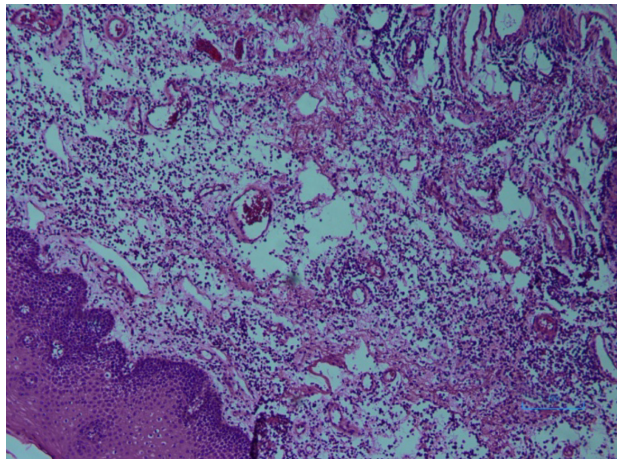

Fig 3. Fragmented squamous mucosa tissue of uvula show stromal edema with dense inflammatory cell infiltrates. No foreign body was seen. (4X objective lens)

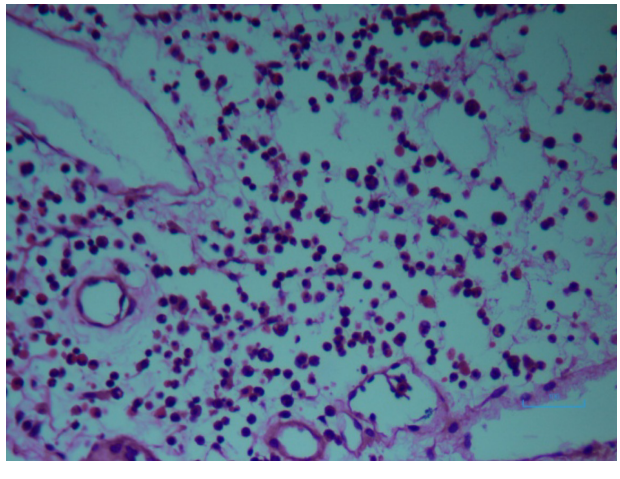

Fig 4. Inflammatory cells consist of small mature lymphocytes, plasma cells and eosinophils. (10X objective lens)

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