

Adult Respiratory Distress Syndrome after A Wasp Sting

Arı Sokması Sonrası Yetişkin Solunum Sıkıntısı Sendromu

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Abstract

Hypersensitivity reactions such as itching, urticaria, angioedema, and anaphylactic reaction are usually seen after a bee or wasp sting. In the literature, rare cases such as myasthenia gravis, peripheral neuritis, encephalomyelitis, optic neuritis, cerebral hemorrhage, myocardial infarction, and nephrotic syndrome have been reported. A 33-year-old female patient was admitted to our emergency department due to the development of dyspnea after a single bee sting. She had no complaints other than dyspnea. On her X-ray, there were bilateral patchy infiltrations. In the blood gases without oxygen, the pH was 7.3, pO₂ was 35 mmHg, pCO₂ was 30 mmHg, and saturation was 75%. Echocardiography findings were normal. She was treated in the intensive care unit under non-invasive mechanical ventilation. She was discharged with full recovery.

Key words: Respiratory Distress Syndrome, Adult, Wasp, Noninvasive Ventilation.

Özet

Bal arısı veya yaban arısı sokması sonrasında genellikle, kaşıntı, ürtiker, anjiyoödem ve anafilaktik reaksiyon gibi aşırı duyarlılık reaksiyonları görülür. Literatürde, arı sokması sonrası, myasthenia gravis, periferik nörit, ensefalomyelit, optik nörit, beyin kanaması, miyokard infarktüsü ve nefrotik sendrom gibi nadir olgular paylaşılmıştır. Otuz üç yaşındaki bayan hasta tek arı sokması sonrasında nefes darlığı nedeniyle acil servisimize başvurdu. Nefes darlığı dışında hiçbir şikâyetleri yoktu. Akciğer grafisinde, bilateral yamalı infiltrasyonları vardı. Oksijensiz alınan kan gazında, pH 7,3, paO₂ 35 mmHg, paCO₂ 30 mmHg ve saturasyonu % 75 idi. Ekokardiyografi tamamen normaldi. Yoğun bakımda alındı ve non-invazif mekanik ventilasyon başlanan hasta tedavi sonrası tamamen düzeldi.

Anahtar Sözcükler: Yetişkin solunum sıkıntısı sendromu, Yaban arısı, Noninvazif ventilasyon.

Hypersensitivity reactions such as itching, urticaria, angioedema, and anaphylactic reaction are usually seen after a bee or wasp sting. In the literature, rare cases such as myasthenia gravis, peripheral neuritis, encephalomyelitis, optic neuritis, cerebral hemorrhage, myocardial infarction, and nephrotic

syndrome have been reported. However, no cases of adult respiratory distress syndrome (ARDS) have been reported after a wasp sting. Herein, we present a 33-year-old female case of ARDS following a wasp sting.

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CASE

A 33-year-old female patient was admitted to our emergency department with dyspnea after a single wasp sting. She had no other complaints. She did not have swelling in her face or throat, skin rash or itching. Her medical history revealed respiratory distress a year ago; however, she was discharged without being taken to the intensive care unit (ICU).

While in the emergency room, her respiratory rate was 30 bpm, arterial pressure was normal, and saturation measured with a pulse oximeter was 74%. Based on these findings, she was transferred to the ICU. Chest X-ray showed bilateral patchy infiltrations observed (Figure 1). In the blood gases taken without oxygen, pH was 7.3, pO_2 was 35 mmHg, pCO_2 was 30 mmHg, and the saturation was 75%. The PO_2/FiO_2 ratio was 1.66. Her complete blood count and biochemistry tests were normal. On thoracic computed tomography (CT), there were bilateral areas of patchy ground glass and pleural effusion (Figure 2). Echocardiography findings were completely normal. The patient was suspected with an anaphylactic reaction and methylprednisolone, antihistamines, adrenalin, and NIMV were initiated. While under NIMV, oxygen saturation was around 95%. The patient was followed in the ICU for three days and transferred to the ward when the saturation remained above 90% with a respiratory rate of 15 bpm. At the end of three days, the X-ray findings improved to almost normal (Figure 3).

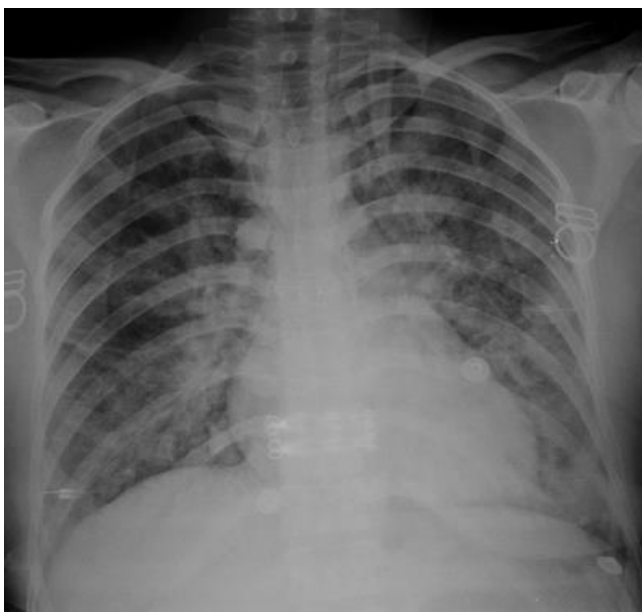


Figure 1: Bilateral patchy infiltrations on chest radiography



Figure 2: Pleural effusion and patchy ground glass areas on thoracic CT

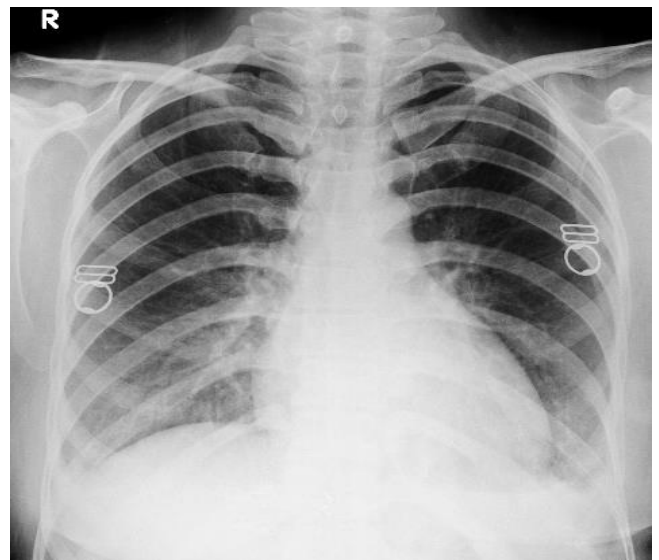


Figure 3: Almost normal chest radiography after treatment

DISCUSSION

After a wasp sting, the main symptoms include local effects such as edema, erythema and burning, and generalized effects such as itching, urticaria, angioedema, and, in rare cases, anaphylactic reaction (1). Also, rare neurological complications such as myasthenia gravis, peripheral neuritis, encephalomyelitis, optic neuritis, cerebral infarction, Parkinsonism, pontine hematoma, and thalamic and mesencephalic hemorrhage as well as cardiac complications such as myocardial infarction and renal complications such as nephrotic syndrome have been reported (2-11).

More than 50 specific conditions associated with the development of adult respiratory distress syndrome (ARDS) are recognized. The risk for development of ARDS depends on the predisposing clinical condition (i.e., some events are more likely than others to progress to ARDS) but also increases with the number of predisposing factors. Sepsis, bacterial pneumonia, multiple trauma, and aspiration pneumonia are the most common predispos-

ing factors, accounting all together for more than 70% of cases; infection is the most frequent cause (12).

While the sting of a single wasp can lead to IgE-mediated anaphylaxis, multiple wasp stings can lead to systemic reactions caused by toxin-mediated cellular injury. Wasp venom contains active amines such as serotonin and histamine and the wasp venom contains kinin and histamin-releasing peptides which may cause severe systemic toxic effects such as hemolysis, coagulopathy, rhabdomyolysis, and acute renal failure (13).

Mej'ıav'elez et al. (13) reported 43 cases of acute renal failure who developed after multiple African bee stings. They showed that renal failure developed after rhabdomyolysis. Bektaş et al. (14) presented two cases who experienced convulsions after a bee sting. In these pediatric cases, convulsion was observed six to eight hours after the bee sting. Neither of these children had a previous history of convulsion. The convulsions did not reoccur during follow-up. In another report, Yoder et al. (15) reported a 60-year-old female patient who developed intracerebral hemorrhage following multiple bee stings. The patient developed nausea, vomiting, and diarrhea, and a general feeling of being unwell two days after the bee stings. Cerebral CT revealed an intracerebral hemorrhage.

In addition, Aydın et al. (16), determined nephrotic syndrome in a three year old patient who presented with complaints of swelling around the eyes and face and edema of the body and particularly the legs eight days after a bee sting. In a 65-year-old patient reported by Mathew et al (17), acute myocardial infarction, severe rhabdomyolysis, and angioedema were detected after multiple bee stings. Yanagawa et al. (18) reported that the skin necrosis developing after a wasp sting could be an indicator of systemic toxic effects.

CONCLUSION

However, there is no reported case of adult respiratory distress syndrome developing after a wasp sting. Reported cases are the ones of respiratory insufficiency in the form of laryngeal edema, angioedema, or anaphylactic shock. In our case, ARDS developed after the single sting of a wasp on the patients arm. The patient had no complaints other than dyspnea. She had no complaints such as rash, swelling or itching. Respiratory distress developed approximately 30 min after the sting and a diagnosis of ARDS was made in the emergency room. Therefore, the patient was transferred to the ICU. Her medical and NIMV treat-

ment was arranged in the ICU. The patient completely recovered after treatment.

CONFLICTS OF INTEREST

None declared.

AUTHOR CONTRIBUTIONS

Concept - A.A., H.D., H.A., S.E.; Planning and Design - A.A., H.D., H.A., S.E.; Supervision - A.A., H.D., H.A., S.E.; Funding -; Materials - A.A.; Data Collection and/or Processing - S.E., H.A.; Analysis and/or Interpretation - A.A.; Literature Review - H.D.; Writing - A.A.; Critical Review - S.E., H.D.

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