Multiple European Wasp Stings and Acute Renal Failure

L.	Lionel	Nace
P.	Philippe	Bauer
P.	Philippe	Lelarge
P.-E.	Pierre-Edouard	Bollaert
A.	Alain	Larcen
H.	Henri	Lambert

Service de Réanimation Médicale, Hôpital Central, Nancy, France

Dr. Lionel Nace, Service de Réanimation Médicale, Hôpital Central, F-54035 Nancy Cedex (France)

Table 1. Biological data

Day

Normal values

Dear Sir,

We report a case of acute renal failure (ARF) without hemolysis or rhabdomyolysis after multiple wasp stings.

ARF after multiple stings from the *hymen-optera* species is a well-known [1] but still rare phenomenon (18 cases) [2-7] and its occurrence is exceptional in European countries with only 1 case reported [7]. Then, ARF is related to an acute tubular necrosis due to rhabdomyolysis or intravascular hemolysis.

A 56-year-old man with no history of renal disease was stung in the north-east of France by a swarm of wasps (*vespula germanica?*); between 20 and 30 stings were located on both upper limbs and the face. He was first treated with dexamethasone and H₁ histamine inhibitors.

During the first 12 h the patient felt unwell with a gastroenteritis-like syndrome. At a local hospital, 18 h after poisoning, no shock was observed.

Forty-eight hours after poisoning, he developed ARF with oligoanuria and was transferred to our intensive care unit. On admission, blood pressure was 130/60 mm Hg, uri-nalysys was normal and diuresis was restored after diuretic administration (see biological data in table 1). Moreover, no hemolysis was observed (no hemoglobinuria, free hemoglobin and haptoglobin level within normal ranges). A normal renal angiography discarded any renal vascular lesion. In spite of urine flow restoration, ARF got worse and required hemodialysis on the 3rd day. Then, renal function improved gradually and had returned to normal 3 months later. No kidney biopsy was performed.

In the literature, ARF after wasp stings is attributed to rhabdomyolysis or hemolysis.

Rhabdomyolysis seems secondary to the poi-

^a Stings. ^b Admission.

soning action of phospholipases, polypep-tides, histamine and serotonin from wasp venom [2,3,8]. In the same way, intravascular hemolysis appears related to phospholipase A and basic protein fractions [2]. In both cases, intraglomerular clotting of myoglobin or hemoglobin induces ARF.

The case reported above is quite different. Indeed, no hemolysis or rhabdomyolysis could be found. There was no sign of anaphylaxis. A functional ARF after initial hypotension could not be positively ruled out (dizziness, no data during the first 12 h); nevertheless, follow-up does not plead for this mechanism. The true pathophysiology of this ARF which suggests an acute tubular necrosis has still to be established.

So, ARF after multiple wasp stings is not necessarily due to hemolysis or rhabdomyolysis. Although there is no definite evidence of direct kidney toxicity of venom, such hypothesis cannot be excluded.

References

Renal failure caused by chemicals, foods, plants, animal venoms, and misuse of drugs. Arch Intern Med 1990;150:505-510. Sakhuja V, Bhalla A, Pereira BJG, Kapoor MM, Bhusnurmath SR, Chugh KS: Acute renal failure following multiple hornet stings. Nephron 1988;49:319-321.

Chugh KS, Sharma BK, Singhal PC: Acute renal failure following hornet stings. J Trop Med Hyg 1976;79:42-44.

Barss P: Renal failure and death after multiple stings in Papua New Guinea. Ecology, prevention and management of attacks by vespid wasps. Med J Aust 1989;151:659-663.

Mejia G, Arbelaez M, Henao JE, Sus AA, Aran-go JL: Acute renal failure due to multiple stings by Africanized bees. Ann Intern Med 1986; 104:210-211.

Humblet Y, Sonnet J, Van Ypersele de Strihou C: Bee stings and acute tubular necrosis. Nephron 1982;31:187-188.

Bousquet J, Huchard G, Michel FB: Toxic reactions induced by hymenoptera venom. Ann Allergy 1984;52:371-374.

Elgart GW: Ant, Bee and wasp stings. Dermatol Clin 1990;8:229-237.