

CAMEO

ACUTE URTICARIA CAUSED BY PIGEON TICKS
(*ARGAS REFLEXUS*)

STEFANO VERALDI, M.D.,

GABRIELE SCARABELLI, M.D., AND RAMON GRIMALT, M.D.

A 28-year-old man was admitted to our institute because of acute urticaria appearing a few hours earlier. The patient stated that during sleep he had been bitten by a large number of "insects," which had dropped from wooden ceiling beams under the roof of his room. The patient was living in the center of Milan in a very old house, where numerous pigeons had built their nests under the rooftop. The patient brought along with him some examples of these "insects," which were later classified as pigeon ticks (*Argas reflexus*) (Figs. 1, 2). Dermatologic examination revealed the presence of numerous wheals and erythematous-papular lesions on the neck and trunk. These lesions were of different shapes and sizes, bright red in color, and with a small central ulceration corresponding to the tick bite. In addition, there were numerous excoriated lesions due to scratching; the patient in fact complained of very intense pruritus. The general physical examination was within normal limits.

Laboratory examinations revealed only slight leukocytosis (9300 wbc/mm^3). All other laboratory tests were negative; in particular, the assay for anti-*Borrelia burgdorferi* IgG and IgM was within normal ranges ($< 1:256$ and $< 1:64$, respectively). These results were confirmed on subsequent blood samples. Positive radioallergosorbent tests (RAST) to a somatic extract and to the saliva of the tick were observed.

A diagnosis of acute urticaria caused by *A. reflexus* was made. The patient was treated with betamethasone (4 mg intravenously) and chlorpheniramine (10 mg intramuscularly), with resolution of the clinical picture within 3 days.

DISCUSSION

Ticks are blood-sucking parasites of vertebrates. In particular, *A. reflexus* (Fabricius, 1794) is a tick belonging to the *Argasidae* family that usually lives as parasite in pigeons (*Columba livia domestica*), but that can also be parasitic to other birds, such as chickens. It has a cosmopolitan distribution, being more frequent in warm climates. In Europe, the marked demographic growth of pigeons in the cities has increased the number of ticks and hence the risk of contamination of do-

From the Institute of Dermatological Sciences, IRCCS University of Milan, Milan, Italy.

Address for correspondence: Stefano Veraldi, M.D., Institute of Dermatological Sciences, IRCCS University of Milan, Via Pace, 9, 20122 Milan, Italy.

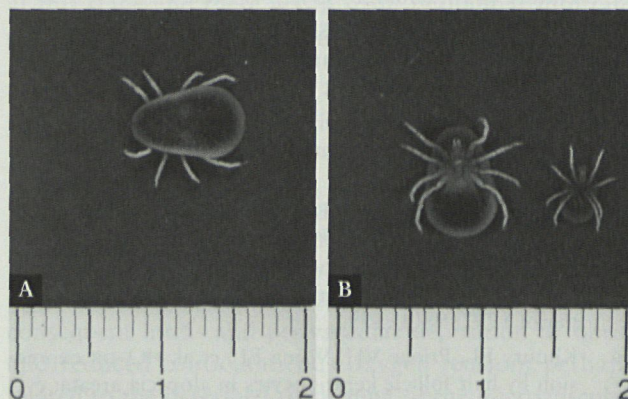


Figure 1. A, *Argas reflexus*: dorsal surface. B, *Argas reflexus*: ventral surface.

mestic environments and human infestation.^{1,2} It is possible that ticks attack man, especially when the number of pigeons is drastically reduced.^{2,3}

Characteristics of *A. reflexus* are: (1) the ability to lay many eggs (up to 700);⁴⁻⁶ (2) the ability to survive long periods of fasting^{1,2}; according to some authors⁶ *A. reflexus* can survive without food for as long as 7 years; this fact permits the tick to survive long in a hostile environment; (3) its inactivity during the day: the tick attacks man especially at night;²⁻⁶ and (4) the rapidity with which *A. reflexus* consumes its meal (a few minutes);³ blood-filled ticks can reach 2 cm in length.⁷

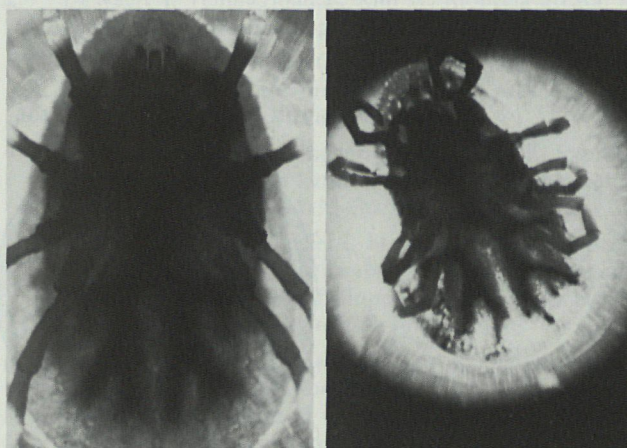


Figure 2. *Argas reflexus*, an example of soft-bodied tick.

The bite of *A. reflexus* can cause various cutaneous and systemic manifestations. Local cutaneous manifestations are pain and pruritus at the site of the bite, wheals and erythematous-papular lesions with a central puncture;^{4,5,7} more rare are papular-vesicular, nodular (with histopathologic picture of a granuloma⁸), hemorrhagic, ulcerative, and necrotic lesions.⁷ Furthermore, rare cases of transient alopecia appearing at the site of the bite have been described: the pathogenesis of this form is unknown.^{7,8} Generalized cutaneous manifestations are characterized by pruritus, urticarial rash, and frank urticaria.^{1,4-7,9}

Concerning systemic manifestations, some cases of anaphylactic shock have been described.^{2,4-6,10,11} The pathogenesis of urticaria and anaphylactic shock is IgE-mediated (type I immunoreaction according to Gell and Coombs).^{1,2,4-6,9} Cagnoli et al.¹ have shown that in sensitized subjects there is a production of IgE to a somatic extract of the tick (called antigen A) and to the saliva of the parasite (called antigen B); but RAST to the latter antigen would be a more sensitive test.

DRUG NAMES

betamethasone: Celestone

chlorpheniramine maleate: Chlormene, Chlorophen,

Chlor-pen, Chlor-Trimeton Maleate, Phenetron

REFERENCES

1. Cagnoli M, Riva G, Sioli C, et al. Impiego del RAST nella diagnosi di lesioni da morsicatura della zecca del piccione, *Argas reflexus* reflexus Fabricius 1794. G Mal Infett Parassit 1985; 37:1125-1128.
2. Dautel H, Kahl O, Knulle W. The soft tick *Argas reflexus* (F.) (Acar, Argasidae) in urban environments and its medical significance in Berlin (West). J Appl Entomol 1991; 111:380-390.
3. Genchi C. Arthropoda as zoonoses and their implications. Vet Parasitol 1992; 44:21-33.
4. Albertini G, Garavelli L, Lo Scocco G, Bisighini G. Patologia da *Argas reflexus*: descrizione di due casi e recenti acquisizioni. Chron Dermatol 1988; 19:383-387.
5. Albertini G, Avanzini P, Garavelli L, Bisighini G. Su due casi sporadici di shock anafilattico da veleno di *Argas reflexus*. Folia Allergol Immunol Clin 1988; 35: 357-359.
6. Zerboni R, Campi P, Manfredi M, et al. Manifestazioni allergiche da puntura di *Argas reflexus* (zecca dei piccioni). Folia Allergol Immunol Clin 1985; 32:343-348.
7. Marshall J. Ticks and the human skin. Dermatologica 1967; 135:60-65.
8. Canizares O. Clinical tropical dermatology. Oxford: Blackwell Scientific, 1975:237.
9. Tosti A, Peluso AM, Spedicato S. Urticaria-angioedema syndrome caused by an *Argas reflexus* sting. Contact Dermatitis 1988; 19:315-316.
10. Coudert J, Battesti MR, Despeignes J. Un cas d'allergie aux piqures d'*Argas reflexus*. Bull Soc Pathol Exot 1972; 65:884-889.
11. Miadonna A, Tedeschi A, Leggieri E, et al. Anaphylactic shock caused by allergy to the venom of *Argas reflexus*. Ann Allergy 1982; 49:293-294.

19th Century Concepts of Drug Eruptions

If we know little of the laws of drug action, we know still less of the laws which govern individual susceptibilities. We do know that in the antagonism between these forces, the latter is often dominant and supreme, and that the effects of drugs are especially subordinate to conditions of aptitude inherent in the individual. Leaving out of consideration for the present that mysterious factor expressed by the term idiosyncrasy, let us examine the various theories which have been put forward as to the mechanism of the production of these eruptions.

In the first place, it may be said that an explanation of these incidental cutaneous phenomena has been sought for in the *quality of the drug*. It was naturally inferred that the production of unusual drug effects must be caused by an impurity of the agent used, due to its faulty mode of preparation or its accidental admixture with toxic principles, etc. With this view, other preparations of the same drug have been substituted, the alkaloid for the crude drug, and *vice versa*, with the result of the production of identical irritant effects upon the skin. So that the assumption of a possible impurity of the drug as the efficient cause of these irritant effects upon the skin must be dismissed as groundless and disproved by careful experimentation. *From Morrow PA. Etiology and pathogenesis of drug eruptions. J Cutan Vener Diseases* 1885; 3:133-135.

This document is a scanned copy of a printed document. No warranty is given about the accuracy of the copy. Users should refer to the original published version of the material.