

A human case of tick bite by *Ixodes nipponensis*

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Abstract: A human case of the tick bite on the back of 36-year-old man was found in September 1995. On admission he complained of itching sensation and pain at the site. The removed tick was identified morphologically as *Ixodes nipponensis*.

Key words: *Ixodes nipponensis*, tick bite, human case

Ticks are primarily parasites of wild animals and about 10% of the species feed on domestic animals. Many ticks feed opportunistically on humans and transmit viral, rickettsial, bacterial and protozoal diseases such as Rocky Mountain spotted fever, Colorado tick fever, tick-borne encephalitis, Kyasanur forest disease, Q fever, Japanese spotted fever and Lyme disease. *Borrelia burgdorferi*, the causative agent of Lyme disease was isolated from *Ixodes persulcatus* (Park *et al.*, 1992), and from *I. nipponensis*, *I. granulatus* and *Apodemus agrarius* (Kee *et al.*, 1994). Besides the transmission of diseases, tick bites are irritating to man and cause dermatoses. The insertion of the mouthpart (gnathosoma) into the skin produces an inflammatory reaction, and in many cases the mouthparts are torn off and left in the wound. Such an injury often becomes infected, producing an inflamed sore or ulcer.

Since Kang *et al.* (1982) reported the first human case of the tick bite, total 16 cases have been recorded so far in Korea (Cho *et al.*, 1985; Lee *et al.*, 1989; Chang *et al.*, 1991; Cho

et al., 1991, 1994 & 1995). This report is the 17th human case of the tick bite.

Case Report: A 36-year-old Korean business man felt discomfort and itching sensation on the back for a few days. At one week before admission, he visited Mt. Solak and he was probably attacked by a tick when he felt prickling on the back during sleeping on the floor of an old condominium. When an attempt was made to pull the tick off, the gnathosoma was broken off and left in the skin. The patient refused the offer of removing the remaining part of the tick.

The idiosoma (body) of the tick was oval and the color was brown (Fig. 1). Scutum is rounded and oval with slightly developed scapulae, and its surface especially the peripheral portion is more or less evenly punctate and covered with sparse hair. Peritreme (air breathing pores) is rounded and oval. Internal spur of the coxa I was long, slightly overlapping on anterior margin of coxa II (The right side of coxae I of Fig. 1). The internal spur of the left coxa I was not overlaid on the edge of coxa II (Fig. 2), because the coxa I moved forward before fixed. The external spur of coxa I was very short and inconspicuous, and each of coxa II-IV has one short external spur (Fig. 2). Anal groove was found

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Fig. 1. Ventral view of the removed tick

anterior to the anus. Genital opening is straight and located on the level of coxa IV. Postscutal marginal body setae was scaled and most of them were forked. These characteristics are typical features of *I. nipponensis* female. *Ixodes nipponensis* is quite similar to *I. persulcatus*, but can be distinguished in that the internal spur of coxa I is shorter and does not cover a third of coxa II (that of *I. persulcatus* is longer, more sharply pointed and covered a third of coxa II).

Yamaguchi (1989) reported that total 516 cases of human tick bites were described during the period of 1927~1988 in Japan, showing the occurrence mostly from April through October with the peak in July, and that *I. ovatus* was the commonest species among 15 reported species of human bite. In Korea, one case was caused by *I. ovatus*, one by *I. persulcatus*, one by *Haemaphysalis flava*, nine by *I. nipponensis* and the rest (five cases) by unidentified tick species (Cho *et al.*, 1985; Lee *et al.*, 1989; Chang *et al.*, 1991; Cho *et al.*, 1991, 1994 & 1995).

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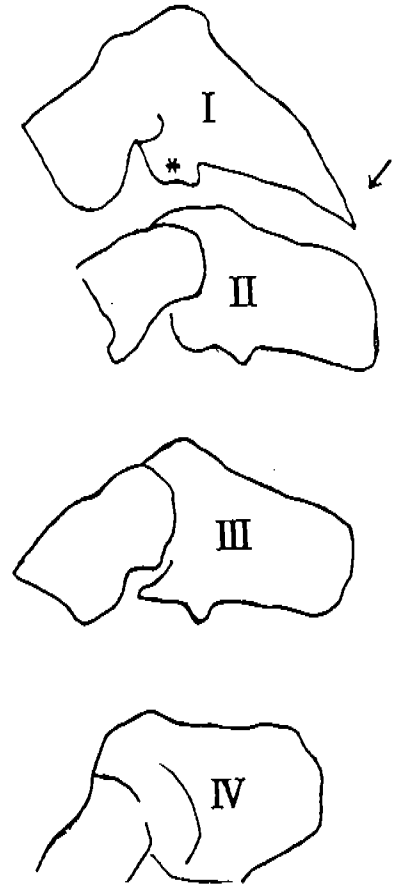


Fig. 2. A schematic drawing of left coxae of the tick. Internal spur (arrow) of first coxa is longer and stronger than the external spur (asterisk). The tip of the internal spur does not overlay on the edge of coxa II because the coxa I moved forward.

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=초록=

일본참진드기 (*Ixodes nipponensis*)에 의한 인체 교상 1예

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36세된 서울 거주 남성이 등에 혹을 주소로 내원하였다. 환자는 내원 1주전에 설악산 여행에서 콘도미니엄 바닥에 취침 중 등에 따끔함을 느꼈고, 그 후 그 부위에 소양감이 있었다고 한다. 이 총체를 핀셋으로 떼어내어 Hoyer's mounting media로 초자표본을 제작하여 현미경 하에서 관찰한 결과 구부 (gnathosoma)는 소실되었으나 제1기절 (coxa I)의 내측돌기 (internal spine)의 형태 등으로 일본참진드기 (*Ixodes nipponensis*) 자성충으로 동정하였다.

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