Outbreak of Japanese Spotted Fever in the Southeastern Part of Awaji Island

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Since the first patient with Japanese spotted fever (JSF) was reported in 19841), a number of cases have been reported in all parts of Japan. However, this disease frequently occurs on the Pacific coast of Honshu, showing an uneven distribution. In 1999, a nationwide survey by the Infectious Disease Surveillance Center reported 34 cases by December.

The Yuzuruha mountain range in southern Awaji Island is an area in which Rickettsia japonica is endemic2), and one to three patients are diagnosed with JSF in our hospital every year. In 1999, 9 patients with JSF were serologically identified. Erythema was noted in all patients, but obvious lymph node swelling was observed in only one, and eschar was noted in only 3 patients. One patient had concomitant DIC. The specific antibody titer was measured using immunofluorescence with R. japonica YH strain-infected cells in the National Institute of Infectious Diseases and the Hyogo Prefectural Institute of Public Health, and showing significant increase of the specific antibody titer in all cases. The locations where patients had been infected were concentrated in the forest land of the southeastern part of Awaji Island. Six employees of one company who had worked together in the forest simultaneously developed the illness, exhibiting high fever and eruptions. These cases were known when clinically diagnosed cases were included (one had been serologically diagnosed with JSF). Thus, mass outbreaks are also noted.

Among serologically diagnosed patients, 2 patients in 1998 and 4 patients in 1999 who developed the disease had all lived in the same area for 10 years or more, though they had various occupations and leisure activities. Considering that lifelong immunity is acquired after rickettsial infection, this result suggests that the high incidence of JSF is attributable not only to an expanded area of daily activity of humans, but also to the influence of vectors, namely, an expanded endemic area, increased degree of endemism, which may be due to the global warming. Therefore, public health measures seem to be necessary. Part of the area showing this high incidence is designated as a national park, so crop dusting to control pine weevils is not performed as it is in the surrounding areas, which may contribute to an abnormal number of ticks to serve as vectors. Since it is possible that people may be infected in Awaji Island and
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Fig. Distribution of locations of infected patients in the southeastern part of Awaji Island

develop the illness after they leave the island, the presence of JSF needs to be recognized in medical institutions in non-endemic areas as well.

References