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Isolation of Enterovirus 71 from Patients with Hand, Foot and Mouth Disease in a Local Epidemic on March 2006, in Miyagi Prefecture, Japan

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Hand, foot and mouth disease is an infectious disease commonly seen in children in the summer. Enterovirus 71 (EV71), one of the causative agents of hand, foot and mouth disease, causes more pronounced central nervous system complications than the other causative viruses. In this study, we investigated an outbreak of hand, foot and mouth disease that occurred in the northern region of Miyagi Prefecture, Japan in March, 2006 (Fig. 1).

According to the epidemiological information, the first case was reported at week 10 of the year, and new cases continued to be reported until week 23 (Fig. 2). However, in the other area of Miyagi Prefecture, no cases of hand, foot and mouth disease were reported.

EV71 was isolated from one stool specimen from a 2-year-old boy, and from 4 oral swab specimens from a 1-year-old girl, 3-year-old girl, 1-year-old boy and 2-year-old girl. These

patients all had rash as their main symptom.

HEP-2, RD-18S, Vero and CaCo-2 cells were used for virus isolation. EV71 was isolated from the stool specimen using RD-18S, and from oral swab specimens using CaCo-2 cells. The isolated virus was confirmed to be EV71 by amplification of the VP4-VP2 genome by RT-PCR and nucleotide sequencing. The first 3 cases were diagnosed with hand, foot and mouth disease before the epidemic became apparent, and provided important information for hospitals and public health institutes in the prefecture.

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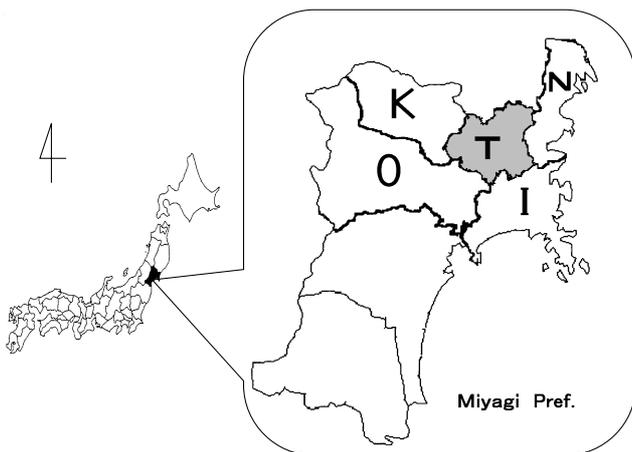


Fig. 1. Location of Miyagi Prefecture, Japan. The region indicated in gray is the area where the epidemic occurred.

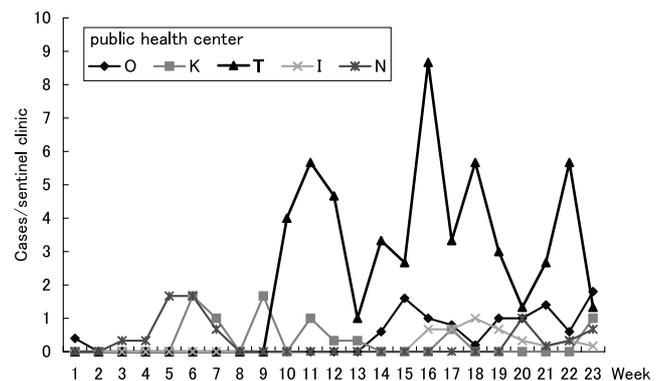


Fig. 2. Weekly number of cases of hand, foot and mouth disease per pediatric sentinel clinic in Miyagi from the 1st to the 23rd week in 2006.

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