野生ニホンカモシカにおけるパラポックス感染症の流行

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Widespread of Parapox Infection in Wild Japanese Serows, *Capricornis Crispus*

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ABSTRACT. An outbreak of parapox infection was observed in 155 out of 402 serows captured in various parts of Gifu Prefecture from Dec. 1984 to Mar. 1985. Nodular or papular lesions were mainly located in the naso-oral, external genital, udder and auricular parts. Histopathologically, the lesions were characterized by acanthosis with cytoplasmic inclusion bodies. Electron microscopically, viral particles were also confirmed in ballooning cells. Widespread of the disease in wild Japanese serows has never been reported.—KEY WORDS: parapox infection, serows.

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Since the first case was found in Akita Prefecture in 1976 [2], sporadic occurrences of parapox infection in Japanese serows have been reported around the Tōhoku district [3, 4, 5]. In 1979, acute infection of the disease among the animals in captivity was also reported [1]. Up to 1984, an outbreak of the disease in wild Japanese serows was encountered in Gifu Prefecture for the first time. The purpose of the present study is to describe the occurrence and pathological findings of the disease, and to contribute to the literature on wild animal disease which has been little reported in Japan.

Materials subjected to the present study consisted of 402 cases including fawns, yearlings and adults captured from Dec. 1984 to Mar. 1985.

Macro- and microscopic lesions in the present investigation were similar to those described in the previous reports on papular stomatitis [1] or contagious papular dermatitis [3, 4]. Nodular or papular lesions were mainly located in the naso-oral, external genital, udder and auricular parts (Figs. 1, 2, 3], and rarely found in the mucosa of the esophagus and rumen. However, the lesions could not be observed in the trunk and limbs. The distribution mode of the lesions suggests that the following factors, such as

Fig. 1. Multiple lesions in naso-oral area.

Fig. 2. Diffuse lesion in gingiva.

Fig. 3. Sporadic lesions with scabs in udder.

eating, suckling and copulation, have a role in the widespread infection at this time. Moreover, frequent bites by numerous mites in the auricular area must not be overlooked as a predisposing factor in the development of the disease. Histopathological changes were characterized by acanthosis of the mucosa and dermis with spherical eosinophilic or basophilic cytoplasmic inclusion bodies (Fig. 4). Electron microscopically, mature and immature viral particles could be seen in the swollen prickle cells. In the negatively stained specimens, viral particles measuring 360 by 200 nm with fine crisscross pattern typical of the parapox virus groups were confirmed.

As shown in Fig. 5, the disease widely distributed in Gifu Prefecture, especially in two districts, Nakatsugawa and Kamiyahagi located in the southern area along the Kiso River. Further epidemiological survey may clarify the environmental conditions of the serows in these regions.

Monthly fluctuation of the disease was

Fig. 4. Marked acanthosis in hard palate. ×60. Insert. Intra-cytoplasmic inclusion bodies (arrows). ×320.

Table 1. Occurrence of parapox infection

Region	Dec. 1984	Jan. 1985	Feb. 1985	Mar. 1985	Total
Kamiyahagi	10/ 15(67%)	13/ 18(72%)	1/ 2(50%)	Uncaptured	24/ 35(69%)
Nakatsugawa	11/ 17(65%)	3/ 4(75%)	6/15(40%)	0/ 2(0%)	20/ 38(53%)
Kawaue	1/ 7(14%)	2/ 10(20%)	1/ 4(25%)	3/ 8(38%)	7/ 29(24%)
Tsukechi	4/ 12(33%)	3/ 12(25%)	1/ 8(13%)	1/ 3(33%)	9/ 35(26%)
Kashimo	2/ 5(40%)	7/ 17(41%)	2/ 7(29%)	2/ 2(100%)	13/ 31(42%)
Gero	4/ 6(67%)	8/ 17(47%)	0/ 5(0%)	1/ 1(100%)	13/ 29(45%)
Hagiwara	6/ 13(46%)	7/ 16(44%)	1/ 9(11%)	0/ 2(0%)	14/ 40(35%)
Osaka	8/ 31(26%)	14/ 29(48%)	6/13(46%)	2/ 5(40%)	30/ 78(38%)
Kukuno	Uncaptured	4/ 13(30%)	0/ 4(0%)	Uncaptured	4/ 17(30%)
Takane	10/ 16(63%)	8/ 25(32%)	2/20(10%)	1/ 9(11%)	21/ 70(30%)
Total	56/122(46%)	69/161(43%)	20/87(23%)	10/32(31%)	155/402(39%)

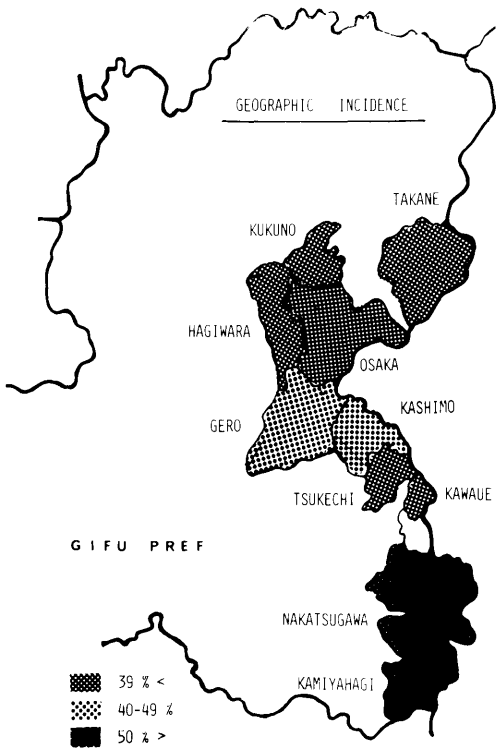

Fig. 5. Distribution of cases in Gifu Prefecture.

shown in Table 1. In addition to high incidence, macroscopic lesions were also severe in Dec. 1984 to Jan. 1985. Of the animals infected, however, few serows suffered from violent lesions which were thought to be eventually fatal. Thereafter, both the occurrence and severity of the lesions gradually decreased with time. These results suggest that the widespread of the disease at this time had no direct effect on the decrease of the serow population.

During the 7 years' investigations from 1979 to 1985, serows suffering from parapox infection were first discovered by autopsy in Dec. of 1984. Therefore, the invasion of the parapox agent in Gifu Prefecture must have occurred around fall to winter in 1984, which coincided with the serow breeding season. Consequently, ecological factors may also play an important role in the dissemination of the disease at this time.

Results of serum-antibody fluctuation and characteristics of isolated parapox virus from the present materials will be reported in another paper.

A part of these observations was preliminarily communicated at "International Symposium on Capricornis and its related species" held in May, 1986 at Komono, Japan.

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要　　約

野生ニホンカモシカにおけるパラポックス感染症の流行（短報）：鈴木義孝・杉村　誠・阿閉泰郎・源　宣之[1)]・金城俊夫[1)]（岐阜大学農学部家畜解剖学教室，[1)]獣医公衆衛生学教室）——1984年12月～1985年3月までの冬季に，岐阜県下で捕殺されたニホンカモシカ402例中155例に丘疹性ないし結節性病変を示すパラポックス感染症の大流行があった。病変は口唇，舌，口蓋，耳介，外陰部，乳房等に主座し，組織学的には封入体形成を伴う棘細胞増多症によって特徴づけられ，電顕的にもウイルス粒子の存在を確認した。