

## Clinical Features of Skin Lesions in Rabbit Syphilis: A Retrospective Study of 63 Cases (1999–2003)

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**ABSTRACT.** Skin lesions in rabbit syphilis are usually diagnostic, but it is occasionally difficult to differentiate these lesions from those of other skin diseases. Skin lesions in 63 cases of rabbit syphilis were analyzed for early and accurate diagnosis. Lesions were found most frequently around the nose (55 cases) followed by the genitalia (22), lips (20), eyelids (12), and anus (10). Sneezing was observed in 33% of cases with nasal lesions. In cases of maternally acquired infection, lesions could be initially found mainly on the face. Rabbits should be examined carefully not only for facial lesions, but also for lesions of the genitalia and anus, locations easily overlooked.

**KEY WORDS:** nose, rabbit syphilis, skin lesion.

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Household rabbits with syphilis caused by *Treponema paraluis-cuniculi* are occasionally encountered in clinics. We previously reported the clinical signs of rabbit syphilis in 16 maternally infected household rabbits [11]. Facial lesions were observed in all 16 cases and lesions around the genitalia and/or anus were seen in 8 cases. Sneezing was noted in 6 cases.

Skin lesions in rabbit syphilis are usually diagnostic [4–8], especially when accompanied by remarkable erythema and conspicuously accumulated crusts. However, obscure syphilitic lesions are also occasionally seen in the early stages of disease or in mildly infected animals. Moreover, there are many skin diseases that may be confused with syphilis [12]. The skin lesions are occasionally complicated and undistinguishable from those of other diseases such as dermatophytosis, pyoderma, and acariasis [5–8,13]. Suspected cases of rabbit syphilis should be diagnosed with serological tests and through their response to chemotherapy. Generally, the lesions of rabbit syphilis show notable improvement after administration of chloramphenicol for three days. However, a tentative diagnosis from clinical signs is still very important. Therefore we retrospectively evaluated the clinical signs in 63 cases of rabbit syphilis in order to improve the early and accurate diagnosis of this disease.

Sixty-three rabbits visiting the Saito Rabbit Clinic (Kita-ku, Tokyo) from September 1999 to August 2003 were diagnosed as rabbit syphilis based on clinical signs and the responses to chemotherapy. Many of these cases were confirmed by rapid plasma reagin (RPR) testing using the RPR test Kokusai (International Reagents Corporation, Kobe, Japan) [12], although the 25 cases treated before March 2001 were not confirmed with this test. Although some rabbits relapsed with lesions appearing in different skin regions, we analyzed the clinical signs at the time of disease onset.

The age of disease onset in these 63 cases ranged from 3

to 49 months with an average age of 9.3 months and a median age of 7 months. Syphilis was diagnosed in twenty-six males (41.1%) and thirty-seven females (58.9%). Seven rabbits had mated before disease onset, while 56 rabbits had no mating history. Five cases were diagnosed in 1999 (September to December), 14 in 2000, 12 in 2001, 21 in 2002, and 12 in 2003 (January to August).

Lesions around the nose (55 of 63 cases, 87.3%) were detected most frequently, followed by lesions of the genitalia (22, 34.9%), lips (20, 31.7%), eyelids (12, 19.0%), and anus (10, 15.9%) (Fig. 1). Sneezing was observed in 18 of 55 cases (33%) with nasal lesions, and sneezing was absent in cases without nasal lesions.

The distribution of lesions when divided into facial lesions (nose, lips and/or eyelids) and genital area lesions (genitalia and/or anus) is shown in Fig. 2. The distribution of the facial lesions is shown in Fig. 3a, and the genital area

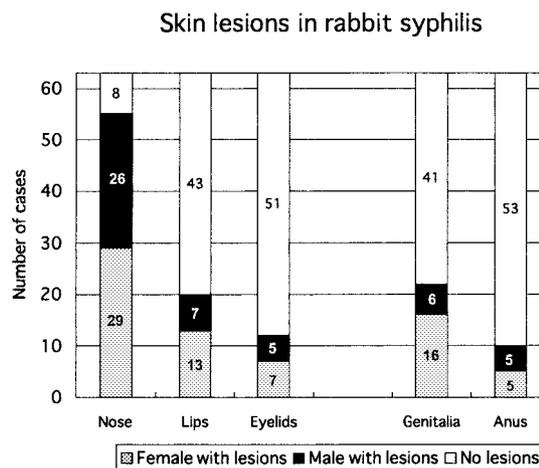


Fig. 1. Skin lesions in rabbit syphilis. The figures in the column indicate the numbers of cases without lesions (□), males with lesions (■) and females with lesions (▨).

Distribution of lesions on face and genital areas

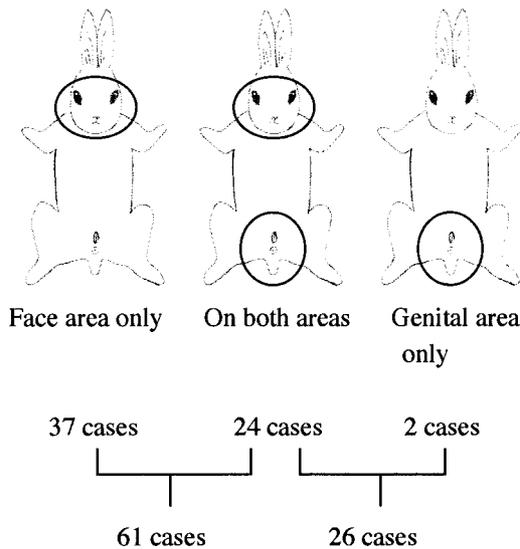


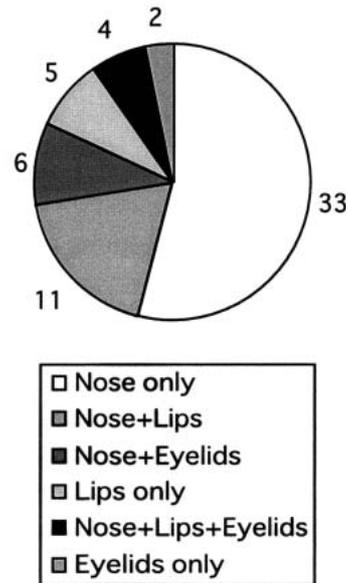
Fig. 2. The number of cases with lesions only on the face, on both areas and only on the genital area. The total number of cases with facial lesions was 61 and 26 animals had lesions on the genital area.

lesions in Fig. 3b.

In a previous report examining laboratory rabbits from a commercial rabbitry, lesions around the genitalia were seen most frequently, followed by lesions on the anus, nose, eyelids, and lips in descending order [2]. Another report indicated that lesions on the genitalia were present in all 10 rabbits from commercial rabbitries, and lesions on the anus, lips, and nose were rarely observed [3]. However, in this study lesions were most frequently seen around the nose (87.3%) (Fig. 1). As shown in Fig. 2, the number of cases with facial lesions was 61 (96.8%) whereas lesions of the genital area were seen in only 26 cases (41.3%). The number of cases without lesions in the genital area (i.e. only with lesions of the face) was 37, a majority (58.3%) of cases. Variations in the regional distribution of skin lesions between this report and previous reports [2, 3] might be explained by differences in the route of infection. Fifty-six rabbits out of 63 in this study had no mating history. Commercial rabbits might be infected mainly during mating, whereas household rabbits might be maternally infected in many cases.

Lesions on the nose and lips frequently coexisted (Fig. 3a). Since the number of nasal lesions was significantly greater than the number of lip lesions (Fig. 1), it is likely that these lesions might spread from the nose to the lips. However, five rabbits had lip lesions without nasal lesions (Fig. 3a). Lesions on the nose and lips must be differentiated from dermatophytosis, pyoderma, trauma, moist dermatitis, and acariasis [5-8, 13]. Lesions on the eyelids were found

a Number of cases with facial lesions



b Numbers of cases with lesions on genital area

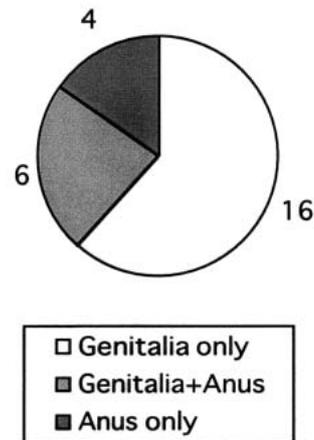


Fig. 3. Figure 3a shows the distribution of the facial lesions and Fig. 3b shows the genital area lesions. Facial lesions include the lesions on nose, lips and eyelids. Genital area lesions include the lesions on the genitalia and anus. The cases with lesions only on nose were most common in the animals with facial lesions, and lesions of the genitals were more common than lesions of the anus or both.

in 12 of 63 cases (19%), and most of which (10 of 12) showed lesions on the nose at the same time. However, one rabbit had lesions on the eyelids and genitalia, while another had lesions only on the eyelids. Since lesions on the eyelids

resemble those of acariasis and dermatophytosis, a differential diagnosis is required. Sneezing was observed in 33% of cases with nasal lesions, but was not seen in cases lacking nasal lesions. Therefore, rabbits with sneezing should be carefully examined for skin lesions.

Genital lesions usually predominate and frequently coexist with anal lesions, and the number of genital lesions was greater than that of anal lesions. However, four rabbits only had anal lesions (Fig. 3b). Lesions of the genitalia and anus should also be differentiated from those of pyoderma, moist dermatitis, and acariasis [1, 5–8, 13].

When dermatophytosis is suspected, a diagnosis may be established by microscopic examination or culture test. However, detecting an active infection of dermatophyte does not necessarily rule out rabbit syphilis, since rabbit syphilis is complicated by dermatophytosis in some cases [10]. Pyoderma, including moist dermatitis, occasionally can be differentiated from syphilis by observation of the lesion distribution. If the lesions coexist on the face and genital area, rabbit syphilis is highly suspected, since pyoderma typically does not coexist on both areas. Acariasis is very rare in rabbits [9], and it can be differentiated from syphilis by detecting the mites or a response to empiric treatment with acaricide.

Facial lesions are easily found on physical examination. Veterinarians should examine the genitalia and anus for syphilitic lesions, even when a rabbit appears healthy, although only 2 of 63 cases here had lesions on the genitals without facial lesions. Not only the face, but also the genitalia and anus, should be carefully examined for lesions when suspected lesions are seen on the face, since a diagnosis is more reliable if skin lesions coexist on the face and

genital area.

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