NOTE Internal Medicine

Rabbit Syphilis Diagnosed Clinically in Household Rabbits

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ABSTRACT. This paper deals with 16 cases presented from April to December 2001 and diagnosed clinically as rabbit syphilis, because they showed distinct lesions around the nose and/or mouth, responded to chemotherapy, and the “Rapid Plasma Reagin” test was positive. Twelve cases exhibited initial symptoms and four were relapses. Lesions around the genitalia and/or anus as well as the nose and/or mouth were seen in 8 cases, and 6 cases indicated sneezing. Fifteen cases were successfully treated with oral administration of chloramphenicol, and one was treated with long-acting penicillin by intramuscular injection. The mean age of onset was 8.8 months. As none of these cases had any mating history, the disease was likely to be maternally transmitted.

KEY WORDS: clinical sign, rabbit syphilis, Treponema.

Rabbit syphilis is a venereal disease caused by Treponema paraluiss-cuniculi. The characteristic lesions, including papules, ulcerations, and scabs on genitalia, nose, mouth, and eyelids, are highly diagnostic, and the disease also causes abortion, metritis, and infertility in female rabbits [4, 5, 7–9]. For clinical examination, darkfield microscopy of skin scrapings and silver staining of biopsy samples are indicated for detecting antibodies [1, 5, 7–9].

Rabbit syphilis in household rabbits has not been reported in Japan, and the incidence is unknown. This paper deals with 16 cases diagnosed clinically as rabbit syphilis and cured with antibiotics.

We unsuccessfully attempted to detect the pathogenic organism in skin samples by darkfield and black-ink microscopy. Sampling was difficult, as the animals strongly dislike scraping of the lesions around the nostrils and lips. Therefore, diagnosis was based mainly on clinical signs and the response to tentative treatment, and was confirmed by the Rapid Plasma Reagin (RPR) test.

The cases were identified from animals visiting the Saito Rabbit Clinic (Kita-Ku, Tokyo) and Saito Animal Hospital (Saitama-shi, Saitama) from April to December 2001. The cases were diagnosed from clinical signs and response to chemotherapy. The clinical signs detected were distinct lesions from papules, ulcers, and/or scabs around the nose and mouth. They were successfully treated with antibiotics (chloramphenicol and penicillin) known to be effective against the spirochete causing rabbit syphilis [3, 5, 7–9].

When the characteristic skin lesions had improved within a week of starting treatment, a clinical diagnosis of syphilis was made. In all cases, a RPR test using “RPR test Koku-sai” (International Reagents Corporation, Kobe, Japan) was carried out.

Sixteen cases were clinically diagnosed as rabbit syphilis during this period; twelve cases showed clinical signs initially (initial group), and four were relapsed cases (relapse group). Relapsed cases showed symptoms 5 months to 1 and a half years earlier and had already recovered once following treatment. The incidence of rabbit syphilis cases at these hospitals during this period was estimated to be about 0.65%.

Profiles, clinical signs, and the result of the RPR test of each case are shown in Table 1. The age of onset ranged from 3 months to 2 years and 2 months (mean of 8.8 months), and six cases were male and ten were female. Lesions around the genitalia and/or anus as well as around the nose and/or mouth were seen in 8 cases. Typical lesions around the nose and mouth are shown in Figs. 1 and 2, and lesions around the genitalia and anus are shown in Fig 3. Six cases also indicated sneezing that subsided completely after treatment (Table 1).

Of the 16 cases, 14 rabbits were purchased at pet shops. Six were of pure stock (Netherland Dwarf: 4, American Fuzzy Lop: 1, Dutch: 1) and 8 were mongrels (Table 1). In the other 2 cases, 1 was a mongrel rabbit taken from the owner’s friend who had bred rabbits, and another mongrel was of unknown source.

Initial signs of disease were evident at a young age (the mean was 8.8 months old), and none of the rabbits had any mating experiences. Therefore, we inferred that the infection was maternally contacted. Clinical signs are shown in Table 1. Lesions around the nose and/or mouth were seen in all cases, lesions around the genitalia and/or anus were observed in 8 cases, and sneezing was noted in 6 cases. Maternally-acquired infection may initially manifest as lesions on the nose and/or mouth, and then the organisms may spread to the genitalia and/or anus by ingestion of ceropathous or grooming, or spread from the nostrils to the nasal mucosa resulting in signs of rhinitis, such as sneezing.

The results of the RPR test were positive in all 16 cases (Table 1). The RPR test is used to detect syphilis antibodies in human serum and has been shown to be useful for detecting rabbit syphilis [1–3]. All 16 cases showed a positive RPR test suggesting that the test results agree well with the diagnosis based on clinical signs and response to treatment.
Although characteristic skin lesions can be seen on genitalia, nose, lips, and eyelids [4, 5, 7, 9], the differential diagnosis still includes dermatophytosis, trauma, myxomatosis, and acariasis [5, 7–9]. The RPR test can be useful for distinguishing these differential diagnoses.

Twelve cases from the initial group were all effectively treated with chloramphenicol (Pediatric Chloromycetin Palmitate, Sankyo) (55 mg/kg BID p.o.) and recovered completely after 14 to 42 days of administration. Three cases in the relapsed group were also successfully treated by...
chloramphenicol, which had been used at the initial out-
break of symptoms, but was subsequently used for a longer
period than before. One case in the relapsed group recov-
ered clinically following three weekly injections of long-
acting penicillin (Duopen, Schering-Plough Animal Health)
(84,000 IU/kg).
Penicillin, chloramphenicol, and tetracycline are known
to be effective for treating rabbit syphilis [3, 5, 7–9], but the
possibility of side effects from penicillin and tetracycline
has been described [5, 6, 8–10]. Because fewer side effects
are desirable for companion rabbits compared with breeding
rabbits, chloramphenicol was predominantly used in this
study. Most rabbit owners could easily administer this med-
icine without side effects, and long-acting penicillin was
injected in one rabbit because the owner complained of dif-
ficulty with oral administration. Though it confers some
hazards for rabbits, parenteral administration of penicillin is
usually considered to be permissible [5, 6], and is recom-

All cases in the relapsed group had originally received
oral chloramphenicol treatment five months to one and a
half years earlier. Medication was administrated for 14 to
28 days, and clinical signs completely disappeared when
administration was stopped. Because these cases had no
exposure to infection after treatment, it is likely that they
have not been cured completely. The duration of the treat-
ment could have been insufficient or the administration by
the owners could have been incomplete. Thus, treatment of
this disease should be given for a sufficient duration and the
accurate dosage should be observed.

In conclusion, the incidence of rabbit syphilis may not be
very low in household rabbits in Japan, and many cases may
have been maternally transmitted. The RPR test is helpful
for clinical diagnosis. Chloramphenicol is safe and effecti-

cally.  Further investigation is necessary to develop more
more reliable diagnostic methods and more effective therapy and
prevention for this disease.

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