Rabbit ectoparasites: treatment, identification and client advice

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Glen Cousquer BVM&S, BSc, CertZooMed, MRCVS examines the effects of external parasites and describes appropriate management strategies

RABBITS are commonly affected by a range of external parasites. Vets, veterinary nurses and rabbit owners need to be alert to this possibility; while these parasites can provoke a variety of unpleasant skin conditions, they are also able to transmit infectious diseases such as myxomatosis.

External parasites, or ectoparasites as they are more properly termed, live externally on the host rabbit and, as such, can be found within the skin or haircoat. A surprisingly large number of external parasites have been recorded on rabbits. These include a number of fly larvae, fleas, lice and a variety of mites.

While the classification of these arthropods is commonly used as a presentational tool to structure veterinary textbooks on this subject, it does not reflect the reality of skin disease as experienced by the rabbit and observed by the rabbit's owner.

This article will focus on the behavioural as well as the skin and hair coat changes that owners might expect to see in their rabbits, before explaining how these can be investigated and treated. This article also includes advice on how owners can be advised on the prevention of external parasites in this species.

Clinical signs

Ectoparasites can provoke a range of clinical signs depending on their feeding behaviour, preferred location and the immunological and behavioural reaction they elicit from the rabbit. Common clinical signs include scratching, head shaking, hair loss, exudation, crusting lesions and dandruff. The more invasive the parasite, the more distressing the parasitic condition will be for the rabbit.

Larvae of the green bottle fly (*Lucilia sericata*) are particularly invasive and cause extensive damage to the skin and underlying tissues. These larvae are responsible for the condition commonly known as fly strike. This is one of the rare dermatological emergencies and should be identified and treated as quickly as possible. Table 1 provides guidelines on how owners can be taught to identify fly strike.

Owner education

I cannot emphasise enough how important it is for rabbit owners to be able to identify that their rabbit is suffering from fly strike. I would encourage nurses to take a proactive role in the education of rabbit owners. If you're used to organising puppy parties and running nurse clinics, it would not be a big departure for regular sessions to be run for rabbit owners. These should cover, among other things, feeding, handling, weight control and, of course, parasite control. Only by taking a strongly proactive approach can we hope to get owners taking the right steps towards the prevention of fly strike.

During such sessions, nurses are likely to encounter a range of skin conditions. By contrast, with fly strike these conditions are rarely life threatening and are, perhaps, best described as irritating. Where identified, the affected rabbit should be referred to the vet for further investigation, advice and treatment.

The following sections address the presenting problems caused by these other parasites.

Ear problems

Rabbits that are shaking and scratching their ears may have irritation within the ears caused by ear mites. There are, however, quite a number of causes of ear disease in rabbits and the cause of the problem should always be diagnosed by a veterinary surgeon.

Rabbits suffering with the so-called ear mite, *Psoroptes cuniculi*, typically have a build up of crusty exudates within the ear canal that may extend up on to the ear itself. This condition is intensely itchy and will cause affected rabbits to persistently scratch at and flap their ears. The condition can be confirmed by microscopic examination of the exudates from the ear for mites. The condition is relatively easy to treat with an ectoparasiticide such as ivermectin or selamectin. The debris should

not, however, be removed immediately as this will only expose raw, ulcerated tissue, often resulting in considerable pain. Care should be taken to minimise contamination of the environment as mites found within the debris will be potentially infectious to other rabbits. With this in mind, all rabbits housed together are likely to benefit from treatment.

The larvae of harvest mites (*Neotrombicula autumnalis*) also favour the ears of rabbits. In cats, these mites often take shelter in the small pocket – known as Henry's pocket – located towards the base of the ear. This pocket is poorly developed in rabbits, but the mites will still exploit any suitable recesses where they can easily be overlooked, causing confusion when the rest of the ear is examined and found to be perfectly healthy.

The mite may also favour the skin surrounding the eyes as well as the feet and anus of the rabbit. Once on the host's skin, the larvae attach themselves using their blade-like mouth parts and proceed to inject a fluid that digests tissue and allows the larvae to feed on lymph fluid. This digestive fluid is profoundly irritating and can cause affected rabbits to self traumatise. The mite can just about be seen by the naked eye as a small orange speck. These can be collected using Sellotape and are best identified microscopically.

Studies are starting to propose *N autumnalis* as a vector for some infections including myxomatosis, borreliosis and ehrlichiosis.

Harvest mites can be difficult to treat. Treatment of *N autumnalis* in dogs and cats typically relies on the use of a 0.25 per cent Fipronil pump spray. The use of Fipronil in rabbits is not, however, recommended. In rabbits, perhaps the most appropriate form of therapy consists of either ivermectin or permethrin, although little data is available on their efficacy against harvest mites. Environmental control should always be explored: rabbits should, in the first instance, be removed from the source of infection. Where this happens to be the lawn, it can be surveyed to determine which parts of the lawn are affected. This is easily done by placing pieces of black card on the grass on a warm day. The warm card will attract the offending beasties and can then be examined for the harvest mite larvae. Some areas of grass may, in this way, be found to be free of harvest mites and therefore safe for rabbits to graze.

The rabbit fleas (*Spilopsyllus cuniculi*) prefer to feed on the ears of rabbits. The flea, along with a number of other parasites, is incriminated in the transmission of myxomatosis. Advice on treatment and control should be provided by the veterinary surgeon as it is likely to involve the prescription of imidacloprid (Advantage, Bayer), a POM-V drug licensed for the treatment of fleas in rabbits.

Dandruff

Rabbits affected by a heavy build up of dandruff should be examined for the mite *Cheyletiella parasitovorax*. This mite may be carried by healthy rabbits without any overt sign of disease. Rabbits that experience difficulties grooming due to problems such as dental disease, obesity,

arthritis and spinal problems are less able to keep the problem in check, which allows the mites to proliferate. The mites then produce a low-grade irritation together with lots of scale and debris. This scale should be examined microscopically to confirm the presence of the mite (Figure 1).

Cheyletiella infections can be treated with ivermectin once the diagnosis has been confirmed. Any underlying problems should also be addressed to prevent the problem recurring. A flea comb can be used to eliminate the build up of dandruff, thus depriving the mites of the keratin that they feed on.

The three mite species mentioned above are the three most common mites identified in rabbits in the UK. It is important that they be identified in order to allow appropriate advice and treatment to be given. Both *Neotrombicula* and *Cheyletiella* mites are zoonotic and, as such, can infect, and cause skin irritations in humans.

Hair loss

Dog and cat fleas (*Ctenocephalides canis* and *C felis*) may provoke a dermatitis resulting in hair loss along the back. Where this flea is identified, the source will invariably be cats and/or dogs living in the same environment. Once again the rabbit should be referred to the surgery for advice about a suitable control strategy.

Other parasites

Rabbits may be parasitised by a number of other parasites. Various biting flies feed on rabbits and are responsible for the transmission of viral diseases such as myxomatosis and viral haemorrhagic disease. Unlike fleas, these mosquito-like flies can transmit such diseases from one rabbit to another without the rabbits having any direct contact with each other. Indoor rabbits have become infected in this way with both aforementioned viral diseases, despite having spent all their lives indoors. Mosquito-like flies only feed briefly on the rabbit and are therefore unlikely to be seen.

In Africa and the Indian subcontinent, infections with the sarcoptic mange mite (*Sarcoptes scabiei*) are commonly seen. This parasite, however, remains rare in the UK. In the USA, rabbits may also be affected by the warble fly (*Cuterebra cuniculi*), the larvae of which produce cystic structures and breathing holes.

Conclusions

The list of external parasites that prey on rabbits is surprisingly long. A number of these parasites are able to transmit both myxomatosis and viral haemorrhagic disease to rabbits. Consequently, all rabbits should be vaccinated against these diseases.

The veterinary nurse has an important role in identifying parasite infections and educating owners about the risks posed by such infestations, both to their rabbits and themselves. It is important that owners be advised on how to identify such problems themselves. Where skin irritations are identified, the owner should make absolutely sure that the rabbit is not suffering from fly strike. Providing this is not the case, a non-emergency appointment should be advised to allow the problem to be diagnosed and treated appropriately.

WARNING!

Rabbits often fall victim to mite infestations.

These can be profoundly irritating and it is thought that this is due to a hypersensitivity to mite-related antigens.

The signs seen by owners will reflect the preferred location and feeding habits of these mites.

It should be noted that these mites are potentially zoonotic and may produce skin irritations in owners, especially where there is close contact between the owner and their rabbit.