

## Diagnosis and treatment of orf

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**When I used to do a meat inspection for an hour each week, I came across a case of orf in one of the slaughtermen.**

The lesion was on the back of his hand. The GP thought it was an abscess and lanced the pustule. I was certain it was orf and got some pus into a viral transport medium. The Veterinary Investigation Centre in Norwich confirmed the case as orf and it took weeks to heal.

I have always taken the zoonotic aspects of this disease very seriously ever since. When I got a pustule on my finger from my own sheep, I took potentiated sulphonamides by mouth and it healed within three weeks. I always advise clients to wear rubber gloves when dealing with the disease. I also advise any affected people to go to their GP, but not to let the doctor lance the lesion.

### Virus

Orf, which should be called contagious pustular dermatitis, is not a pox virus but a *Parapoxvirus*.

It is allied to viral diseases in cattle, pseudocowpox (caused by the most common virus found on the bovine udder) and bovine papular stomatitis (the oral form of pseudocowpox occurring in young cattle). Both these cattle viruses are self-limiting, rarely causing problems. Sheeppox, which is a *Capripoxvirus*, is not found in the UK or western Europe. However, it seems to have spread from the Middle East to Hungary. I never saw sheeppox in Kenya, but we certainly got orf. Sheeppox seems to cause more systemic diseases than orf.

Orf in sheep is normally self-limiting, like pseudocowpox and bovine papular stomatitis are in cattle, but orf seems to cause more problems. The problems are related to secondary infection - it appears that the virus acts synergistically with *Staphylococcus aureus* and can cause severe dermatitis.

Philip Scott, reader in division of veterinary clinical sciences at the University of Edinburgh, has done some excellent evidence based medicine that shows the beneficial effects of intramuscular injections of procaine penicillin in severe cases of orf. Orf is not supposed to affect other species other than the sheep and man, but I am sure I have seen the condition in goats and llamas. In all these cases, the animals were running with sheep that were experiencing a severe outbreak of orf. Regretfully, I did not send samples for virus isolation.

Danny Scott, of the American College of Veterinary Dermatology at Cornell University, Ithaca, New York, is convinced goats can become infected with orf. He has photographs that show confusion with the diagnosis. There is no doubt that orf can look very similar to staphylococcal folliculitis and ringworm in goats.

Orf in goats, as you would expect, is worse in kids - the lesions progress from papules to vesicles and then to crusts, which conceal granulation tissue. As in sheep, pruritis is not a feature - but pain can be marked. Because the virus is not primarily a goat virus, it has more generalised effects in goats. Morbidity can be 100 per cent with up to 20 per cent mortality.

Clinicians should beware. The main concern would be in mixed sheep flocks and goat herds. If orf is seen in small mixed groups on hobby farms, aggressive antibiotic therapy should be implemented.

## **Disease**

If you believe the textbooks, the virus can live in the scabs on pasture for more than a year. I am sure this is true but, in my experience, most outbreaks occur from sheep-to-sheep contact.

A new outbreak always seems to be more severe than a long-standing orf problem, which is understandable if immunity levels are low in a group of sheep that suddenly get in contact with the disease. It can be devastating if there are young lambs. There is spread between the lambs' mouths and the ewes' udders, from which mastitis follows - with a lack of milk for the lambs. I am convinced that thistles make the symptoms worse in adults - indeed, in some old books, the condition is called thistle disease, although the names of sore mouth or scabby mouth are more common.

The term for the human condition is farmyard pox. Where orf does not cause pruritis in sheep, it certainly does in humans and I am sure secondary infection makes the condition considerably worse.

There is a school of thought that considers strawberry footrot to be caused by the orf virus and *Dermatophylus congolensis* as a joint infection. This type of foot infection is normally seen in growing lambs, and readily responds to topical treatment with oxytetracycline spray.

I suspect that the disease known as pizzle rot may also be caused by a synergism of orf and *D congolensis*.

This condition is seen on the prepuce of rams - the penis is normally unaffected, but the pain will often make the rams infertile. Small lesions may be seen on the vulvas of the ewes if they are running with the rams.

I treat these cases very aggressively - I give five days of intramuscular injections of procaine penicillin and streptomycin combination with a topical treatment of Battles Summer Fly Cream for the prepuce. I always advise people to wear rubber gloves. Any orf infection in the summer months will attract flies, and secondary fly strike is a common sequel. Controlling it is vital for any sheep, but it should be more vigorous in active orf outbreaks.

## **Treatment and prevention**

I always advise procaine penicillin in severe cases of orf. I also advise the client to apply oily creams to the affected areas, whether they are lips, nose, udders or even vulvas, while wearing rubber gloves.

I normally suggest Battles Summer Fly Cream, but other treatments have exhibited success. I am not a fan of oxytetracycline spays, as I believe these tend to dry the scabs, which then drop off - leaving the inflamed area underneath in a worse condition. When I was a boy, Harry Weller, our shepherd, would always mix the newly purchased ewe tegs with some old infected ewes in August.

This ensured that the new arrivals contracted the condition and developed immunity long before lambing time.

The immunity obtained by the actual disease is very protective - animals infected naturally are highly resistant to further infection. Nowadays, there is a worthwhile vaccine that involves scarification of the skin in the axillary region with a live vaccine. I would not advise the use of the vaccine in clean, closed flocks.

I would also advise against its use in pregnant animals, not because the vaccine would cause abortion, but because if young lambs become infected with the virus from the vaccine on their mouths, they may cause lesions on the udders of the ewes. This, in turn, could lead to mastitis. The vaccine is not expensive, but it is time consuming to carry out. There has been work on a parenteral vaccine, which seems to be highly effective. This would be much easier for the farmer to administer.

## **Infection confusion**

It is possible for an orf infection to be mistaken for foot-and-mouth disease (FMD), though I think this is unlikely, as the scabby lesions of orf do not look like the vesicles of FMD. A sheep infected with FMD will also be showing vesicles and will have a high temperature. I also consider bluetongue to be an unlikely differential, as scabs are not a feature of bluetongue. However, practitioners would be well advised to consult with more experienced colleagues and, if there are still doubts, remain on the holding and contact DEFRA.

There are very few sheep specialists, so I think the University of Edinburgh must be applauded for running its new course in sheep medicine.

Hopefully, this will lead to an RCVS certificate in sheep medicine being developed - either the old type of certificate for candidates that enrolled before November 1 2007, or the new modular certificate.

## **Conclusions**

The sheep is a benign animal for the shepherd, as far as zoonoses are concerned. Orf is a nasty complaint in humans and should not be treated lightly - cleanliness and hygiene are important. Equally, orf should not be treated lightly as a disease.

It can be catastrophic in a flock without any immunity. It is particularly a problem at lambing time in heavily pregnant ewes, which are struggling with their nutrition, and in lactating ewes, which are at risk from mastitis.

Therefore, it is up to us, as veterinarians, to warn farmers of these dangers and dispel any complacency. Modern farming practices should be encouraged - closed flocks must be the way forward. If that is not possible, incoming sheep should be kept separate from the main flock for at least three weeks.

This is best done on a pasture due for reseeded, as active orf will then be spotted before the sheep are mixed.

The pasture is unlikely to contaminate sheep if it has been ploughed and reseeded.

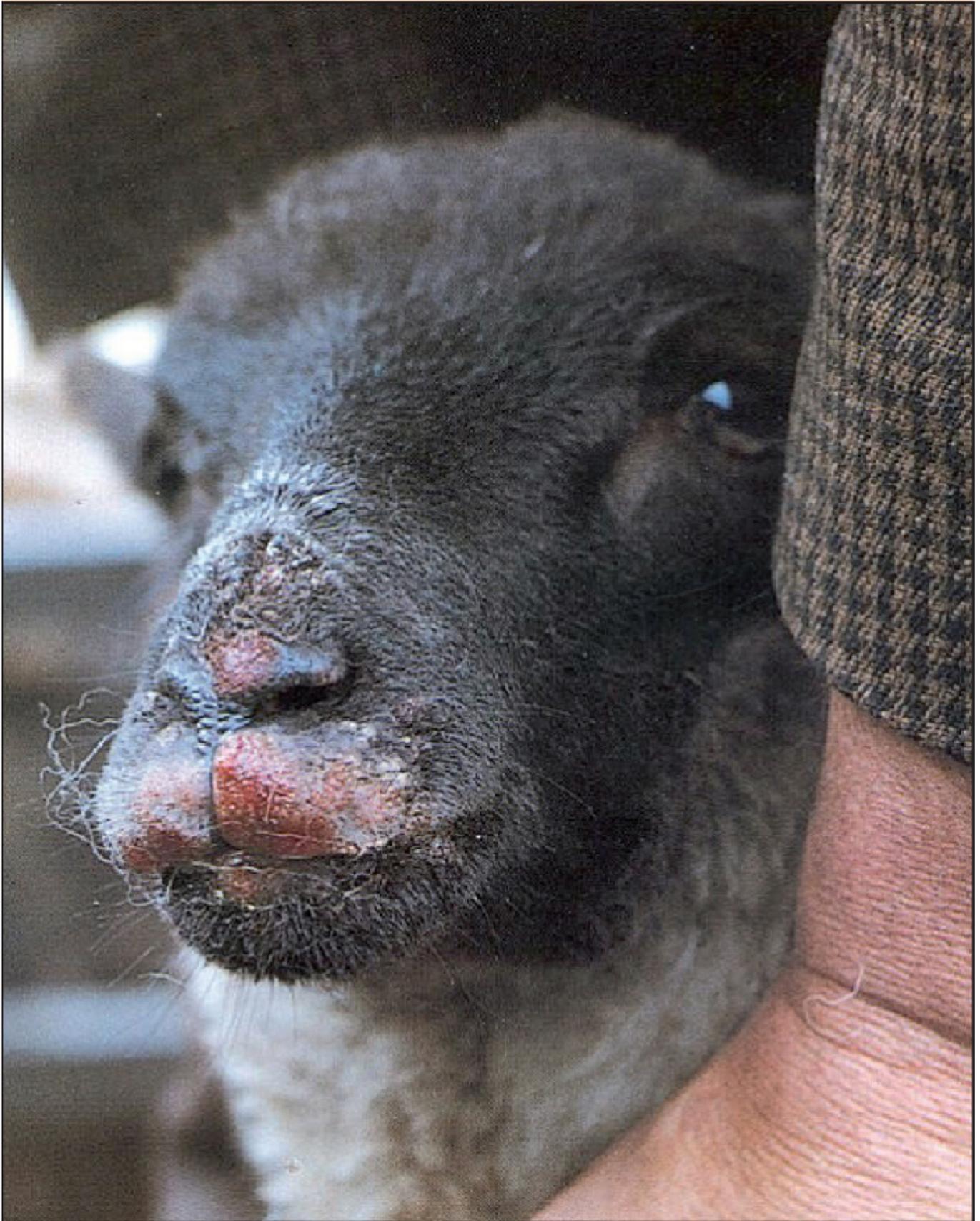
It is sensible to warn farmers that sheepdogs can contract the disease from very close direct contact; the infection will go eventually, but the dogs suffer a very painful condition for two to three weeks.



***Very small orf lesions are seen here. The author recommends procaine penicillin for severe cases.***



***Left: The author believes grazing thistles make the condition worse.***



***While the animal is showing some signs of the disease. Gloves ought to be worn at all times, unlike in this photo.***



***Angora goats can get orf.***



***Modern methods of farming are the way forwards, the author says.***

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