



Exudative Dermatitis in Common Brushtail Possums

Jim Pollock B.V.Sc.

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This is a very common clinical condition seen in common brushtail possums in the tropics

The condition may just be mild loss of hair with dry flaky skin on small areas of the body such as tail base, limbs and/or face.

In the more severe form the skin can become thickened and ulcerated. It is not uncommon to find that the ulceration is so severe that the skin on the face, especially eyelids and lips can be literally eaten away. Large areas of full skin thickness can be eaten away on limbs, rump and trunk.

Many possums are found in a very sorry state, completely debilitated and so weak they are easily picked up by members of the public and brought in for treatment. In many cases these severely affected cases are euthanased.

Clinically these severe cases return blood haemograms that indicate chronic infection. There is usually a non-regenerative anaemia, which is common with many chronic diseases. There is generally a lymphopaenia, neutrophilia and leucocytosis.

Pathology.

The pathology varies tremendously depending on the stage of progression of the disease. Secondary infection is the norm and in most cases is caused by *Staphylococcus aureus*. This bacteria is probably a normal commensal of the skin flora. Although *Staph. intermedius*, *Streptococcal sp.* and *E.coli* have also been isolated; they tend to be less common.

Predisposing factors.

Temperature. This condition is more common in the tropics than in cooler climes. It may be that rain, temperature and high humidity all contribute to an environment that maximises bacterial growth.

Stress. It is very evident that stress plays a big part in the epidemiology of this disease. The main stressor is increased population density.

Unlike ringtail possums the common brushtail possum is a solitary animal and guards its territory against all outside possums. When population densities increase there is an increase in territorial disputes, competition for nesting sites and food resources.

Over time, this causes depression of the possum's immune system. Simple scratches that should heal become severely infected. Secondary skin infection develops in skin follicles that have shed due to stress. Remember that these bacteria are normal inhabitants of the skin and are always there on the skin, just waiting for the normal immune system that has kept them in their place, to falter.

Decreasing food sources and competition for food will further put a nutritional pressure on the immune system.

In this situation we find that the number of male young are increased compared to the female young. It follows that the sub adult males that have recently left their mother and are trying to carve a niche for themselves in the outside world are the most likely to become victims of this disease. They are small, they have no chance of defeating the large resident male in that territory so are pushed from pillar to post to the point that they are suboptimal in weight, have fight wounds and can rapidly develop exudative dermatitis that further depresses their physical condition. These animals will often succumb to these infections.

Treatment.

Severely affected animals with lesions over >30% of their body are often not worth treating. They may temporarily respond but once re-released back to their area they tend to revert back to where they were within 3-6 months. Their immune system seems to be compromised for the long term.

Mildly affected animals are best treated with the simplest and cheapest antibiotics available that will do the job. As a veterinarian I dislike using such drugs as Baytril (Enrofloxacin) to treat this condition. This is a drug that should be reserved for treating resistant infections and especially gram-negative bacterial infections particularly useful in reptiles.

When treating these staph infections I recommend an antibiotic course of at least 10 days.

“Ceclor” “Keflor” cefaclor monohydrate. This is my first drug of choice. In the possum I have found this antibiotic to be extremely tasty to possums. It is strawberry flavoured,

and after a few doses the possums will recognise it and actively come out to take it from the tip of the syringe even trying to pull the syringe out of your fingers. This means there is no stress in dosing. In ideal conditions it is given twice daily for 10 days. There are many times where I have a MOP treat possums that live in their back yards that they feed each evening. In this situation I get them to place the dose on a small piece of bread that is readily consumed by the possum. Even once daily dosing has proven effective

This antibiotic can be used to treat infections of the:

- ears, nose, throat and tonsils (upper respiratory tract)
- chest and lungs (lower respiratory tract)
- bladder and kidneys (urinary tract)
- **skin**

This medicine belongs to a group of antibiotics called cephalosporins. These broad-spectrum antibiotics work by killing the bacteria that are causing the infection.

I have used this antibiotic for the last 15 + years, treating hundreds of possums, as well as birds, bandicoots, bats and have yet to see any complications from this medication.

It is packaged for human use and in that form the powder is made up with 45 mls. of tap water. There are two strengths available 125mg in 5 ml and 250mg in 5 ml and I buy the latter.

I weigh out the powder into 15 amounts which when mixed with 10 mls. of water will give me approximately 250 mg of drug which is 25mg/ml

This I use at a dose rate of 0.5ml per Kg 12.5 mg / kg

This 10 ml is enough drug to treat a 2kg possum twice daily for 5 days (1ml bid) Or a 1kg possum 10 days (1/2 ml bid) Using a small tuberculin syringe one can easily treat a 100 gram possum with 0.05ml twice daily.

Cost wholesale per unit is about \$1.00 +cost of dispensing bottle and label. This means I prepare 15 small dispensing bottles of drug for about \$15.00

Even with normal mark up at the vets of 100% they can still do it for \$2.00 as long as there is no dispensing fee. The disadvantage is that it takes 20 minutes to sit down with a micro scale, weigh the powder (about 48 grams) and divide by 15 and then weigh up aliquots of powder and place it in a small dispensing bottle. These can then be dispensed with instructions to add 10 ml of water and dose at 0.5ml per Kg body weight (12.5mg/Kg)

The reason you weigh out 3.2 grams to get 250 mg of drug is because there are a lot of additives to the base antibiotic which include things like

- sucrose
- erythrosine
- methylcellulose
- sodium lauryl sulfate
- artificial strawberry flavour
- xanthan gum F
- tapioca starch
- dimethicone 350 (bottles) or

It is possible to do this with the human Clavamox (Amoxil/clavulanic acid) powder to make up the suspension. It is just a matter of doing a little work. Strictly speaking these packs are not meant to be broken up into smaller units so this is an “OFF LABEL USE”. This is an S4 drug and should only be dispensed by a veterinarian for animals under his care.

No manufacturer will ever produce a unit containing a drug amount sufficient to treat an animal 100grams to 1kg for 5-10 days. It just won’t happen. The cost of the packaging and labelling would be three times the cost of the drug. For these reasons we have to think outside the square and find ways to treat these little animals in a cost effective way.



When treating this condition I generally use no topical treatments at all. The healing process starts to be noticeable after 3-5 days with the skin becoming less edematous. As the skin heals, the possums’ general wellbeing improves and they start grooming themselves and get rid of all the dead tissue and scabs.

They do a far better job of cleaning up their coat and skin than we can do and there is no stress of handling. It is quite noticeable that after a week or so the skin is a healthy pink, very smooth and devoid of fur. The coat starts to be noticeable about the third week and this progressively improves. The whole healing process to get the coat back can take up to 2 months.

There is rarely any need to use antibiotics past the 10-day mark, even though no new coat is visible at that time. The more severely affected animals will need to regain condition and look very healthy before considering release.

Give consideration to releasing the males in an area that has a low population density.



Ceclor used to be available in these small sachets (below) containing 250 mg cefaclor and they were fantastic for treating wildlife.

Just tear open the packet and add the powder to 10 mls. water and hey presto ready to use antibiotic for small mammals and birds. They stopped making it 3 years ago it, as it was uneconomic. It was originally packaged in a small box containing 3 sachets and was available free to doctors to dispense to sick children to get them started on antibiotic while the script was filled in the first 24 hrs. I used to get my supply from a Doctors surgery, often 10 boxes at a time. Now we have to buy the big bottles and make 15 small doses out of it.



Jim Pollock B.V.Sc. 11th August 2006
12 Launder Street,
Mundingburra 4812
Ph 07 47797708
Fax 07 47794886
aachilpa@bigpond.com