

## *Abscess Management in Rabbits: an Illustrated Guide*

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Warning: this file contains pictures that may be distressing for people.

An abscess is a pocket of fluid and pus, which results from an attack by pyogenic organism (e.g. bacterium) followed by the destruction of cells. The pocket usually contains a collection of pus, dead phagocytic white blood cells, necrotic cells, and live or dead bacteria. As the quantity of pus increases, the pocket grows larger and starts to wall off from the surrounding tissues and blood circulation. This renders treatment difficult. If the abscess is left untreated, it continues to grow. Tissue will rupture either inside the body or on the surface of the skin. This stage is particularly painful and dangerous, with the liberation of bacteria and their toxins in the blood circulation.

In most cases of abscess, the rabbit has a history of pasteurellosis, though other bacteria like *Staphylococcus aureus*, *Streptococcus* spp, *Pseudomonas* spp or *Fusiformis* spp. are no exceptions. They often result from a nasolacrimal or tooth problem, surgery, or a foreign body such as a hay splinter in the gum.

Options that are available to treat abscesses in rabbit include:

- total surgical excision of the abscess cavity, necrotic tissue, and the surrounding fibrous capsule. This treatment can, however, not be done when several abscesses are present, or when the bone is affected (e.g. osteomyelitis, jaw bone infection by a tooth root).

When surgical excision is not possible, the cavity should be packed with an antibiotic impregnated dressing. Various types are available nowadays:

- permanent placement of antibiotic impregnated PMMA beads,
- temporary filling with antibiotic impregnated gelatin sponge (e.g. Gelfoam®, Surgicel®). The dressing must be changed daily or every 2<sup>nd</sup> day, to avoid necrosis of surrounding tissues..
- temporary filling with wet-to-dry hygroscopic and bactericidal sugar dressing (e.g. 50% dextrose, or *manuka* or clear sterilized ( $\gamma$ -rayed)



honey). The dressing must be changed daily, to avoid necrosis of surrounding tissues.

The later filling presents the advantage to remove the malodorous smell of ammonium and sulfur compounds due to bacterial breakdown of serum or cell proteins.

Due to its richness in sugars, honey has an hygroscopic effect on the wound, preventing bacterial development. Honey will furthermore acidify the wound, accelerating the healing process. The honey should *not* be boiled, otherwise its bacteriostatic/bactericidal properties are lost. When used in abscess treatment, success cannot be guaranteed by a 100%, still we were able to treat successfully some intractable abscesses in horses. Advantages in using honey are that the product is cheap, non-toxic and treatment can be continued over a longer period of time.

The goal for abscess treatment is to cure the infection. Most people are afraid to hurt their rabbits, but they tolerate a lot and it is necessary to do a good job on wound care or the surgery will be for naught.

Here we present daily care related to management of the jaw abscess of Buh-Bunny.

#### Background, by Christine Macey

Buh-Bunny had about 5 of jaw abscesses if I count correctly. He is my 4th jaw abscess rabbit and lived the longest with them (3 years), and oddly enough a sarcoma and not the abscesses did him in at 9 years old.

Buh-Bunny's first jaw abscess was 3 years earlier and ceftiofur beads were implanted. The next day he had another abscess removed from another spot in his jaw found on closing the day before, ceftiofur beads placed too. He was on penicillin injections for a week.

Three months later another jaw abscess, but the beads did not stay suspended after surgery, falling down into his dewlap so I cannot call this a true bead failure. The vet who placed these beads assisted Kerin Tyrrell with her rabbit mandibular and maxillary abscess study, so the choice of drugs for the next bead placement was clindamycin. We both chose not to culture because of the poor culture results Kerin had received from this area's labs, knowing it would be a waste of time and money. Buh-Bunny stayed abscess free for a year but required another facial surgery for a lump that was reported as a benign fibroma on the histology. Buh-Bunny then quit going out on the lawn where the cottontails roam as this was a probable cause.



Another jaw abscess a year later and I had read enough testimonials from trusted individuals to know I wanted to try bicillin. My initial vet did not want to go this route so I went to my local vet. I used bicillin alone for maybe a few weeks but saw no decrease in abscess size so decided on surgical removal and wound irrigations to let it heal inside to out along with the bicillin. This was also successful for a year.

So, now we are on his 5<sup>th</sup> jaw abscess and I went to my alternate vet (my local vet was not available), a 3<sup>rd</sup> vet I use frequently when my local vet is not around, and she said it was inoperable. I used bicillin and Buh-Bunny began to have more and more trouble eating.

I was not going to put him through more surgery but ended up taking him to my local vet for a second opinion, and he said it was certainly operable, that it would buy him time but in all likelihood this would kill him in the end, but the end might be a ways off. I asked if he would close it up and not leave me with a huge open wound and he said he would if it wasn't too dirty but I ended up getting a smallish deep hole which made observing the state of the wound hard. I believe he was on both bicillin and naxcel (ceftiofur) injections but that doesn't really matter, and I cultured to which is another story, but did it more for academic reasons and curiosity than for planning his drug therapy.

Manuka honey is usually not the first choice dressing for abscesses; it was the best selection given the circumstances: a wound tract that exited through the cavity left by a lower incisor removal, the entrance being on the outside of the left cheek. This meant that anything I irrigated with would in part end up in my rabbit's mouth.

#### Summary of the procedure used for dressing a wound with honey

1. Do not leave it too late to start using honey on a wound.
2. Use only honey that has been produced especially for use in wound care.
3. Use dressings that will hold sufficient honey in place on a wound to get a good therapeutic effect (i.e. about 20 ml/25 g per 10 cm X 10 cm).
4. Ensure that honey is in full contact with the wound bed (i.e. fill any cavities or depressions).
5. If a non-adherent dressing is used between the honey dressing and the wound bed it must be sufficiently porous to allow the active components of the honey to diffuse through.
6. Ensure that the honey dressings extend to cover any area of inflammation surrounding wounds.



7. Use a suitable secondary dressing to prevent leakage of honey.
8. Pressure bandaging can be used over honey dressings.
9. Change the honey dressings frequently enough to prevent the honey being washed away or excessively diluted by wound exudate - if the honey gets washed away then the dressings can stick and maceration of surrounding skin can occur.
10. When using honey to debride hard eschar, scoring and softening the eschar by soaking with saline will allow better penetration of the honey. Applying dressings soaked in diluted honey (3 parts water or saline to honey) rather than straight honey may give faster debriding of hard eschar.

Procedure used for dressing a wound with honey in pictures

EXTENT OF THE WOUND.

This shows the wound tract that had to be encouraged to stay open long enough for systemic antibiotics to do their job and to clean out any recurring infection in the wound bed. This also shows that a bunny will tolerate a lot of manipulation of their wounds. I premedicate with something like torbugesic 30 minutes before the procedure.



Christine Macey

Extent of the abscess wound in Buh-Bunny



## GETTING ORGANIZED BEFORE STARTING.

This is very important. Have everything you will be using at the ready. I've



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Organizing all the material before starting to work on the rabbit

found that having a thick towel for the rabbit footing makes him feel much more secure, and I prefer to do irrigations and wound cleanings over the sink.

The squirt bottle is by far the best tool in home care irrigating. I started with a Water Pik (about \$80.00 in the States) and irrigating Froggie's

jaw abscess in the bathtub. The noise and weird location probably added to her discomfort. That was in 1997. By the time I was irrigating Bupkiss' wound in '99, I used an 18-gauge catheter and 3 cc syringe. The squirt bottle is cheap and works better; unfortunately it took me until 2002 to learn that.

## SALINE IRRIGATIONS.

After unpacking the wound I use a squirt bottle and irrigate until I have a good flow from the entrance at the cheek to the exit from the inside of his mouth, trying to keep him position over the sink so the irrigant and debris does not get swallowed.

This is when I would insert the Q Tip and use it as a mechanical debridement and to open the wound back up. It is constantly trying to close. This is also a picture of a very clean wound.



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Flushing the abscess cavity with a sterile saline solution



### INSTILLING HONEY WITH 1 CC SYRINGE.

I tried this method but learned right away that it wouldn't work, this would not keep the honey in contact with the wound bed. What I did was reread the directions (it's easy to get overwhelmed in the face of having to do this) and cut up the non-adherent pads into strips of gauze and soak them in honey/saline solution per instructions. Then I packed the wound as best I could using hemostats or tweezers to push it in.



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Instilling the dressing in the cavity (here Manuka honey)

### CLEANED UP AND PACKED WOUND.

Picture of a wound needing attention. The white is not pus, much of it is dead tissue that needs to be cleaned out as much as possible. Some is just debris that will wash away with the irrigations. I learned a lot watching my vet clean a dirty wound. He taught me that my rabbit would tolerate taking tweezers and pulling out dead tissue. Dead tissue attracts bacteria.

The purple is bruising that was evident in those first post op days. There is also a bit of dry gauze to seal the outside before the final dressing (as the final dressing had a tendency to fall off a lot).



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Left: Close view of the abscess cavity before cleaning and packing  
Right: Close view after cleaning and packing with Manuka honey

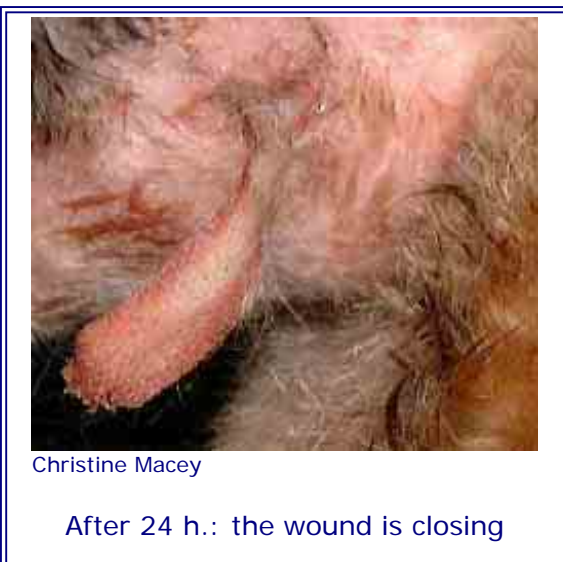


HAPPY TO BE ALL DONE.

I used a product called Skin Prep which has a skin protectant and makes the outer dressing stick better. Still, this was often the way I'd find it in the morning:



WOUND THE NEXT DAY.



He would never pull the gauze out but the outside bandage would come off frequently. Still, this is preferable to no packing at all and letting that wound close right up. Keeping it open not only allows time for the systemic antibiotics to do their job, but discourages anaerobic bacterial growth.

I feel the honey method would need to have more frequent dressing changes than our usual twice a day cleanings and redressing with Buh-Bunny and for a variety of reasons I

didn't use honey to the end, but even so his wound was closing up and I was at the stage where I'd let it win more and more until it is finally closed.



**EVERYONE NEEDS A FRIEND AFTER TREATMENT !!!**

I would have loved to end with a picture of a totally healed wound, but shortly after this Buh-Bunny died after surgery to remove a large abdominal sarcoma. He passed quietly at home with Keri by his side. I believe a treat or comforting of some kind is due after this procedure.

**!! REMINDER !!**

Always take your bunny back to your vet when you are confused about the status of the wound. There were times when I didn't know if I was looking at something that should stay put or something that should come out.

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