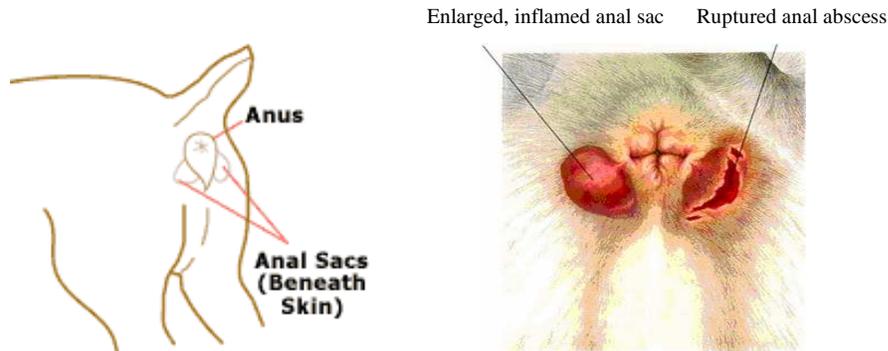


A new approach to handling Anal Sac disease

Anal Sacs (also called anal glands)

The anal sacs of dogs and cats are two structures located near the anus just under the skin. They are normally ½ in. to 1 in. long and are connected to the anus by narrow ducts. The walls of the anal sac contain glands that secrete a foul-smelling brown liquid. Bowel movements normally empty the anal sacs as the stool moves through the anus.



Anal Sac Disease

Disease of the anal sacs fall into three categories:

1. *Impaction*: The anal sac fluid is abnormally thick and cannot escape.
2. *Infection*: Bacteria produce yellow or bloody pus. Infection may also exist in other areas, such as the eyes, ears, tonsils, and/or skin.
3. *Abscessation*: As a result of infection, a hot, tender swelling near the anus may rupture and discharge pus and blood.

Anal sac disorders are more common in dogs, but they can also occur in cats. Anal sac problems are most common in Poodles. In addition, obese dogs are predisposed to anal sac problems due to their inability to drain the fluid well.

Signs and Symptoms

Frequently noticed signs and symptoms include (a) scooting or dragging the anal area, (b) excessive licking under the tail, (c) pain and swelling near the tail or anus, (d) bloody or sticky drainage on the sides of the anus and (e) a red, raised, hairless area to the side of and slightly below the anus. Some anal sac abscesses rupture spontaneously, producing an open sore with a watery yellow-green discharge. Pain is usually present; some pets may refuse to have a bowel movement or cry out when a stool is passed.

Treatment and Home Care

Treatment for anal sac disease may include the following:

- Manual expression (squeezing) of the sac contents.
- Flushing the sacs and instilling antibiotics into them.
- Surgical drainage or removal of the sacs.

Home care consists of giving all prescribed medications, feeding the prescribed diet (normal or a special diet) as directed and checking the wound at least twice a day. The

veterinarian may instruct to apply warm compresses to the anal sac area twice daily to relieve inflammation and pain. Care should be taken to ensure the pet doesn't traumatize the wound by excessive biting and chewing. The veterinarian has special collars that can be applied to help prevent self-mutilation. Also follow the special instructions, if any, provided by the veterinarian.

New approach

Treatment modality for anal sac disease varies. However, the consensus is that a local treatment, rather than systemic, is preferred in most cases of anal sac disease. In general, the anal sacs are flushed and filled with an antibiotic solution or a compounded preparation. These treatment modalities, being liquid and runny in nature, tend to ooze out quickly following the administration.

Recently, a new, convenient, and easy to use product, ClinzGard NS™ was introduced by TriLogic Pharma to address many of these shortcomings. ClinzGard NS™ is an innovative preparation designed to (i) undergo liquid-to-gel transition at body temperature, (ii) stay at the site of application by adhering to the tissue and (iii) dissolve in exudates and other aqueous fluids over a period of time.

ClinzGard NS™ is classified as a veterinary medical device as its primary purpose is to act as a barrier for microorganism intrusion in conditions such as anal sac abscesses, tissue abscesses, puncture wounds and lacerations. ClinzGard NS™ contains 1% Clindamycin HCl, proven to be highly effective against common bacteria found in soft tissue wounds, abscesses and dermal/skin infections. ClinzGard NS™ is applied with pre-filled syringe as a semi-viscous gel and through a process of reverse thermal gelation, ClinzGard NS™ further thickens resulting in an increase in the viscosity at the site of application (Figure 1), adheres to the surrounding tissue at the site of application, slowly dissolves in the exudates and other aqueous fluids at the site of application over 7 – 10 days (Figure 2), and acts as a barrier against microorganisms. ClinzGard NS™, which forms a soft, pliable matrix matching the contour and shape of the site of application is bioresorbed as the wound heals and is cleared through normal pathways of elimination (mainly in the urine).

Efficacy study

The benefit, if any, of using ClinzGard NS™ was studied using the rat abscess model. Briefly, the study included twelve (12) rats divided into two groups. Rats in group 1 (ClinzGard NS™) received ClinzGard NS™ intramuscularly, while rats in group 2 (control) received nothing. After thirty (30) minutes of pre-administration of either ClinzGard NS™ or nothing, rats in both groups were inoculated with *Staphylococcus Aureus* bacteria (3.9×10^9 CFU/mL) by subcutaneous injection to induce abscess.

The results showed that ClinzGard NS™ reduces the bacterial load not only in the blood (Figure 3), by 97% by day 4 but also in the abscess tissue (Figure 4) by a log order of 2 (99.9%) by day 4 with absolutely no change in the histology of key organs such as kidneys, spleen, liver, etc. (data not shown).

Figure 1: *In Vitro* Viscosity Profile

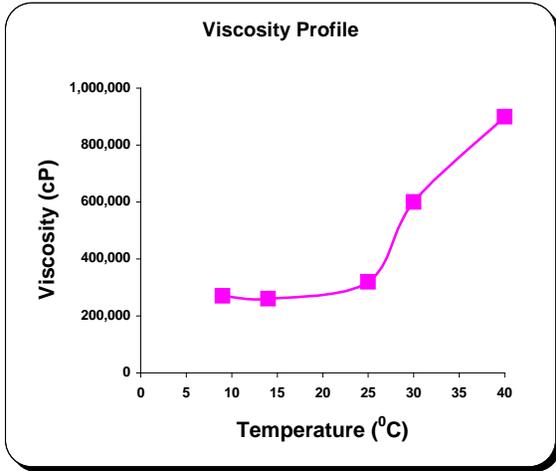


Figure 2: *In Vitro* Release Profile

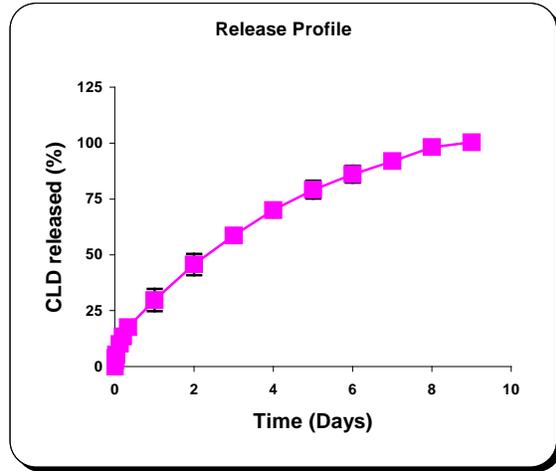


Figure 3: Blood Bacterial Load Profile

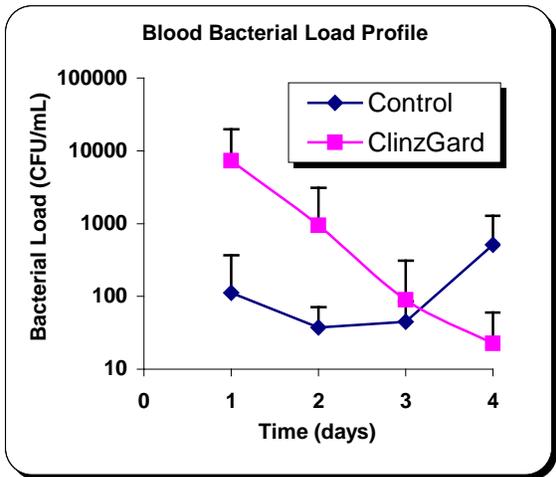
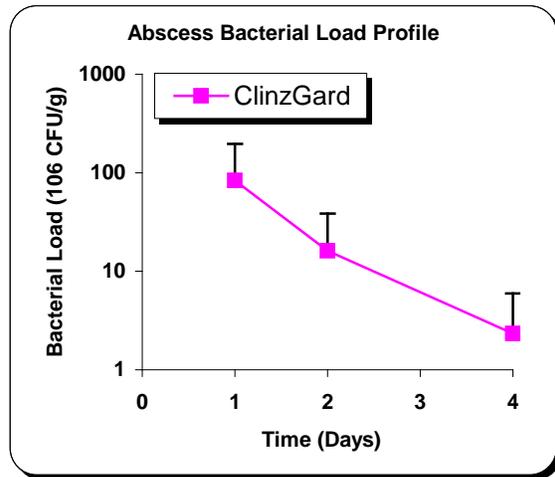


Figure 4: Abscess Bacterial Load Profile



Conclusion

Thus, regular use of ClinzGard NS™ has the advantage of acting as a physical barrier to microbial intrusion in anal sac disease in not only companion animals, such as dogs and cats, but can also be used in more widespread conditions of abrasions, lacerations, and cuts in larger domestic animals, such as horses and cattle.