GOING VIRAL:

ALTERNATIVE TREATMENTS FOR LYMPHOCYSTIS IN SEVERUMS

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Going Viral: Alternative Treatments for Lymphocystis in Severums

This article's purpose is to share our experiences with a diagnosed lymphocystis outbreak that we managed to drive into full remission in our lab.

One of our tanks suddenly developed an outbreak of thick, white tufts on the fins and some on the body. It only affected one species in this tank, the severums (*Heros severus*). We took samples and observed these white objects were not separate parasites, but rather, the tissue itself manifesting distorted growth.

Our initial approaches were naturally towards those of more common bacterial or fungal ailments. The fish behaved otherwise normally, eating well but swimming at odd angles and with some difficulty. We assumed the distorted swimming patterns were due to the masses forming on the fins.

For a full six months, we tried all manner of antibiotics and antifungal treatments plus salt, medium-pressure UVC, temperature stressors, and even dewormers in our desperation. No reaction. It continued to worsen. These are the antibiotics and antifungals we tried:

- Doxycycline
- Erythromycin
- Fenbendazole
- Formalin
- Kanamycin
- Levamisole
- Malachite Green
- Methylene Blue
- Metronidazole
- Minocycline
- Nitrofurazone
- Praziquantel
- Salt

We anesthetized some severums and took samples. The symptomology included resistance to salt, antibiotics, and antifungals, distorted tissues vs parasitical adherents, long, extended periods of growth concurrent with a lack of negative symptomology of the host, and the apparent similarity of microscopic images of cell nodules to published images of verified lymphocytic infections. All were highly suggestive of a lymphocyte infection.

A colleague and co-author of Reverse Respiration, who is also a Doctor of Veterinary Medicine in Dallas, examined the microscope images and agreed that as evidenced by the cellular nodule distortion (only visible under a microscope), in concert with its resistance to all drugs we tried and the minimal symptomology, that it was probably viral lymphocystis.

As lymphocystis is viral, no treatment is indicated. However, there are non-peer-reviewed reports of driving it into arrest with antiviral drugs and some herbal treatments.

Natural Herbal Food Supplements Purported to Manifest Antiviral Tendencies

Our first "antiviral" effort was to mix herbal supplements purported to manifest antiviral tendencies. These included:

- Olive Leaf Extract
- L-Lysine

- Dulse
- Quercetin
- Green Tea Extract
- Thlaspi Arvense

The following is a report by an individual who successfully employed an antiviral herbal therapy on what appears to be lymphocystis using the first three on the list above.

(CTRL-click the link below to read their report.)

[Possible cure for viruses like Lympho | REEF2REEF Saltwater and Reef Aquarium Forum]

The author had some success with this approach. We mirrored his efforts by introducing these herbal remedies into the food and ultimately, we included the others on the list above but saw no reaction, beneficial or detrimental, to the herbal approaches.

Of course, it's a different tank, different fish, and possibly a different infection, so we did not conclude that the herbal treatments are ineffective. It simply did not work in this specific event.

Additionally, the author also cites some anecdotal reports of third parties reporting success using these aquarium vitamin supplements, although neither he nor we have tested these:

Anti-Viral (Herpes) Drugs

We then attempted treating the tank with acyclovir (Valtrex) as indicated in a report from a private breeding facility in Florida, casually mentioned here in a Wikipedia page on viral lymphocystis (CTRL-click the link below.)

[Lymphocystis - Wikipedia]

We mirrored the dosage indicated in their tests; 200mg/10 gallons for two days twice. This did have an observable effect in that it seemed to lessen the size of the growths, enough to conclude some degree of effectiveness. However, as we had no toxicity data for this employment, we were hesitant to continue treatment long-term. However, we used acyclovir for four days as prescribed above without any negatives to report.

Probiotic Therapy and Denial of Binding Sites

Our final approach was probiotic, and surprisingly enough, it proved to be very successful. We can't say this will work in every instance, but it was profoundly successful in our severum tank.

The concept is the denial of binding sites via probiotic therapy. That is, the virus, as with bacteria, requires attachment to existing cells from the host. Bacteria also require “sites” for replication. Competition for these precious binding areas makes the propagation of disease a lower probability. Viruses, in particular, have no form of motility such that binding areas are required for propagation. Our theory was to inundate the fish with harmless bacteria to “insulate” the cells from the virus, thereby disrupting replication.

We began a regimen of heavy doses of a proprietary mixture of *inert heterotrophic* and specific species of *nitrifying beneficial bacteria*. Daily, massive doses (1oz/gallon) made the water temporarily very cloudy but otherwise showed no adverse effects. Additionally, we added aeration, as these bacteria are aerobic and we wanted to ensure there was no oxygen depletion. The image below is from a subsequent test, as we have none from the initial severum tests.

Parrot fish under biotherapy treatment (image by Reverse Respiration)

Below you can see our external and microscopic images to compare with those taken at UFAS (University of Florida, Institute of Food and Agricultural Sciences):

FA181/FA181: Lymphocystis Disease in Fish (ufl.edu)

The following page contains our microscope images of cell nodules compared to those from the University of Florida.

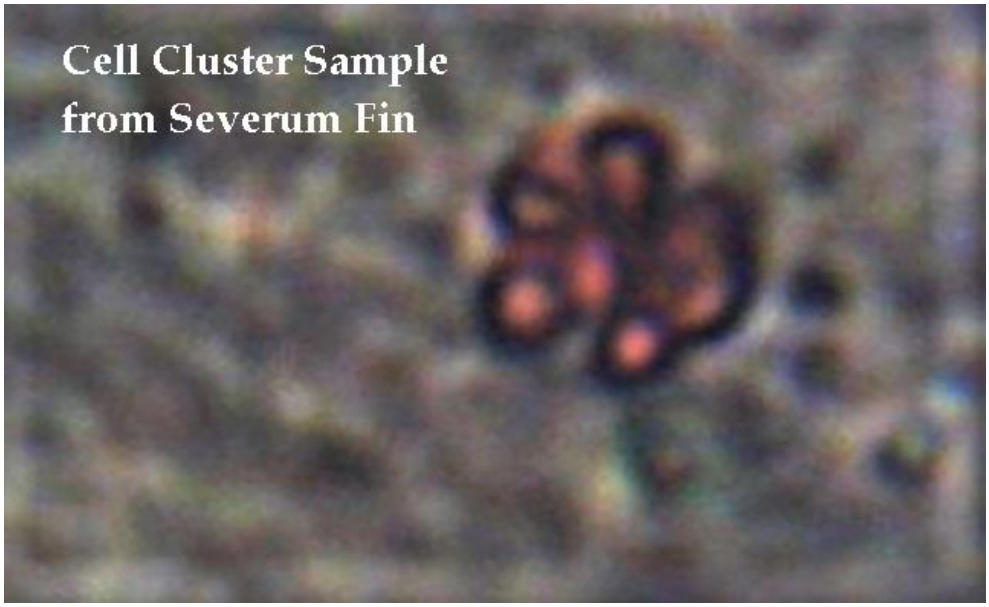
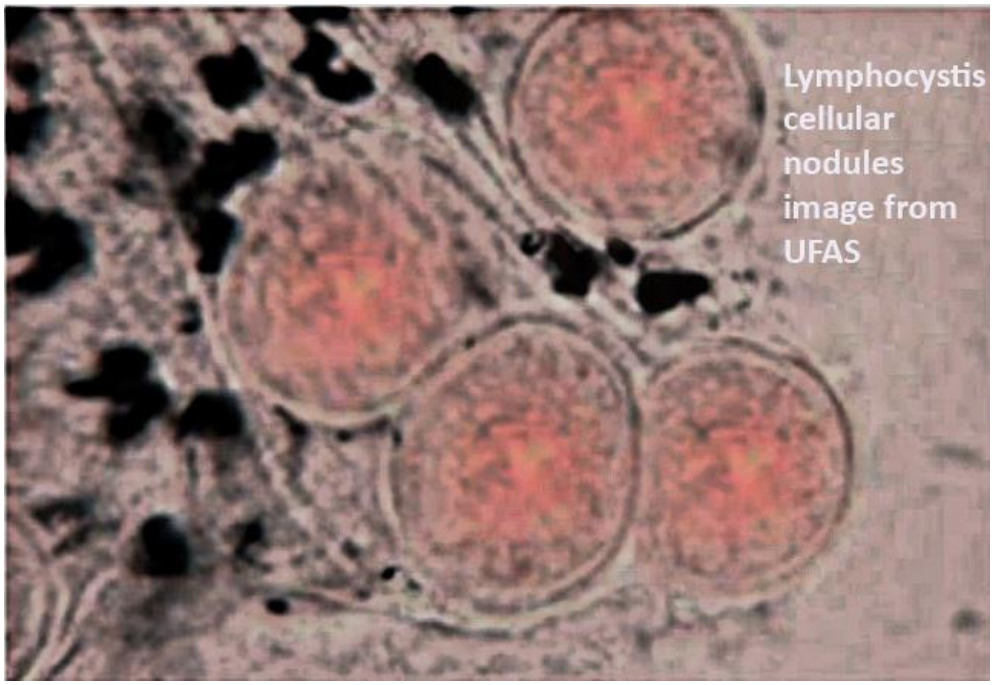


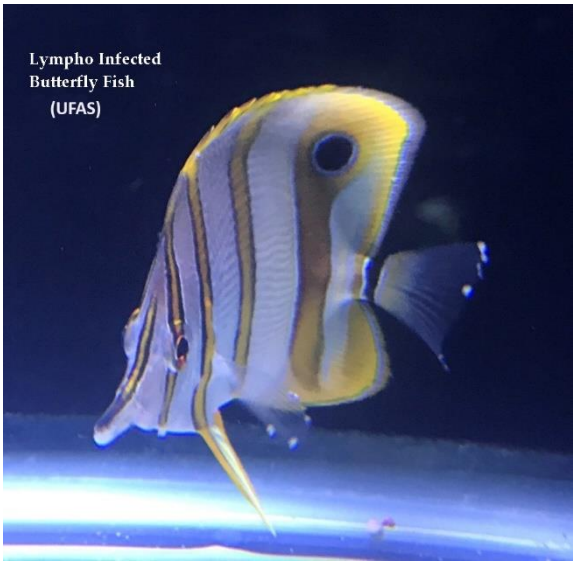
Image by Reverse Respiration

Lymphocystis distorted cell nodules from UFAS:



The results were fast and remarkable. Six months of treatments with drugs had failed, but *beneficial bacteria biotherapy* virtually arrested the lymphocystis in just five days.

Lymphocystis infected butterfly fish from UFAS:



Our severum with suspected lymphocystis:

Severum after three days of probiotic therapy:

Severum on Day 5 of probiotic therapy:

While we cannot assert with authority that this treatment would translate to others' experiences, we thought it may prove of benefit to those who are battling lymphocystis or other difficult pathogens, especially ones that have been resistant to common medications.
To that end, we can share a safe and inexpensive alternative therapy to treat infections with virtually no risk. In this case, we successfully treated an incurable, verified viral infection in our fish. We hope you also see similar successes when faced with difficult pathogens.

Image by Reverse Respiration

 Patent Pending June 2024