

Anaplasmosis—When to Vaccinate?

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I am from Coalgate, Oklahoma, also known as Anaplasmosis Valley. It is endemic in our area and really has been one heck of a problem. Of course, I would classify anaplasmosis in our area as the most costly disease entity that we see. Or, over the years it has been the most costly disease entity that we have seen other than parasitism and shipping fever complex and, of course, in some cases, brucellosis.

How many of you have really seen quite a bit of anaplasmosis? There is no need then for me to go through the symptoms, the way that this disease is spread, etc. We all know that it spreads, at least in my area, primarily by the horse fly. I do not believe that the horn fly is a primary vector. It may occur every once in awhile, but it is rather rare. I think my neighboring colleague from around Ada, Dr. Don Connally, will agree with that. Occasionally we see a case that is spread by carelessness in dehorning. I do not think that it spreads on hypodermic needles. The spread in this manner is of no great consequence.

Prior to the development of anaplasmosis vaccine, the methods of control that we had at our disposal were the complement-fixation testing techniques and subsequent isolation of identified carrier animals during the vector season. The big problem with this was that many owners were reluctant to identify carrier animals and also since the outbreaks would occur in the summer and fall, the people were really enthusiastic about control when they had the problem. But it gets on up in December and January and February, when you need to be doing the fixation tests, they would lose their enthusiasm a lot of times. It created an additional management problem. Also, in those herds where we did use this technique, there were problems created by poor fences, bulls fighting through the fence, tearing them down, getting carrier and noncarrier herds mixed together. In the cases where complete isolation was accomplished, in some of the purebred herds where we used this technique, the complement fixation technique was very highly successful. It just absolutely stopped the problem.

Other methods of control included, and still include, the feeding of aureomycin in a salt mineral form or in a daily feeding schedule. The problem with this is that it is rather expensive. Also, uneven ingestion by various individuals in the herds will prove to be ineffective on some individuals due to lack of intake. Tetracycline injections, 1 to 1-1/2 grams administered intramuscularly at 30-day intervals during the vector season, are highly effective, and of course a lot cheaper than it used to be. But this is an additional management problem. It creates a situa-

tion where you have to work your cattle through a chute every 30 days.

The way we treat anaplasmosis in my practice is primarily with massive blood transfusions. I know that transfusions in cattle for this condition, people have told me, is not effective. But in my experience it is the only thing that really is effective for the critically ill patient. When the hemoglobin levels fall below approximately 3.5 gm%, a blood transfusion is definitely indicated, if you can collect the blood effectively and if you can get it to the patient without getting killed. Our transfusion technique is we use as much blood as we can get. We feel like 2 gallons is always better than one. And we even go to 3 or 4 or 5 gallons on a large bull. We restrain the individual, the donor animal, in a squeeze chute where possible, and with a halter or lariat rope where it is not possible. Of course, we do not like to get into those situations. We put a tourniquet around the donor's neck and use a western-type needle, which has a rather large diameter for venapuncture. As an anticoagulant we use sodium citrate, approximately 1 tb. in a gallon jug. Collecting a gallon of blood by this manner, if you have good restraint, takes approximately 3 to 4 minutes. The time-consuming factor is the administration of the blood. We administer it just as fast as we can. We just use a regular IV tube and 12-gauge, 2-inch needle and we let the blood flow in just as fast as it will go and where possible we will give both gallons simultaneously, if it is possible to get the two 12-gauge needles in the jugular vein.

On cattle that are extremely anemic, this is just like pumping up a flat tire. Once in a great while we will see an adverse reaction in one of these transfusions. I think that this is probably due to an incompatibility of blood type, but there is neither time nor the indication, the frequency of this occurring so seldom, to cross-match blood before you start.

Anaplasmosis vaccine then came on the market in 1966 and we were in big trouble. We needed something that would control this condition. We feel that it has been the answer for us in our area. It has not been without its problems, however. As far as efficacy goes, I believe that the anaplasmosis vaccine is probably the most efficacious vaccine that I have ever administered. If cattle are properly vaccinated according to the directions of the manufacturer, they will be protected. The only cases where we have had a breakdown in the protection is in herds where we knew that we did not vaccinate all the cattle properly.

I might add one thing about the treatment. It is just a sort of progress report. Earlier this year a doctor from Pfizer Laboratories contacted us about the possibility of using an experimental tetracycline that they were manufacturing. It contains 200 mgs of tetracycline per cc. What they wanted us to do on some of these anaplaz cases was to inject 7-8 gms of this in a normal 1,000 lb. cow. Just one injection intramuscularly. And we have tried this and I can see no difference in our response. It is no better or nor worse than using tetracycline injections of the dosage and concentration that we had been using prior to this time.

I might add also, that when we give a blood transfusion to these cattle, we will also give from 2-3 gms of tetracycline with this intravenous blood transfusion. And usually some vitamin B₁₂.

I do not think that the vitamin B₁₂ makes a lot of difference, but using this stronger tetracycline in a single intramuscular injection appears to be working real well.

If in those individuals where hemoglobin level is not to the point that it is critical, 3.5% or below, we just treat them with good nursing care and some form of tetracycline and try to leave them alone and hope that they recover.

As far as when to vaccinate, whether to vaccinate? This is strictly dictated by what kind of a problem you have, as far as I am concerned. For instance, I do not think that there is much reason to vaccinate dairy herds. It is such a simple matter to control parasites on these cattle, to control flies and all. They are to the dairy barn every day. They are observed real closely. I think that there is just really not much indication for it, in my estimation. Also, on a dairy herd, it would appear to me that it is simpler to do the complement fixation test each year. And to perhaps, during the summer months, take special care to control parasites and also perhaps feed aureomycin to the carrier cows, during the dry period, to clear up the carrier state.

Other than that, I think cattle under range conditions in our area, where we have a lot of brush, and wild cows, they are hard to gather and they are hard to look after in the summertime. With that kind of

problem, anaplasmosis vaccine is worth giving when it is really indicated and it has been the answer to our problems. Of course, we all know that it has been given a black eye in so far as this condition known as NI is concerned. Most certainly it is involved in the NI problem. It triggers this incompatibility between the red blood cells of the calf and the colostrum of the dam. In our experience we have seen very few herds, probably less than 1/2 of 1% of these vaccinated herds that will show up with NI. Now, the incidence within the herds will be rather high, sometimes as much as 30 or 40% of the calves will be bothered with it. This is unfortunate, but at the same time, it is a better alternative than we had before.

So, really, there is not much question. It is pretty much of an open-and-shut case where I come from as to what we do.

One other thing that I would point out. I think that the immunity conferred from anaplaz lasts a great deal longer than the people think it does. Back in the early 1970's we had a lot of problems with anaplasmosis and a lot of herds were vaccinated. Along about '73, early '74, the economics of the cow-calf business got rather sick. For one reason or another, quite a few herds that had been vaccinated originally with the two doses, not less than 30 days and not more than six months apart, just shut down their vaccination program and did not follow up, because they were thinking about dispersing their cows, selling them for slaughter or something along that line. Well, in those herds that they kept around, there have been very few problems. About the only cattle that have come down with a clinical disease have been replacement heifers that they raised, or cows that they have bought that were not vaccinated.

Really, to me, there is not much question what has happened to us in our area. There would be days in late summer and fall that we would treat seven or eight cases of anaplasmosis daily. This summer, due to a combination of factors, of course, it was dry weather, we did not see many horse flies, but I think even if we had, we had less problem with anaplasmosis.