feel that these tests have been of considerable help in our practice.

May I summarize it in this way: 1) The most important thing is still the veterinarian making the examination. He still has to decide whether these tests are necessary. Seventy-five percent of the cases we see we can diagnose without these tests, but the other 25% are where these tests may give us considerable aid. 2) The use of the various enzyme tests are a helpful aid in a positive diagnosis of the more difficult cases. 3) The tests give us a better prognosis of the case and possible course to follow. 4) It gives me an added feeling of satisfaction that we have added a more sophisticated test in the field of diagnosis. I feel I can look Joe Doakes in the eye and say that this is what our laboratory tests reveal, and this I am certain we will find—a feeling of satisfaction.

## **Bovine Restraint**

John Carson, D.V.M. Brodhead, Wisconsin

I am going to describe some restraint techniques I use in our dairy practice in southern Wisconsin. Maybe a better title would be, "How to Keep From Getting Kicked." For those of you that still work with family-sized units—60 milking cows or less—you will find these techniques helpful if you are not already using them. For you consulting veterinarians, pass them along to your client's help.

Next, I wish to describe the use of a nose lead with one added feature-a bull ring attached to the chain end. By looping the rope around a post and back through the bull ring it gives you the added leverage you need to really stretch the cow's neck. A cow restrained like this will not be shaking her head and neck while being given IVs or taking blood samples. This is also a helpful restraint for any other procedure dealing with an uncooperative cow. Nearly every individual cow I treat gets a nose lead applied whether it be for examination, treatment or surgery. Some veterinarians prefer to use a rope halter rather than a nose lead. You can use the bull ring through the halter rope just as well but I would whiplash around the ring for added strength.

Whenever possible, pull the cow the same direction as the side you are working. This is advantageous as it allows the cow to see what an where you are and also causes the rear quarters to move in the opposite direction.

To restrain a rear foot for examination and treatment, a rope is thrown over a beam and then attached just above the hock. The next step is to put the loose end of the rope around the hock, going between the legs from the back to the front. This step is important because it puts the leverage in the right spot. Now, with a little pressure applied, the cow will jump a little and it is very easy to raise that leg. If you have one of those very uncooperative beasts that lays down, you can throw the loose end of the rope over the beam again to give you another pulley advantage. To keep the cow from thrashing her foot foward and backward, I then put this halfhitch in the rope, pull it forward around the stanchion, back to the knot and tie it. Now, if you stand about six feet tall and weigh about 190 pounds and get your hip and leg under the cow's leg I guarantee you you would not get kicked any further than across the alley.

You can apply this same technique to the front foot. I'm sorry I do not have any slides but throw the rope over the beam, attach the honda to the fetlock rather than the knee, go between the legs from back to front, and pull. Make the halfhitch and then pull laterally to pull the foot away from the cow's body.

Sometimes I have the problem of a sealed barn with no exposed beam to throw a rope over. In this case I use an S-shaped hook made by my local blacksmith. I can not remember who to give credit for this design but I sure thank him. I have had enough ice-tong type hooks fall on my head to swear off them for life!

You can drive this hook into any wooden floor joist or post. Then you have the ring to run the rope through. When you are done you just pound on the opposite S-curve and it comes right out. This type of hook also works well if you are working with calves in a pen and there is nothing to tie your halter rope to. One-half to one cc of Rompun<sup>R</sup> given IV will cut a 1200-1400 pound Holstein cow down to my size in 10-15 minutes. Another very common restraint used daily is the tail hold. My drug salesman told me the previously mentioned dose would knock the cow down. It does for some, but

if I want the cow recumbent, I usually resort to one of two methods: If you are going to remove a claw or do any teat surgery, you will want ropes to restrain the rear legs anyway. The cow is definitely not anesthetized and she can kick with the same force as if she were awake. She just does not kick as often!

## "Laparotomy Anesthesia and Suture Technique"

Jake Hines, D. V.M. Oxford, Wisconsin

The annual convention of the AABP has been the highlight of my practice each year. I practice alone and feel some obligation to my clients to explain any absence that may occur. Since Bob Harris asked me to provide a practice tip for this year's program, I have been telling my clients of my involvement on the program. Now, if none of you will tell my clients how little I contributed, everything will be just fine.

I feel that a very basic concept of healing is ignored in some surgical techniques. To me, minimizing trauma to the surgical site is more important in first degree healing than any other consideration. All of the laparotomy surgery I do is performed on the farm. I normally do not make call backs on routine surgery cases as I expect them to heal without complications.

In anesthesizing the surgical area 2% lidocaine is infiltrated into the site. A 23 gauge, 3/4 inch disposable needle is used for the first line, just penetrating the top layer of the skin. The second line of infiltration is also placed using the same 23 gauge, 3/4 inch needle, inserting the needle as far as it will go. If the surgery is performed in the left flank, the remainder of the infiltration is done with a 20 gauge, one inch needle. When the surgical site is the right flank, a final line of infiltration is made using a 20 gauge,  $1\frac{1}{2}$  inch disposable needle.

My suture technique is very standard but the suture material used may be different than some. I never buy any material but gut and the largest size gut used is No. 2 chronic. The skin is closed with a cruciate stitch using nothing larger than No. 2 Vetafil. The suture needle used is a 3/8 circle cutting approximately 2½ inch long. The outside diameter is no larger than an 18 gauge hypodermic needle.

Having an assistant press inward on the opposite flank to force the air out of the body cavity, before closing the peritoneum, will prevent subcutaneous air following surgery.

I wear sterile disposable rubber gloves in performing laparotomies—this protects my fingers in putting tension on the suture material and it impresses the farmer.