low dosage of 1-2 tenths of a cc that we use for many cases.

Answer: European dosages are extremely variable, ranging from .025 mg/lb. to as much as 3, 2.5 mg/lb. either I.V. or I.M., but those dosages are various actions, whether you want recumbency or whether you want just sedation. With the results we've shown here, our maximum dose is pretty much in the ballpark.

Question: Do you know where the abortion rates start?

Answer: It has nothing to do with dosage as much as the point in pregnancy.

Practice Tip

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Everyone stand up. The mind can't absorb any more than the seat can withstand and you can listen while standing up. We are going to talk about people for about three minutes, and I am going to change your income. You see, I never had a cow write me a check and the Creator gave you a marvelous and wonderful example of how you should use the instruments on your head when you get out of that car in the farmer's yard. You have two eyes and two ears and nostrils and one mouth and that's the proportion in which you should use your mouth when you are standing in front of that farmer. Secondly, I have six honest serving men. They taught me all I know. Their names are what, where, when, how, why, and who. I can promise you that these six serving men can make you a whole lot smarter because your clients will teach you more than you'll ever learn in college. Not that I want to berate the college at all, but the man who is people-oriented has more fun out of life and he has a more rewarding practice.

Someone else covered what I was going to talk about, so I thought we'd talk about something else and give you a stretch. Thank you.

Urethral Calculi Surgery

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In our range practice, when doing urethral calculi operations on steer calves up to yearlings, we have found that using a very small, half-curved, atraumatic needle with 4-0 silk suture has been the most successful.

Using cutting needles has given us leaks and makes it very difficult to make a small stitch without cutting out the wall of the urethra.

When using catgut in the past for suturing, we had a number of operations that the urethra scarred closed from the reaction to the catgut.

Since going to the use of silk about four years ago, we have not had any scarring problems.

The sutures are put in place by going down through the wall of the urethra, bringing the needle out the top edge of the mucosal lining, and then entering the opposite side of the incision at the top edge of the mucosa and coming up through the wall of the urethra. A simple continuous suture is used to close the incision in the urethra with a second layer of simple continuous sutures used to close the fascia.

Use of a Tape Recorder in a Large Animal Practice

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A tape recorder has several uses in our practice on a daily basis:

1. Record calls right after they are made. Information is fresh in your mind and it saves time–no writing before or while you are driving.
2. Sudden ideas you have about something while driving can be recorded.
3. Can dictate letters between calls.
4. Can turn cassette over to secretary for office recording of calls, medicine used, etc.
5. Very useful at meetings on continuing education sessions and information can be brought back for associates or partners to hear.

Type of tape recorder required:

1. Pocket-sized or at least small and compact.
2. It should conveniently fit into glove compartment of truck or car and microphone can hang on dashboard.
3. Acceptable recorders available: a. Popular Science, Nov. 1975 issue, and b. Craig, Sony, Superscope and Wollensak, to name a few, have good recorders, moderately priced between 50 and 150 dollars.

Give it a try–you'll like it.

A Technique for Sampling the Bovine Respiratory Tract

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Respiratory disease is one of the most commonly encountered disease processes of the bovine animal. Accurate diagnosis of lower respiratory disease is extremely difficult. Successful treatment is oftentimes completely dependent upon selection of the proper antimicrobial agent and/or supportive therapy. Early accurate diagnosis and instigation of proper therapy can reverse many cases of respiratory disease which, when treated with whatever may "work" at the time, would result in great economic losses.

In human medicine several methods of obtaining specimens from the lower respiratory tract have been used. The transtracheal aspiration technique is currently considered the safest and the one that gives

the most consistent results. Mansmann and Knight have described a technique used successfully on over 100 cases of respiratory tract disease in the equine. No serious complications have occurred. Creighton and Wilkins have described a technique in dogs with no untoward reactions.

The identification of the causative agent or agents in respiratory disease allows the clinician to perform antibiotic sensitivity testing and subsequent indicated antimicrobial therapy. More importantly, prognostication is much more acute by knowing the agents involved in the disease process.

My practice tip describes a technique of sampling the lower respiratory tract of the bovine animal, whether it be an adult or neonate.

Materials: Sterile saline, sterile syringe, 12 cc for calves, 35 cc for adults; polypropylene catheter[1] 5 fr. 55 cm in length; indwelling catheter[2], 14 ga., 5 cm in length; sterile B-P scalpel blade.

Site: The ventral cervical area where the trachea is most easily palpated percutaneously is the site of the aspiration. This is most generally in the middle one-third of the neck, slightly lateral to the midline.

Preparation: Routine clipping of the hair and surgical preparation of 10x10 cm area over the site.

Restraint and Anesthesia: Locally infiltrate down to the trachea with 3 to 5 cc of 2% Xylocaine. With the adult bovine, a rope halter or nose tongs with the head pulled to the left places the trachea in close proximity with the skin. In calves, an assistant holding the calf is sufficient.

Procedure: With a B-P blade make a 1 to 2 cm stab incision over the trachea and through the subcutaneous tissue. Thrust the 14 ga. indwelling catheter between two tracheal rings into the lumen of the trachea with the point of the needle down the tracheal lumen towards the thoracic inlet. Withdraw the needle from the catheter and feed the polypropylene catheter down the indwelling catheter into the tracheal lumen. Some of the indwelling catheters have a very narrow tip that may require removal prior to the passing of the catheter. This is eaily done with a scalpel blade or scissors. As soon as the cough reflex is stimulated, attach syringe (with saline) to the catheter. The greatest amount of aspirate is obtained during a cough, so apply suction as the animal coughs. Inject 2 to 5 cc (depending on the size of animal), then aspirate. Air will build up in the syringe and should be disconnected and expelled, then reconnected and the aspiration continued. The total amount of material aspirated will vary from 1/2 to 5 cc. Remove the polypropylene catheter, then the indwelling catheter. I routinely place one horizontal mattress suture in the skin.

[1]Polypropylene catheter, Sovereign®, 5 fr. 55 cm mfd. by Sherwood Medical Industries, St. Louis, Mo.

[2]Indwelling catheter, Sovereign®, large animal 14 ga. catheter with 16 ga. needle, 5 cm long, Sherwood Medical Industries, St. Louis, Mo.

[3]Minimum Essential Medium, Grand Island Biological Company, Oakland, Ca.

Complications: Subcutaneous emphysema may occur in young active animals but this has been a minor problem never requiring treatment.

Culture of Samples: The sample can be directly plated onto blood agar, or frozen for mycoplasma or viral isolation. Viral culture medium[3] has been used in horses with no adverse effects. I have not used this material. Cytological exam can be done by placing mucous strands and cells on a glass slide and doing an impression smear using Wright's stain.

Conclusion: I have utilized other materials, such as 9 ga. bleeding trochars with stiff polyethylene tubing (such as found in the innermost tube of a Teigland swab). However, I have found more swelling and trauma to the trachea using these materials. A 14 ga. hypodermic needle can also be used but there is always the chance of the sharp needle cutting off the plastic catheter, a most drastic complication.

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Correction of Umbilical Hernia in Calves

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Despite questions concerning the genetic implication and herd value, practitioners are often asked to repair umbilical hernias in heifer calves. The calf, having the umbilicus positioned at the most ventral aspect of a pendulous abdomen, is predisposed to umbilical hernia. Instead of the conventional surgical technique, I have been using a porous elastic adhesive bandage (Elastoplast) to facilitate natural closure of the umbilical ring.

The umbilical ring will vary from one to three fingers (2 to 9 cm) in diameter, and the hernia must be completely reducible; otherwise, the conventional surgical method must be used. Ideally, the bandage should be applied at 6 to 12 weeks of age.

The calf is simply tied with a halter and remains in the standing position. The surgeon returns the hernia to the abdominal cavity without difficulty and with the aid of an assistant the bandage is applied snugly to the abdomen. The first wrap of bandage is applied directly over the hernia, with successive overlapping wraps being applied cranial and caudal to the hernia. A safety pin is used to secure the end of the bandage.

The owner is instructed to watch the bandage for bunching. The elastic adhesive bandage is removed three to four weeks after application by cutting it with scissors along the calf's back and stripping it down both sides of the abdomen.

The method has been successfully used for umbilical hernias of numerous calves, one colt, and one