

Demonstrating Large Animal Castration Tool Use Using Low-budget Testicle Models

Introduction

When introducing new skills to students, hands-on learning is extremely valuable. One topic that comes around each semester in my Animal Reproduction and Physiology course is large animal castration tools. At the beginning of lab, students are provided an overview of the tools and how they are used. They can pass the tools around and examine them. The opportunity to actually practice with the tools they had in their hands was intriguing; unfortunately, we did not have the funds to purchase models for practice. This led to searching for alternatives in order for students to have hands-on learning opportunities without worrying about financial constraints.

Implementation

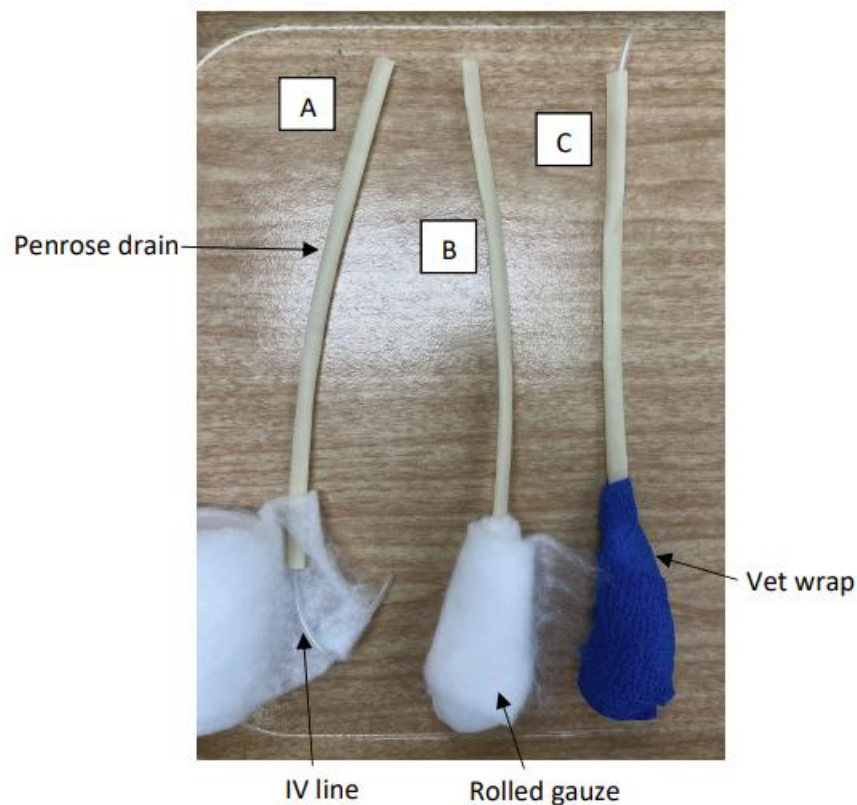
We started with securing supplies that may be used to make these models without much financial investment. I found that rolled gauze, vet wrap bandage, and intravenous (IV) administration sets would make suitable models. Teaching in a veterinary technology and pre-veterinary medicine program gave me the advantage of having most of these materials available from other laboratory exercises. The materials had already been used by students and instructors on various models to practice skills and were going to be discarded. If one was to buy these materials out right, it would roughly cost between \$30.00 and \$60.00 to prepare 30 models. Making these demonstration models is relatively simple and does not take a great amount of time. With the aid of two teaching assistants, we made 40 models in under 30 minutes. First, the IV set must be cut into smaller sections. I found that cutting them into sections of 10 inches each provide plenty of practice area for the students, without being excessively long. This also allows for one IV set to be used to simulate the spermatic cord for four or five models. Once cut, we wrapped rolled gauze around one end of the line, which provided bulk to simulate the testicle. The rolled gauze was then covered in a layer of vet wrap bandage, which clings and holds the rolled gauze in place. Progression from the initial product to the finished product can be seen in Figure 1, starting at A and ending with C. After the initial design, I began trying different variations to see how we could improve the simple models without adding much expense. We found that Penrose drains could also be used to simulate the spermatic cord in place of the IV set or in combination. We could actually run the IV set through the Penrose drain and provide some bulk to the spermatic cord of the models. This step is not necessary and does increase the cost of the supplies. Figure 1 shows the use of IV sets, Penrose drains, rolled gauze, and vet wrap bandages.

Summary and Recommendations

Utilizing these models in the Animal Reproduction and Physiology course appears useful. Anecdotal student feedback was positive regarding the model's ability to help them understand how to appropriately use these castration tools. Students were able to practice using these tools without the concern of working with live animals, and the course can consistently provide these models, whereas providing enough live animals to participate would not be feasible. Based on student feedback and experience using these models, the following recommendations should be considered: 1) Faculty are not limited to only using the supplies listed above for creating these models; 2) Large animal castration tools will need to be available for student use. It is recommended that these be in good working order to give the students the best experience; 3) These low-budget models are a useful alternative when instructing students on large animal castration tools on a limited budget. These models are not a replacement for live animal use, but are a resourceful supplement for hands-on learning. From experience, perfecting student handling of the tools builds confidence levels before use on live animals. Adaptations can be made to these models to meet the needs of students in subsequent semesters, making enhancements as needed to maximize student success.

Figure 1

Supplies and Steps Used to Create Low-budget Testicle Models



Submitted by:

Brittany L. Kirby, DVM
Hutson School of Agriculture
Murray, Kentucky