**Open castration in Bulls**

Open castration can be performed on cattle of any age; however there are some very important caveats. Open castration involves the use of a knife or blade to open the scrotum and expose the testicles, which are then removed. Care must be taken to cut only the scrotal sack, so that the testicles can later be exposed by traction through the surgical opening and cut off. The incisions in the scrotum are left open to drain (the bigger the incisions, relative to the size of the animals, generally the less chance of infection). Cleanliness is of utmost importance. Hands, scrotum and instruments should all be disinfected prior to performance of any surgical procedure.

A Newberry knife is an extremely handy instrument to own when performing surgical castration. The scrotum is pulled down and back and the blade of the Newberry knife is inserted into the scrotal skin and clamped shut, making sure not to touch the testicles. The knife is then pulled down and back leaving two incisions in the scrotum. The testicles then pop out of the incisions.

Another method to expose the testicles for open castration is to cut the bottom 1/3 to ½ of the scrotum away, using either a scalpel blade or very sharp knife. Care must be exercised to avoid cutting the testicles, the large vein on the inside of the calf’s leg, or your own hand.

 If open castration is performed on very young animals, the testicles may be exposed, the membrane covering the testicles carefully cut open and the membrane (vaginal tunic) separated from every part of the testicle except the very bottom (the tightest attachment.) At this point, the membrane is completely severed from the testicle and the testicle itself is gently but steadily pulled from the open incisions until the spermatic cord tears and the testicles can be removed. Try not to touch anything that is to remain within the calf, as this will minimize the risk of infection. The remains of the cord snap back into the body, so that exterior hemorrhage is minimal. There is a slight risk of internal hemorrhage; but if this method is reserved for the extremely young bull calves, it is an excellent and safe procedure.

 If an emasculator is to be used, the testicles within their covering of membrane are exposed. Traction is applied with one hand, while the other pushes the scrotum up. This breaks down the muscle that regulates how high or low the testicles hang. By breaking down this muscle, the animal can no longer pull the testicles back up tight to the body. Now the testicles are ready to be removed. The actual removal of the testicles requires somehow severing the entire cord. This is best accomplished by use of an emasculator. Most emasculators have both a cutting edge and an area that crushes and crimps the spermatic cord, drastically reducing hemorrhage, and this is the only kind that should be used. The emasculator is placed straight across the spermatic cord above the testicles. The hand holding the testicle reduces the tension on the spermatic cord, so that the cord is not stretched tight when the actually cutting and crushing occurs. The emasculator is closed. It is then held tight for a minimum of 15 seconds (or longer, the bigger the animal). It is critical that the crushing part of the instrument be closest to the calf’s body, and the cutting blade below that. Because of the way the instrument in made, the easiest way to remember that is (as we were taught in veterinary college) is always place the emasculator nut-to-nut. This ensures that the cutting blade is toward the bottom of the testicle and the crushing portion is closest to the body. It does no good to crush the cord below where it is cut.

 In the case of very large bulls, knife castration should be supplemented with ligation, or sutures placed through the spermatic cord to prevent massive blood loss. This would be accomplished with the animal cast upside down or on its side, and is far more likely to be performed by a veterinarian. Ligatures need to be sterile, and absorbable.

 Disadvantages to open castration include the risk of fly strike (in warm weather) and/or infection (anytime, but greater risk during muddy periods when the open wound can be easily contaminated) and serious, even life threatening hemorrhage. Open castration is contraindicated in cases of inguinal or scrotal hernias, when abdominal contents may be present in the inguinal area or the scrotum itself. Open castration in such a case could result in evisceration.

Studies have documented that open castration is far more acutely painful than other methods when performed on older bulls, and performing such a procedure on larger bull calves without analgesia could be considered by many to be cruel and inhumane.

Reference: <http://www.leawhitefarms.com/castration.htm>