

Summary

Comparative investigations for the castration of bull calves by blockage of the blood vessels in the Funiculus spermaticus with the help of the diathermy, by compression with the Burdizzo pliers or with a transcutane ligature

According to the requirements of the law for animal protection should be tried to develop a compatible minimal-invasiv castration method by using diathermia. It was examined, whether with this method a lock of the Arteria testicularis can be achieved.

In addition a diathermy operation kit was developed, which consists a generator and a needle electrode as well as a neutral electrode. A bipolar use of percutaneously needle electrodes in connection with locking pliers for testicle bag neck wasn't possible, so that teflon-coated monopolar needle electrodes were set manually into the range of the spermatic cord vessels. In comparison to the castration method after Burdizzo 113 bull calves were diathermally treated with this mobile equipment.

After the treatment with GnRH one week after the operation testosterone and testicle condition were estimated by slaughtering seven month later. After an initial lock of the Arteria testicularis on 52,2% of the animals (testosterone < 0,01nmol/l) there was a both- sided catch in 14,3% and a one-sided catch in 36,7% and thus after anaemic necrosis a loss of function of the testicles.

Only seven Animals showed a both-sided castration effect. The testosterone level of the animals, which only were diathermally treated successfully on one side, was with an average of 0,37 nmol/l higher than controlled animals (0,21 nmol/l). The functional testicle increased and their weight remained compared with untreated testicles of the same age group at approximately 40 %.

A castration success with diathermally coagulation necroses can be obtained by an experienced user. The parameter of diathermia are usable and compatible without disturbance of the general condition. However predominantly uncertain and repeatable castration effects did not result, so that this method has no practical relevance.

The diathermally needle electrode with appropriate isolation can open several options for veterinary application, so among other things a purposeful coagulation of various vessels, whereby only one injection point is to prepare.

The anatomically exact setting of coagulation necroses by means of diathermia under visual inspection would revalorize the developed method. By the associated opening of the testicle bag the method can't be called animal compatible and minimal-invasiv.

The secretion of testosterone after the treatment with GnRH is possible as an indicator of the castration effect even with very young bull calves, however can lead with the diathermally method to misinterpretations. In the own investigations after the treatment with GnRH the testosterone values (0,21-0,37 nmol/l) are comparable with the few individual values were found by MONGKONPUNYA et al. (1975) and KESLER et al. (1976).

The transcutaneous ligature of the spermatic cord vessels as an animal-fair castration method appears to be alternatively possible and can be recommended practical veterinary surgeon in connection with anaesthetic clearance of horns at bull calves.

By the minimal invasive, selektive banding of the spermatic cord and its vessels it appears to be more compatible for the animals than the Burdizzo method.

A castration with the Burdizzo pliers can further be used with older bull calves and bulls.

Due to the complex damage of the entire testicle during the appropriate handling a successful castration with this method is relatively safe.