

¿SE JUSTIFICA LA OVARIECTOMÍA EN VACAS? PRINCIPALES RIESGOS Y BENEFICIOS

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RESUMEN: La ovariectomía bilateral, castración o esterilización, es un procedimiento quirúrgico que consiste en extirpar los ovarios, mediante diferentes técnicas siendo utilizado por productores de los sectores de vacas lecheras y vaquillas en corrales de engorde. La técnica previene la gestación y elimina la principal fuente de estrógeno a nivel ovárico. Las ventajas para las vaquillas esterilizadas incluyen: prevención de novillas preñadas en el corral de engorde, eliminación de aditivos alimenticios que suprimen el estro, no requiere de prueba de brucelosis y tuberculosis lo que facilita su movilización por transporte fuera del país, mejor ganancia diaria promedio y conversión alimenticia en comparación con novillas sin castrar, y las vacas adultas castradas obtienen mejor rendimiento de la canal y marmoleo de grasa en la masa muscular, generando una mejor relación costo beneficio al sacrificio. La Asociación Americana de Medicina Veterinaria, recomienda que se utilice la técnica aséptica adecuada y la sujeción en todos los procedimientos, y que la ovariectomía de flanco realizada sin anestesia es inhumana. El dolor y la incomodidad deben minimizarse tanto como sea posible antes, durante y después del

procedimiento quirúrgico. Realizar un diagnóstico de preñez antes de esterilizar las vaquillas podría reducir el riesgo de complicaciones.

ABSTRACT: Bilateral ovariectomy, castration or sterilization, is a surgical procedure that consists of removing the ovaries, using different techniques, being used by producers in the sectors of dairy cows and heifers in feedlots. The technique prevents pregnancy and eliminates the main source of estrogen at the ovarian level. The advantages for sterilized heifers include: prevention of pregnant heifers in the feedlot, elimination of feed additives that suppress estrus, does not require testing for brucellosis and tuberculosis, which facilitates their mobilization for transport outside the country, better average daily gain and feed conversion compared to non-castrated heifers, and castrated adult cows obtain better carcass yield and fat marbling in muscle mass, generating a better cost-benefit ratio at slaughter. The American Veterinary Medical Association recommends that proper aseptic technique and restraint be used in all procedures, and that flank oophorectomy performed without anesthesia is inhumane. Pain and discomfort should be minimized as much as possible before, during, and after the surgical procedure. Performing a pregnancy diagnosis before sterilizing heifers could reduce the risk of complications.

KEYWORDS: ovariectomy, risks and benefits.

INTRODUCTION

It is recognized that castration of cattle is important to inhibit heat behavior, improve the characteristics and quality of meat, and increase health security, by allocating cattle only for supply. Castration procedures cause pain and discomfort and studies indicate that preoperative use of non-steroidal anti-inflammatory agents as well as local anesthetics reduces the pain and distress associated with castration. The veterinarian should counsel clients and advocate for the use of procedures and practices that reduce or eliminate pain and distress (AVMA 2014). These include low-stress coping techniques and the use of clinically effective medications approved or permitted by the association. There are a number of acceptable castration techniques, as well as numerous pain management protocols considering relevant variables such as the animal's age, weight, temperament, skill level of the operator/technician, environmental conditions, available facilities and the human and animal safety (AVMA 2014).

MATERIALS AND METHODS

Ovariectomy in cows can be performed through a flank or vaginal approach. The flank approach begins with adequate asepsis, local anesthesia or block, and incising the left paralumbar fossa. (Coetzee, *et.al.* 2010), After opening the different surgical planes with an incision of approximately 15 cm, the hand is introduced to identify the ovaries and amputate with scissors or an ovariectomy instrument. The vaginal approach is performed by isolating the ovaries by rectal palpation. (Bronzuoli, Carlos. M. 2009). Disinfection of the vulva and

perineal region is performed, a low epidural block is applied, and a sterilization instrument is introduced into the vagina. A colpotomy incision is created by introducing the sterilization instrument through the vaginal fornix dorsolaterally to the cervix. There are variations in the world of vaginal methods (colpotomy) that act through the uterus to remove the ovaries or prevent blood supply to the fallopian tubes. Dutto ovariometer (Bronzuoli, Carlos M. 2009), Webb of the fallopian tube, Willis castrator (Petherick, *et.al.* 2014), Kimberly-Rupp cylindrical, Resinger and Richter epheminator with emasculating forceps, Riliu ovariometer for lassoing with clamp, linear strangulation with the Chassaignac fine chain bruiser, seal castration with nylon plastic clamp, linear extraction, (AVMA 2011). The surgical wound is inside the uterus, without sutures and not external to the skin (Kimberling and Rupp 1980). There is no damage to the skin, nor loss of meat in the carcass due to the scar (Moran, *et.al.* 2016). Animals recover in 4 days after surgery. They are faster procedures than flankotomy and reduce suffering and collateral damage. It is important to carry out the application of surgical protocols or procedures in relation to cleaning, disinfecting and shaving the incision site with a scalpel, manually locating the left ovary, introducing scissors for cutting and extraction, locating the right ovary, cutting and extraction. Both ovaries are checked. The superficial plane or skin is stapled and the muscles and peritoneum are not sutured and the wound is healed with methylene blue. The technique is widely accepted among surgeons

RESULTS

The different surgical procedures have been peer reviewed by the Animal Welfare Division of the American Veterinary Medical Association (AVMA), where you can mainly see a review of the scientific literature, which includes information obtained from proprietary data, legislative and regulatory review, market conditions and academic ethical evaluations. For the specific case of collection and transfer of cattle for completion in the United States, the dominant method authorized by the USDA is Flancotomy or extraction of the two ovaries with a 15-20 centimeter incision on the left flank, after asepsis of the paralumbar fossa and shaving of the area (Flores Delgado, Pamela. 2013). An aponeurosis is made by cutting the transversus abdominis muscle, it is manually explored in the peritoneum of the abdominal cavity until the ligament of the two ovaries is cut with curved serrated scissors or another oophorectomy instrument (Rizzo, *et.al.* 2016).

DISCUSIÓN

The AVMA recognizes that castration procedures cause pain and discomfort, and studies indicate that preoperative use of nonsteroidal anti-inflammatory agents and local anesthetics reduces the pain and distress associated with castration. The veterinarian should always counsel clients and advocate for the use of procedures and practices that

reduce or eliminate pain and distress. These include low-stress coping techniques and the use of approved or permitted clinically effective medications. Complications of transvaginal sterilization include hemorrhage and peritonitis; both can be fatal (Urrutia, *et.al.* 2012). Peritonitis can be caused by unintentional intestinal or rectal perforation (Piccinali, Ricardo. 2013). The mortality rate is much higher when the surgeon is inexperienced (Cattle Standards and Guidelines. 2013). Hemorrhage is more significant when the animal is pregnant, due to increased blood flow and the risk of cutting the uterine arteries (Cala. *et.al.* 2008). Castrating heifers is required, because in the USA the import of animals with reproductive capacity that are not genetically pure of a superior breed that allows genetic improvement is not allowed, even when their destination is the feedlot for finishing and slaughter (Gastelum. 2011). When considering the potential zoonotic risks, females and males should be castrated to the quarantine station on the border with the USA or many other international markets (Caceres. 2016). During pregnancy, Brucellosis increases the possibility of developing and spreading to other animals in the pen due to placentitis during parturition (Gastelum. 2011). The USA does not want to run the risk of an unexpected outbreak, which prevents them from exporting their meat to other parts of the world (SENASICA. 2015).

CONCLUSIONS

Little research and formal animal welfare assessments have been published regarding the pain and discomfort experienced by bovids during and after sterilization (Moran. 2016). Clinical signs that have been interpreted as indicators of postsurgical discomfort include stiff walking, prolonged prostration as well as raised head and tail (Ruiz. *et al.* 2015). In one study, the discomfort experienced by animals was considered comparable to that following normal rectal palpation (Prado. 2016). However, it should be noted that behavioral responses to painful stimuli may not be proportional to the degree of pain experienced. Pain is also evident when there is trauma to the vaginal wall due to childbirth, and the use of epidural anesthesia is common when procedures are performed to repair this tissue. Blood cortisol concentrations have been studied as indicators of physiological stress in animals, and it was found that, regardless of whether the oophorectomy was performed through the vaginal or flank approach, cortisol concentrations increased after the procedure (Rizzo *et al.* 2016). This study also evaluated serum haptoglobin concentrations, which in cattle may indicate a systemic inflammatory response. Serum haptoglobin concentrations were significantly higher in flank-spayed heifers compared to vaginally spayed heifers 8 to 96 hours after the procedure (Rizzo. *et.al.* 2016). Haptoglobin did not increase significantly in vaginally spayed heifers.

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