



Influence of anatomy of cervical ostium on the efficiency of cervical traversing after relaxation protocol in Santa Ines ewes

Influência da anatomia do óstio cervical na eficiência da transposição cervical após protocolo de relaxamento em ovelhas Santa Inês

Viviane Lopes Brair^{1,*}, Lucia Prellwitz¹, Rodrigo Oliveira Cunha², Fabiana Nunes Zambrini³, José Domingos Guimarães³, Marco Antônio Paula de Sousa⁴, Joanna Maria Gonçalves Souza-Fabjan¹, Maria Emília Franco de Oliveira⁵, Jeferson Ferreira da Fonseca⁶

¹Faculdade de Medicina Veterinária, Universidade Federal Fluminense, Niterói-RJ, Brasil; ²Faculdade de Medicina Veterinária, Universidade do Grande Rio – Unigranrio, Duque de Caxias-RJ; ³Faculdade de Medicina Veterinária, Universidade Federal de Viçosa, Viçosa-MG, Brasil; ⁴Faculdade de Ciência Animal, Universidade Federal do Pará, Castanhal-PA, Brasil; ⁵Faculdade de Ciências Agrárias e Veterinárias, Universidade Estadual de São Paulo, Jaboticabal-SP, Brasil; ⁶Embrapa Caprinos e Ovinos, Sobral-CE, Brasil.

*E-mail: vivilopesbrair@gmail.com

Ewes have certain particularities in the cervical anatomy leading to the commercial use of surgical methods for collecting embryos in this species. However, the literature shows that Non-Surgical Embryo Recovery (NSER) is possible through specific protocols for cervical relaxation (Fonseca et al., 2019. *Reprod Fertil Devel*, 31:17-26). The cervical ostium may have several classifications: flap, duckbill, rosette, rose, spiral or papilla. This study aimed to assess the influence of cervical ostium anatomy on the difficulty of traversing cervical rings. A total of 42 pluriparous Santa Inês ewes received intravaginal sponges containing 60 mg medroxyprogesterone (Progespon[®], Syntex, Buenos Aires, Argentina) for six days and 200 IU eCG (Novormon 5000[®], Syntex, Buenos Aires, Argentina) i.m. and 37.5 µg d-cloprostenol (Prolise[®], ARSA S.R.L., Buenos Aires, Argentina) latero-vulvar, both 24 h before sponge removal. Ewes were naturally mated during estrus and NSER was attempted 7 d after estrus onset. All ewes received a relaxation protocol based on 37.5 µg d-cloprostenol latero-vulvar and 1 mg estradiol benzoate (Estrogin[®], Biofarm, São Paulo, Brazil) i.m. 16 h before NSER and 50 IU oxytocin (Ocitocina Forte UCB[®], São Paulo, Brazil) i.v. 20 min before the procedure. NSER was performed following the method previously described (Fonseca et al., 2019. *Reprod Domest Anim*;54:118-125). Each animal received a classification of cervical ostium: rosette, rose, duckbill, flap, mosaic or mixed and a grade according to the difficulty of traversing cervix with the Hegar dilator: Grade 1 (very easy; <1 min); Grade 2 (easy; 1 to 3 min); Grade 3 (moderate difficulty; 3 to 7 min); Grade 4 (difficult; 7 to 10 min); and Grade 5 (impossible to penetrate). The frequency of cervical ostium found was: 43% duckbill (18/42), 36% rosette (15/42), 7% mixed with (3/42), 7% flap (3/42), 5% mosaic with (2/42) and 2% rose with (1/42). The percentage of transposition according to the classification of the cervical ostium (Grade, 1, 2, 3, 4 and 5) was, respectively: duckbill (5,6/ 16,7/ 16,7/ 11/ and 50%); rosette (13, 27, 13, 13 and 34%); mixed (0, 33, 67, 0 and 0%); flap (0, 0, 33, 0, 67%); mosaic (0, 0, 0, 0, 100%); rose (100, 0, 0, 0, 0%). Overall, NSER success rate was 57.1% (24/42). The most predominant cervical ostium in Santa Inês ewes was duckbill and it was possible to traverse 50% of animals. It was not possible to traverse both animals with cervixes classified as mosaic, whilst sheep presenting either mixed and rose cervix had 100% of efficiency. In conclusion, the current data suggest that the morphology of cervical ostium may have influence on the success of embryo collection by Non-Surgical Embryo Recovery (NSER) technique. Financial support: Embrapa (02.13.06.026.00.04) and Fapemig (CVZ-PPM 00201-17).

Keywords: embryo recovery, cervical ostium, sheep.

Palavras-chave: recuperação de embriões, óstio cervical, ovelhas.