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Ultrasonographic cervical evaluation in Lacaune ewes subjected to transcervical embryo collection

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The degree of completeness and interdigitation of the cervical rings affects cervical passage, which is a necessary step for transcervical embryo collection. This study assessed the use of cervical ultrasonography (US) to select the most suitable animals for transcervical embryo collections. Lacaune ewes (n=24) were synchronous estrus-induced with medroxyprogesterone acetate sponges (60 mg, Progespon®, Syntex, Buenos Aires, Argentina) for nine (n=12) or six days (n=12), 37.5 µg d-cloprostenol i.m. (Prolise®, Tecnopec, São Paulo, Brazil) and 400 IU eCG i.m. (Novormon 5000®, Syntex) 24 h before device removal. After sponge removal, ewes were checked twice daily for estrus detection. At 12 h after the onset of estrus, the cervix was longitudinally evaluated by transrectal US (8.0 MHz, Mindray M5VET®, Shenzen, China), to count the number and disposition of rings to classify the degree of misalignment in three scores: grade I – lined up, grade II – intermediate, and grade III – misaligned (Fonseca, CT 45, Embrapa Caprinos e Ovinos, 2017). Cervical passage was performed at day 7 of estrus cycle by transcervical technique (Fonseca *et al*., Theriogenology, 86:144-151, 2016). Cervical transposition rate was tested by Fisher's Exact test, and the number of rings counted by US or during cervical passage were evaluated by ANOVA and paired t-test at 5% significance, using SPSS Statistics (IBM®Inc., Chicago, USA). Association of variables was evaluated by Pearson correlation. The percentage of ewes for each degree of cervical score on US during estrus was: grade I 20.8% (5/24), grade II 20.8% (5/24) and grade III 54.5% (14/24). Cervical surpass was possible in 100%(5/5) of grade I, 80%(4/5) of grade II and 79.5% (11/14) of grade III ($P<0.05$). The number of rings counted during procedure (6.5±0.2) or by US (6.1±0.1) did not differ ($P>0.05$). However, the association of these variables was poorly correlated ($r=0.20$, $P>0.05$); in 20% the count in US was overestimated and 35% underestimated related to count in procedure. In 45% of ewes, the number of rings was the same in both by US and the procedure, and in 85%, the difference in the number did not exceed one ring. In conclusion, US cervical evaluation allows estimating the number of rings, and the ranking of animals by US cervical misalignment, making possible to select animals suitable for transcervical embryo collection.
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