Safety of stallion testicular biopsy performed by novice operators
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Testicular biopsy is a valuable technique for the study of testicular function and diagnosis of testicular diseases. However, this technique remains seldom used in stallions due to fear of complications. The aim of the present study was to evaluate the efficacy and safety of testicular biopsy in stallions performed by novice operators.

Six adult stallions (4 to 7 years old) scheduled for castration were used. Testicular biopsies were obtained aseptically using a 14 ga core self-firing instrument (Bard Biopsy Systems, Tempe, AZ) by senior veterinary students with no prior experience. Students were given instructions in a 30-minute seminar regarding how to perform the technique. Stallions were placed in stocks and sedated with detomidine HCl (10 µg/kg; IV) or xylazine (0.5 mg/kg; IV) and butorphanol tartrate (0.01 mg/kg; IV). Testicular ultrasonography was performed on all stallions before, and daily for five days after the procedure. The marginal part of the testicular artery was evaluated using pulsed-wave color Doppler and the peak systolic velocity (PSV), end diastolic velocity (EDV), resistance index, and pulsatility index were recorded using standard techniques. Measurements before and after biopsy sampling were compared within and between testicles using general ANOVA/AOCV after log transformation. Biopsy samples were evaluated to determine their diagnostic validity. Stallions were castrated ten days after the biopsy procedure and testes were examined grossly for any abnormalities. Representative samples were submitted for histopathological evaluation. All stallions received antimicrobials daily for four days, starting one day before the biopsy procedure. A single dose of flunixin meglumine (1.1 mg/kg; IV) was given following the procedure.

No systemic effects were observed during the study period. Ultrasound evaluations revealed subcutaneous/albuginea hematomas in three stallions, which resolved within one week. After 10 days, the biopsy site was identified on each excised testicle as a pin point. No gross abnormalities were detected except for a small amount of fibrinous material between the albuginea and the tunica vaginalis in one stallion. There was no significant effect of biopsy sampling on blood flow (P< 0.05) when paired testicles were compared. There was no difference between biopsied and non-biopsied testicles for PSV (P=0.39) and EDV (P=0.47). However, there was a significant decrease over days for PSV (P<0.011) and for EDV (P=0.02). Core testicular biopsy sampling, using a self-firing Bard® instrument, is a safe and reliable procedure in stallions even in the hand of novice operators if they follow simple instructions.

Keywords: Testis, biopsy, histology, pathology, equine

Reference