Oral presentations

Comparison of air-charged catheters versus fluid-filled catheters for urethral pressure profilometry in dogs

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OBJECTIVES

To compare newly developed air-charged catheters with traditional fluid-filled catheters when performing urethral pressure profilometry as a diagnostic test for urinary incontinence in dogs.

METHODS

Eleven dogs presented for investigation of urinary incontinence were included in the study. A randomised

crossover study design was used; urethral pressure profiles were performed using both air-charged catheters and fluid-filled catheters in all dogs. Information was obtained on time taken to perform the procedure, mean urethral closure pressure and grade of artefact observed on the trace.

RESULTS

Satisfactory studies were obtained in all dogs using both techniques. The time taken to perform urethral profilometry using air-charged catheters was significantly shorter than that using fluid-filled catheters ($p=0.001$). Comparison of the mean urethral closure pressures obtained using each catheter type, using a Pearson correlation co-efficient, revealed good correlation between the techniques $r=0.905$ ($p<0.01$). Artefacts were lower grade and less frequently observed when using the air-charged system compared to the fluid-filled system.

STATEMENT

This study has validated the use of air-charged catheters for urethral pressure profilometry in dogs against the gold standard fluid system. The air-charged system is also faster to use and produces less artefact. Air-charged technology for urethral pressure profilometry can thus be recommended for further use in clinical/research dogs.

Urine dipstick discordance between standard visual and automated methods, when performed within a small animal teaching hospital

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OBJECTIVES

Urine dipstick analysis is one of the most frequently performed point-of-care tests, both for diagnostic and monitoring purposes. Results may vary between operators/methods due to several reasons. At present, the magnitude of this variation within the veterinary profession is unknown. The aims of this study were to determine the precision of urine dipstick analysis results between visual and automated reading

methods, and if this could affect clinical management of cases.

METHODS

Canine urine samples were pooled and divided into three aliquots: one plain, one mixed with a glucose solution, and one mixed with bovine serum. Final year students, veterinary nurses and veterinary surgeons, blinded to each sample, were then asked to perform urine dipstick analysis, both with direct visualization and with an automated analyser. The subjects' technique was observed during the study period.

RESULTS

Sixty-one subjects completed the analysis: 45 veterinary students, 13 veterinary surgeons and 3 veterinary nurses (total of 3,660 results). Precision was greater using the automated reader compared to visual reading. Variation which would have affected clinical decision making was seen with visual reading of glucose, ketones, and pH. No variation which would have affected clinical decision making was seen with the automated reader. The most common observed technique errors were: lack of sampling homogenisation ($n=53$) for both visual and automated; and not timing readings as per dipstick strips manufacturer instructions ($n=32$), when performing visual analysis.

STATEMENT

This study suggests that in an environment with multiple operators, automated dipstick reading improves precision and may improve data for clinical decision making.