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CLINICAL-DIAGNOSTIC COORDINATES IN PROSTATIC AND PARAPROSTATIC CYSTS IN DOGS

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Abstract

Prostatic cysts are fluid-filled structures located adjacent to the prostate gland. Clinical expression is often asymptomatic, rarely tenesmus, lethargy, anorexia, and hematuria occur.Paraprostatic cysts are more common in uncastrated dogs over 8 years of age, without a predisposition to breed. These fluid-filled cysts are often localized or extend from the outer edges of the prostate.The research took place between 2017-2020 on 23 dogs of different breed and age, within the Clinic of the Faculty of Veterinary Medicine Bucharest and within the private veterinary practices.
The diagnosis of paraprostatic cysts was established in 7 dogs age 1-5 years (n = 1), 5-10 years (n = 2), 10-15 years (n = 4), of different breeds.The reason for the presentation at the clinic was the observation by the owners of the tendency to constipation (n = 5), dysuria (n = 2) and a urination with blood (n = 3). Ultrasound identification of cystic formations with paraprostatic localization highlighted the existence of cystic formations with dimensions of 20 mm (n = 4), 70 mm (n = 2) and 3.8 cm (n = 1). In the mass of the prostate glandular parenchyma, cystic dilatations were identified, with an anechoic content with rare corpuscular elements in suspension (n = 3) and cellularity (n = 4), accompanied by ultrasound specific artifact distal enhancenment. Intraprostatic cysts were found in 16 dogs age 1-5 years (n = 3), 5-10 years (n = 5), 11-15 (n = 5) and 16-20 years (n = 3), common breed (n = 6), German Shepherd (n = 3), pointer (n = 1), English Bulldog (n = 1) Dachshund (n = 1), Afghan Greyhound (n = 1) and West Highland White Terrier (n = 3).
The reason for presenting to the doctor was dysuria (n = 5) and hematuria (n = 7), or routine ultrasound examination. Ultrasonography detected single, multiple or scattered cystic formations of round / ovoid type with a fine echogenic wall clearly delimited by the rest of the parenchyma of infracentimetric dimensions (n = 12) centimeters in 4 dogs, with clearly homogeneous and anechoic content, accompanied by the distal enhancement.

Key words: *prostatic cysts, dogs, paraprostatic cysts.*

INTRODUCTION

Prostatic cysts are fluid-filled structures located adjacent to the prostate gland. (Codreanu and Nae, 2016).
Prostate cysts are described as an increase in prostate secretions that exert greater pressure on the excretory ducts (Khadidja and Adel, 2017). Consequently, they are retention cysts secondary to excretory canal obstruction due to prostatic squamous metaplasia (Johnston et al., 2000).
Clinical expression is often asymptomatic, unless the size of the cyst significantly increases prostate volume, when tenesmus, lethargy, anorexia, and hematuria occur (Krawiec and Heflin, 1999).
Paraprostatic cysts are more common in uncastrated dogs over 8 years of age, without a predisposition to breed. These fluid-filled cysts are often localized or extend from the outer edges of the prostate, but their exact origin is uncertain (Rajan, 2014).
Research has suggested that their origin is secondary to ductal occlusion of the prostate following squamous metaplasia or a type of prostate hematoma in the final stage or secondary to the remains of the uterus masculinus or the Mullerian duct. They can increase to significant size causing tenesmus and dysuria with hematuria following direct compression of the colon and bladder (Vititoe, 2017).

MATERIALS AND METHODS

The research took place between 2017-2020 on 23 dogs of different breed and age, within the Clinic of the Faculty of Veterinary Medicine

Bucharest and within the private veterinary practices.
The studies and investigations were carried based upon the suspicion and confirmation of the diagnosis of prostatic cysts or paraprostatic cysts which involved performing the clinical examination and paraclinical analysis consisting in urine analysis and imaging evaluations.
Preliminary urinary biochemical examination was performed using Urispec Plus urine strips or diagnostic strips or interpreted using a respective automated analyzer, IDEXX VetLab UA Analyzer, and urinary density was determined using a refractometer. REC-300ATC. The assessment of the urinary sediment was performed with the Optika microscope.
Imaging was performed using the ESAOTE Veterinary MyLab 60, Sonoscape DW-F5 with microconvex probe.

RESULTS AND DISCUSSIONS

The diagnosis of paraprostatic cysts was established in 7 dogs age between 5 years (n = 1), 5-10 years (n = 2), 10-15 years (n = 4), of different breeds.
The reason for the presentation at the clinic was the observation by the owners of the tendency to constipation (n = 5), dysuria (n = 2) and a urination with blood (n = 3) (Table 1).

Table 1.Total patients with paraprostatic cyts

TOTAL PATIENTS WITH PARAPROSTATIC CYSTS *(n = 7)*				
BREED		AGE		
		1-5 years	6-10 years	11-15 years
German Shepherd	*(n=3)*	*(n=3)*	*(n=2)*	*(n=2)*
West Highland White Terrier	*(n=3)*			
Bichon Maltese	*(n=1)*			

The animals were examined clinically and the data obtained were recorded in the clinical observation sheet, recording a body temperature with variations in normal parameters, a good general condition with water and food appetite present, and heart and respiratory rate within physiological limits.
The data collected from the clinical examination on the frequency of urination revealed a normal frequency and quantity, with the observation of a yellow color in 4 patients and red in 3 individuals being interpreted as a suspicion of initial hematuria.
Palpation of the urinary and genital tract indicated a lack of obvious physical changes in the kidneys or bladder, but with the detection of a soft consistency in the genital area (n = 2).
Urine samples collected by the owners were subjected to the biochemical analysis examination where the presence of leukocytes ++ (n = 4), urobilinogen + (n = 3), proteins + (n = 3), +++ (n = 1), blood + (n = 4), +++ (n = 3), with a urinary pH of 5.5, 6.5 (n = 4), 7, 7.5, urinary density of 1.030 (n = 5), 1.020, 1.040, were identified, and on microscopic examination the presence of erythrocytes and flat epithelial cells. (n = 7).
Ultrasound identification of cystic formations with paraprostatic localization highlighted the existence of cystic formations with dimensions of 20 mm (n = 4), 70 mm (n = 2) and 3.8 cm (n = 1) contributing vital to establishing the diagnosis of certainty. In the mass of the prostate glandular parenchyma, cystic dilatations were identified with a irregular wall (n = 3) and distinct (n = 4) with an anechoic content with rare corpuscular elements in suspension (n = 3) and cellularity (n = 4), accompanied by ultrasound specific artifact represented by the phenomenon of posterior enhancenment (Figures 1, 2).

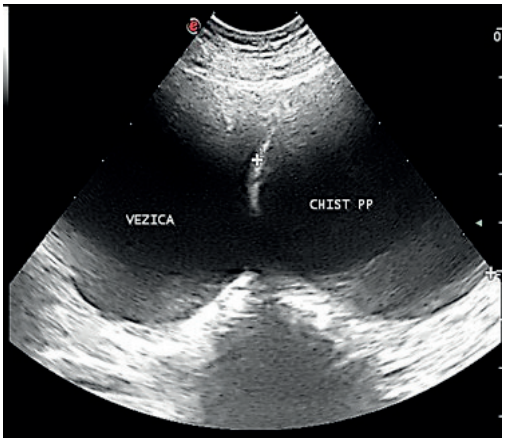

Figure 1. Paraprostatic cyst

Paraprostatic cysts located deep in the bladder neck were also accompanied by obvious dysuric phenomena (n = 2) with a tendency to mechanical urinary retention.

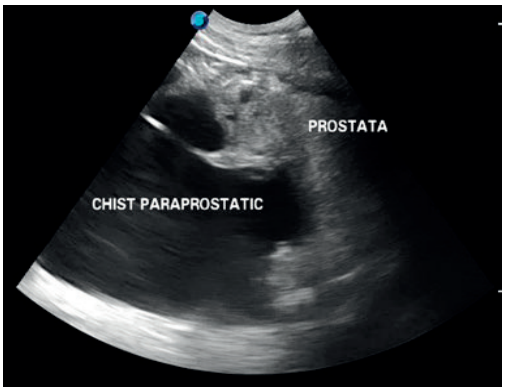

Figure 2. Paraprostatic cyst

Intraprostatic cysts (Figures 4-7) were found in 16 dogs with age between 1-5 years (n = 3), 5-10 years (n = 5), 11-15 years (n = 5) and 16-20 years (n = 3), breed - common breed (n = 6), German Shepherd (n = 3), Pointer (n = 1), English Bulldog (n = 1), Dachshund (n = 1), Afghan Greyhound (n = 1) and West Highland White Terrier (n = 3) (Figure 3).

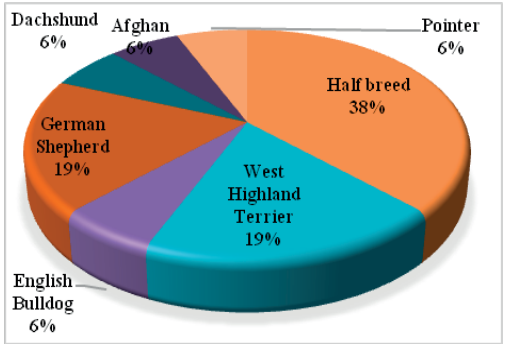

Figure 3. Distribution by breeds in dogs with intraprostatic cysts

The reason for presenting to the doctor was dysuria (n = 5) and hematuria (n = 7), in the rest of the patients their identification at the routine ultrasound examination was a diagnostic surprise. Body temperature was generally within the range of range of the species (n = 14). The frequency of urination was generally normal (n = 12) and pollakisuric in 4 individuals, with a yellow (n = 11) and red (n = 7) color being observed.

Physical examination of the genitourinary system did not reveal any obvious physical changes, and digital rectal examination revealed a prostatomegaly (n = 12) with painful sensitivity present in one patients.

The urine samples collected were chemically analyzed:- leukocytes ++ (n = 4), protein + (n = 2), ++ (n = 2), blood + (n = 3), ++ (n = 2), +++ (n = 4) , ++++ (n = 7), pH of 5.6 (n = 4), 6.5 (n = 8), 7 (n = 3) and urinary density of 1.030 (n = 10), 1025, (n = 6), and when evaluating the urinary sediment, the presence of red blood cells and ammonia-magnesium phosphate crystals was observed (n = 1).

The ultrasound imaging detected single, multiple or scattered cystic formations of round/ovoid type with a fine echogenic wall, clearly delimited by the rest of the parenchyma, with infracentimetric dimensions (n = 12) and centimeters size in 4 dogs, with clearly homogeneous content, anechogen and accompanied by the phenomenon of distal enhancement.

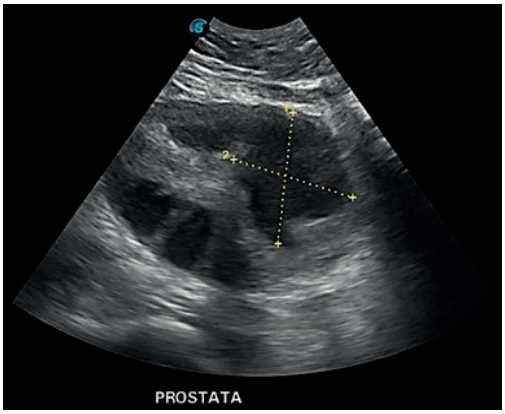

Figure 4. Intraprostatic cyst

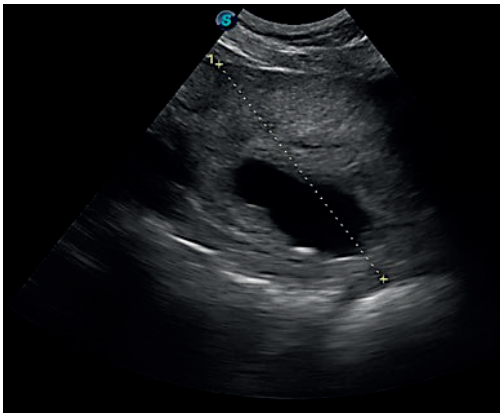

Figure 5. Intraprostatic cyst

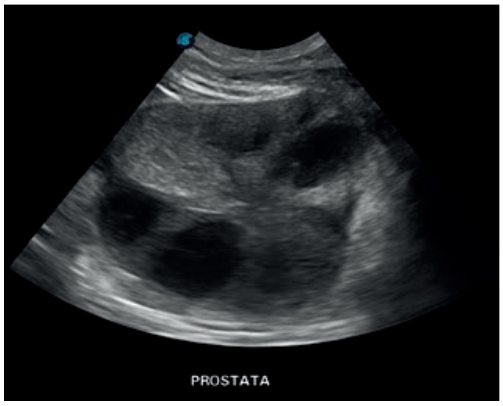

Figure 6. Intraprostatic cyst

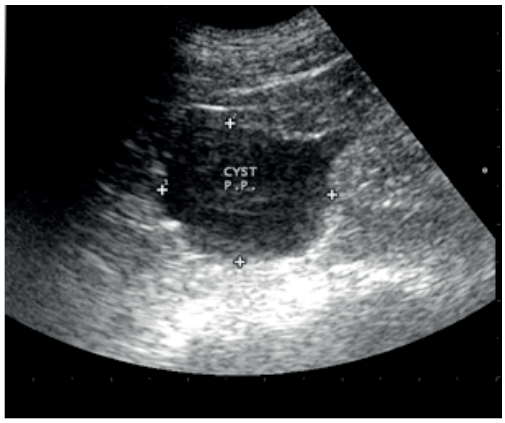

Figure 7. Intraprostatic cyst

CONCLUSIONS

Intraprostatic and paraprostatic cysts can vary in severity, with clinical signs that are often non-specific leading to common diagnoses of prostatic syndrome.

The present study indicates that a full diagnosis will be established after an complete physical examination with transrectal digital palpation and with ultrasound exam which has a great value for diagnosis.

Prostatic ultrasound includes visualization of the prostatic gland, its urethra, the bladder and the locoregional lymph nodes.

The research included in the study offers clinical and diagnosis coordinates which, altogether, and in a correlative way, form a complete diagnosis, suggesting a prognosis and most important the orientation of the therapeutic intervention.

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