

Chronic Prostatitis (CP) in Atlas Shepherd Dog: A Case-Control Study

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Abstract

This study reports the clinical, ultrasonographic and bacteriological findings from dog with chronic prostatitis (CP). A Berger de l'Atlas dog ten years old, suffering from a urinary problem was presented to the canine clinical pathology of Tiaret veterinary science Institute for consultation. The digital rectal examination (DRE) was the first diagnostic test used for CP screening. The classic ellipsoid formula was adequate for determining the prostate volume. Clinical examination of the prostate based on rectal palpation and ultrasound detected prostatic hypertrophy with no signs of pain. Urine and prostatic fluid aspirated under ultrasound guidance are clouding. The estimated increase in the prostate volume measured with abdominal ultrasound was 25.04 cm³. The culture of urine and prostatic fluid revealed presence of *Escherichia coli*. No complications were observed after drainage, and clinical signs in dog.

Keywords: Berger de l'Atlas Dog; Prostate; Hematuria; Ultrasonography; *Escherichia coli*

Introduction

Prostatitis is the second most common canine prostatic disorder, and can be acute or chronic. This may be caused by infective agents. Only one-third of cases of prostatitis are caused by a single bacterial agent and the others show a mixed growth of several infectious agents or no bacteria, depending on the study [1,2]. The chronic prostatitis (CP) in dogs is poorly documented clinically. The main diagnostic techniques for prostatic diseases are history, physical and laboratory examinations, radiography, ultrasonography, seminal cytology and bacteriology. Ultrasonography is the method of choice when investigating the prostate, imaging the size of the gland as well as the homogeneity of the parenchyma [3,4]. The present case was a chronic prostatitis in Algeria Atlas Shepherd Dog.

Case Presentation

A ten year old intact male Atlas Shepherd Dog, weighing 18 kg was presented to canine clinical Pathology, Institute of Veterinary Science, University Ibn Khaldoun, with a history of hematuria, temperature of 38.6°C and foul-smelling urine. *Escherichia coli* (*E.coli*) isolated from both prostatic fluid and urine. Cultural examination showed profuse growth of organisms identified as *E. coli* on the basis of cultural (MacConkey, Agar) and biochemical characteristics (Api, 20E). The measurement of the volume of the prostate (VP) in our case was made at the base of the formula of the ellipsoid according to Kamoplatana et al [5].

L=length (in cm) of the prostate out of longitudinal section, H=average (in cm) heights out of sections transverse and longitudinal; I=width (in cm) of the prostate out of cross-section.

$$V_p = \frac{4}{3} \times \pi \times \frac{L}{2} \times \frac{1}{2} \times \frac{H}{2} = 0.523 \times L \times I \times H$$

Results and Discussion

Urine analysis revealed turbid, foul odour, red color urine and haematuria. A digital rectal examination (DRE), prostatic is asymmetrical, hard texture with irregular surface. However its exam did not involve demonstrations of pain.

The prostate volume, calculated according to formula ultrasound measurements of the ellipsoid was estimated to 25.04 cm³. Ultrasound examination of the prostate (Figure 1) showed an increase of its volume with a heterogeneous texture parenchyma and presence of several cavities hypoechoic prostate. In this review we have not detected a bladder or kidney abnormality. The basis of diagnosis was clinico-bacteriological examination, preponderance of *E.coli*.

In male dog, there are many diseases that may affect the prostate gland whose prostatitis are generally, observed in the whole male dogs [6,7].

Krawiec and Heflin [8] reported that chronic prostatitis represents up to 80% of cases observed in uncastrated male dogs with an average of 8.2 years at diagnosis.

Numerous published studies have described the specificity of various imaging techniques for detection of CP. According to Wilson [9], the age distribution was 8% for dogs over 10 years and <1% for dogs under 4 years of age; Non-castrated dogs represent the vast majority of cases, but neutered dogs may also have prostatic tumours and infections.

Prostatic syndrome is generally recognizable clinically by certain signs, such as difficulties of urine excretion and haematuria that are most often observed with abscesses, benign hypertrophy and tumors [8]. However, to make a definitive diagnosis, clinical examination should be supplemented by further investigations.

During digital rectal examination in the case of a suspected chronic prostatitis, prostate is not painful, but according to the degree of fibrosis secondary to inflammation, it can be asymmetrical and

hypertrophied when there is another concomitant prostate affection such as benign prostatic hypertrophy [10,11].

However, there is no pathognomonic picture of chronic prostatitis where ultrasound appearance of lesions is often non-specific and similar to that of a hyperplasia, abscesses or tumors [5]. But as the inflammation progresses, modified ultrasound image becomes more specific. An increase in size associated with heterogeneous echogenicity is frequently observed; which is in agreement with ultrasound results in the present case.

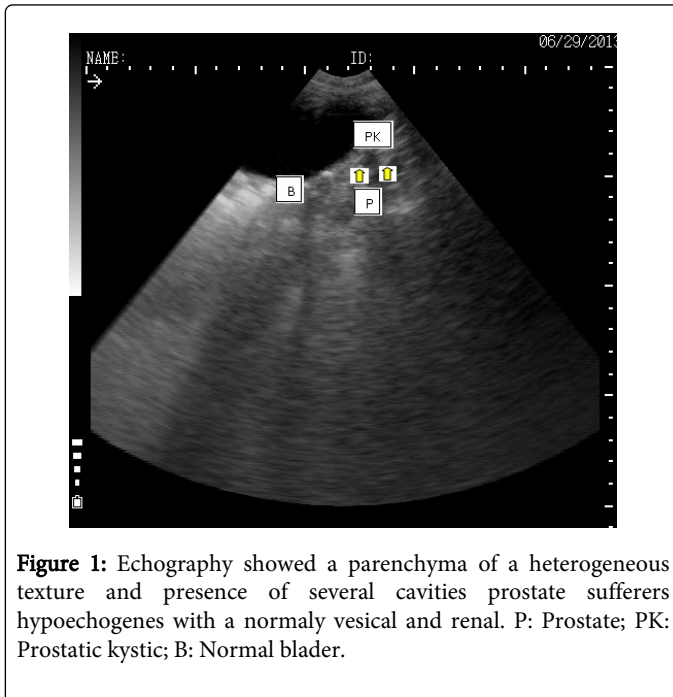


Figure 1: Echography showed a parenchyma of a heterogeneous texture and presence of several cavities prostate suffers hypoechogenes with a normally vesical and renal. P: Prostate; PK: Prostatic kystic; B: Normal bladder.

According to Kamoplatana [5], chronic prostatitis may be a complication of benign prostatic hyperplasia, which is the cause of progressive change in prostate gland symmetry.

On the other hand, Forrester et al. [10] reported that the prevalence of prostate tumors is 0.29% to 0.6% and 3.5% to 15% in dogs with prostatic disease. Castration and age appeared as risk factors with castrated dogs having 4.34 folds higher risk of developing prostate tumor than intact dogs [7,12]. Since the presented dog is uncastrated with absence of pain, suspicion of a tumor in this case is to be excluded.

Chronic bacterial prostatitis is very common condition that causes recurring infections in the prostate and results in swelling, inflammation, and frequent urinary tract infections.

Studies suggest that an *E.coli* bacterial prostatitis was experimentally induced in dogs to determine the effect of castration on chronic bacterial prostatitis [13]. In a research by Palmieri et al. [6], *E. coli* isolates obtained from 11 cases presenting with haematuria (6.7%), acute uncomplicated cystitis and urinary incontinence, respectively. A case of CP was diagnosed in atlas shepherd dog from Algeria. Digital rectal examination, ultrasound and clinic-bacteriological parameters were studied in detail.

Conclusion

Any prostatic syndrome requires a complete physical exam of the genitourinary tract. Nevertheless, this examination must be supplemented by complementary measures in order to lead to a diagnosis of certainty. Ultrasonography remains always the examination of imagery of choice in order to detect the abnormal state of the prostatic parenchyma, supplemented by a bacteriological examination. This study, carried out at the institute of veterinary sciences, will enable us to use other thorough measurements and antibiotherapy agents in the future in order to confirm the diagnosis carried out in front of any affection prostate sufferer.

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