CASE REPORT

A Rare Case of Paraprostatic Cyst in a Doberman Dog

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Introduction

The majority of prostate diseases are observed in middle-aged or older intact male dogs. Large and medium-sized breeds particularly German shepherd and Doberman pincher seem to be frequently affected (Krawiec and Heflin, 1992). The most diagnosed prostatic disease is benign prostatic hyperplasia, followed by prostatitis, while abscesses, neoplasms, and prostatic cysts are extremely rare. The incidence of prostatic cyst is only around 5% of all diagnosed prostatic diseases (42%) (Black *et al*., 1998). Cysts can be either intraparenchymal or extraparenchymal. Intraparenchymal or retention cysts are believed to develop from microscopic cysts that have become encrusted with prostatic gland secretions because of an overproduction of secretions or obstruction of the ducts that occur during benign prostatic hyperplasia (Goodrich *et al*., 2011). Extraparenchymal or paraprostatic cyst is a large, slowly progressive cyst, found next to the prostatic gland, and usually connected to the prostate by a stalk. It is believed that paraprostatic cysts originate from the Mullerian ducts (Kyllar and Cizek, 2020). Dogs with para-prostatic cyst can be asymptomatic or display clinical signs such as dysuria, urinary retention, dyschezia, and ribbon-like faeces. In some instances, the para-prostatic cyst becomes infected and the dog experiences lethargy, decreased appetite, abdominal pain, and fever. It is common to detect enlargement of the gland or cyst on rectal examination. Diagnostic ultrasound often confirms this finding (Lim *et al.,* 2015). There have been cases reported with both prostatic cyst and perineal hernia.

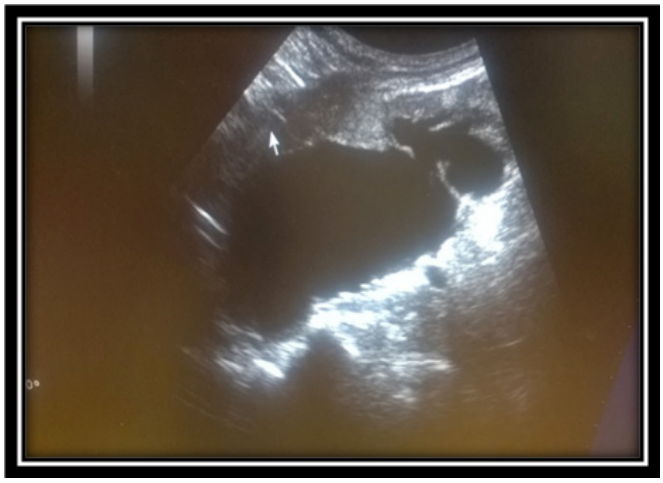

Fig. 1: Ultrasonographic image of the large paraprostatic cyst showing anechoic fluid within it.

Case History and Clinical Observations

A 6.5-year-old sexually intact male Doberman weighing 24 kg was presented with a history of anorexia, dysuria, haematuria, tenesmus, abnormal tail carriage, and abdominal pain for the last seven days. The physical examination revealed a tense abdomen, the dog had signs of pain on palpation of the perineal region. On digital rectal examination, the rectum was severely distended with normal-appearing faeces. A

Fig. 2: Lateral radiographic view of the caudal portion of the abdomen of a dog showing a large para-prostatic cyst caudal to gas-filled intestine.

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symmetric, enlarged and painful mass that extended from the hypogastrium just cranial to the prostate was palpated. Prostate was smooth and non-painful with a normal size. Scrotal palpation revealed small, solid, non-painful testes. During the examination, a mucopurulent discharge was seen from the external orifice of the urethra. Tachycardia and respiratory distress were present along with the normal mucous membrane and normal rectal temperature (101.2˚F). Ultrasonographic examination of the abdomen revealed two structures that look like two bladders in the abdomen. The mass had continuity with the prostate; therefore, it was tentatively diagnosed as a paraprostatic cyst. A urine sample analysis showed haematuria, leucocyturia and bacteriuria. Ultrasound-guided drainage was also performed to determine whether a cyst is infected or sterile, as well as possibly to stabilize the patient before surgery. It could temporarily also relieve the urethral obstruction.

Treatment and Discussion

Initially, the dog was treated for 5 days with Ringer lactate solution, Amikacin (15 mg/kg b.wt., i/v, OD), Amoxicillin Plus Clavulanate (12.5 mg/kg PO, BID) Furosemide (2 mg/kg b.wt., i/v, BID), Tribivet (2 mL i/v, OD), Ranitidine (2 mg/kg b.wt. s/c, BID), and Ethamsylate (5 mg/kg b.wt., i/v, BID). After taking consent from the owner, castration was performed in conjugation with surgical resection of the cyst through a caudal abdominal approach. The owner was advised to give Tab. Moxikind-CV 625 mg (1/2 tablet BID, PO), and Syrup Neurokind-Pet 10 mL PO, BID, for 7 days. Low grade urinary incontinence was noticed. However, no medication was prescribed. Two weeks later the animal was examined and improvement was recorded.

It is difficult to detect para-prostatic cyst until there are signs of urinary obstruction or incontinence develop, which is caused by significant enlargement of cyst that can displace both the prostate and bladder neck and trigone, influences the nervous system's control of urination, and predisposes to cystitis and ureteritis (Stowater and Lamb, 1989). Sometimes cysts are mineralized and often have thickened enhancing walls and non-enhancing fluid-filled centers (Head and Francis, 2002). However, mineralization wasn't observed in the present case. Del Magno *et al.* (2021) reported that 52.9% of dogs had cysts measuring >20 cm and 47.1% of dogs had cysts ranging between 5 and 20 cm in diameter. Ultrasonographically, the cyst presented in this case was similar to that described by Lim *et al.* (2015). We noticed urethral discharge, dysuria, urinary retention, and tenesmus, followed by haematuria. The noticeable clinical signs recorded in this case were in accordance with the earlier reports (Girard and Despots, 1995; Kyllar and Cizek, 2020). There have also been reports of perineal hernia, Sertoli cell tumors (Bakalov *et al.,* 2004), which were absent in this case. Dogs with paraprostatic cysts are usually treated by cyst resection, partial removal, and intracapsular omentalization or drainage (Bray *et al.,* 1997). A cyst's size could influence the procedure to be used. Sometimes, the small cyst can be managed by draining the cyst several times. According to Del Magno *et al.* (2021) either a complete resection or a partial resection and omentalization could be chosen depending on the degree of adhesion between the cyst and the surrounding organs. Usually, complete cyst resection is performed when adhesions between cyst and surrounding organs are minimal. In this case, we chose to remove the cyst completely. The occurrence of low-grade urinary incontinence was noticed after surgery, but it was not treated. Following two months, no further recurrence of the cyst was observed. Castration, in this case, was carried out to minimize the risk of perineal hernia, benign prostatic hyperplasia and prostatitis, although currently there is no evidence to support a hormonal influence on cyst development (Goodrich *et al.,* 2011).

In brief, a middle aged intact male Doberman pincher presented with a history of prostatic disorders was confirmed digitally and by ultrasonographic examination of the abdomen to have an unusual paraprostatic cyst. The cyst was surgically removed via caudal abdominal laparotomy and the animal made uneventful recovery following routine postoperative therapy and had no recurrence till 2 years of follow up.

Acknowlwedgement

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