

# Benign Prostatic Hypertrophy (BPH) and Prostatitis

## BASIC INFORMATION

### Description

The prostate is a small gland that surrounds the beginning of the urethra. The urethra is the tube that carries urine from the bladder to the outside. The normal prostate has two lobes, one on each side of the urethra, with a small indentation between the lobes. The prostate makes fluid that is secreted into the urethra during ejaculation of semen.

**Benign prostatic hypertrophy or hyperplasia (BPH)** is a symmetrical enlargement of the prostate that occurs in intact (unneutered), older, male dogs. It is the most common prostatic disease of dogs.



**Prostatitis** is inflammation of the prostate caused by infection. Prostatitis can be acute (sudden onset) or chronic. If the infection produces a pocket of liquefied material, it is a prostatic abscess. Prostatic infections usually occur in intact (unneutered) male dogs. The male cat has only a rudimentary prostate gland, so these infections almost never occur.

### Causes

Testosterone causes certain types of cells in the prostate to grow in number (hyperplasia) and to enlarge in size (hypertrophy). Over time, this effect causes the prostate to become enlarged (prostatomegaly). A large prostate is normal in intact male Scottish terriers and should not be confused with BPH.

Infection generally comes from the urinary tract, especially the bladder and urethra. In some cases, infection can come from the kidneys. The presence of benign prostatic hypertrophy, prostatic cysts, or tumors predisposes dogs to prostatic infections. Other medical problems or treatments that suppress the immune system can occasionally predispose to prostatitis, including diabetes mellitus, steroid drugs, and chemotherapy.

Bacterial infection is the most common cause of prostatitis. Common examples include *Escherichia coli* (most common), staphylococci (staph), *Klebsiella*, and *Pseudomonas*.

Brucellosis may involve the prostate gland but more often infects the testicles. Fungal infections of the prostate are uncommon.

### **Clinical Signs**

Most dogs with BPH do not have any clinical signs. Some dogs may strain to defecate, because the enlarged prostate presses on the colon. Rarely, the prostatic enlargement may partially obstruct the urethra, which leads to straining during urination. Other potential signs include a yellow or bloody penile discharge that is not associated with urination and blood in the urine.

In most dog, BPH is discovered during a physical examination. An enlarged prostate can be felt by rectal palpation, but the gland is not painful or irregular.

Signs of chronic prostatitis include penile discharge (yellow or bloody), constipation or straining to defecate, infertility, and recurrent bladder infections. The bladder infections may cause frequent urination, urgency to urinate, or straining and pain on urination.

Signs of acute prostatitis are similar to those of chronic prostatitis. In addition, affected dogs may be lethargic, and have a poor appetite and fever. Other potential signs of acute prostatitis are reluctance to rise, stiff gait, arched back, and a tense abdomen (indicators of prostatic pain).

Signs of a prostatic abscess can be similar to those of acute or chronic prostatitis. If the abscess ruptures and infection leaks into the belly, peritonitis develops that can become complicated by widespread, overwhelming infection (sepsis) and shock. When rectal examination is performed by your veterinarian, most infected prostates are found to be enlarged and painful.

### **Diagnostic Tests**

Initially, blood and urine tests (urinalysis, culture) and abdominal x-rays are often recommended to investigate the clinical signs. Blood tests may show an elevated white blood cell count. Changes in kidney and liver values may be detected if an overwhelming infection is present.

Urinalysis may show white blood cells and bacteria. Although prostatitis and prostatic abscesses are infections, cultures of urine obtained from the bladder are sometimes negative, especially if the infection is confined within the prostate. Abdominal x-rays may show an enlarged prostate and evidence of peritonitis if a prostatic abscess has ruptured.

An abdominal ultrasound usually shows an enlarged prostate with prostatitis, or pockets of fluid if an abscess is present. Semen analysis may reveal bacteria, but because ejaculation is painful in animals with prostatic infection, it is difficult to collect prostatic fluid samples. Definitive diagnosis requires a positive culture from the prostate and/or biopsy. In many cases of prostatitis, these tests are not performed, and diagnosis is confirmed by a positive response to appropriate therapy.

## **TREATMENT AND FOLLOW-UP**

### **Treatment Options**

Castration is an effective treatment for BPH and is the recommended procedure. After termination of testosterone production (by removal of the testicles), the prostate typically shrinks to a normal size within 3-6 weeks.

Chronic prostatitis may be treated with long-term antibiotics (6-8 weeks) in conjunction with measures to control any underlying predisposing factors. For example, it is important to treat accompanying benign prostatic hypertrophy with castration and prostatic cysts with castration.

For seriously ill dogs with acute prostatitis, intravenous (IV) antibiotics and fluid therapy may be needed initially. After the acute phase of the disease subsides, long-term antibiotics (at least 4 weeks) are usually administered, and castration is performed to prevent recurrence.

Prostatic abscesses that rupture into the abdomen are surgical emergencies. Even an abscess that has not ruptured is usually managed with surgery, because prostatic tissue around the infection can become thickened (as the body attempts to wall off the infection), which makes it difficult for antibiotics to enter the abscess. With surgery, the abscess is opened and drained, and the cavity is often filled with omentum (tissue that covers the abdominal organs). Surgery removes the infection and helps make the infected area more accessible to the immune system. Treatment with antibiotics alone is unlikely to be successful when an abscess is present.

### **Follow-up Care**

Intensive monitoring is required if peritonitis is present. Repeated ultrasounds may be recommended after surgery. For prostatitis, reexamination, urinalysis, and urine culture are often recommended 1 week after finishing antibiotics. Pets neutered will have usual post-surgical follow-up.

### **Prognosis**

BPH is a benign disease, but it predisposes the dog to prostatic infections if left untreated. Prognosis is excellent with castration, because the surgery usually cures the condition.

Ruptured prostatic abscesses that lead to sepsis can be life-threatening, but with current surgical techniques, fatalities are uncommon. Reinfection and recurrence of abscess are common. Reinfection within months of stopping antibiotics is common with chronic prostatitis. Castration prevents recurrences in most cases.