

Prostate Enlargement In the Dog

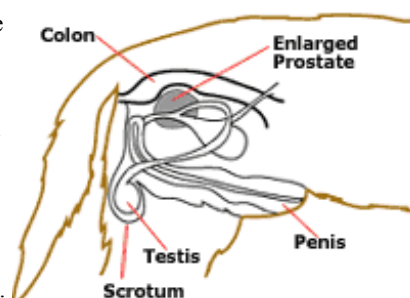
Drs. Foster & Smith Educational Staff

When men reach the age of 80, they have about an 80% chance of developing cancer of the prostate. It is often a malignant form that can be difficult to treat and life threatening. When an unneutered male dog reaches 8 years of age, he has a greater than 80% chance of developing prostate disease, but it is rarely cancerous (benign or malignant). The gland serves the same function in the dog as it does in man and suffers from all the same diseases. Fortunately for the dog, however, the incidence of life-threatening conditions is much lower. Still, most unneutered canines will at one time or another, suffer a lot of discomfort if not severe pain due to the prostate gland.

What is the prostate gland?

The prostate gland is a bi-lobed structure that lies within the pelvis just behind the bladder and directly below the rectum. In a forty-pound dog, it is normally about one to two inches in diameter. It surrounds and is open to the urethra its entire length of the gland. Small tubes or ducts deposit the fluids produced by the prostate directly into the urethra as it courses through the prostate. The prostate starts to develop before the dog reaches puberty and attains its maximum size by the time the dog is two years old. From that point on, its size is determined by the male hormone testosterone and/or various disease conditions.

The prostate gland is classified as an accessory sex gland. This means that in some way it is important for successful breeding, but does not directly produce the sperm. Prostatic fluid is a major portion of the total ejaculated liquid, and is important both in nourishing the sperm cells and providing a greater volume to the ejaculate to make their movement much easier. The sperm cells are actually only a very small percentage of the total ejaculate and must travel all the way from the testicles of the male to the ovaries of the female. This may be a distance of greater than three feet depending on the breed. Although sperm cells are able to move on their own, most of the actual movement comes from the contracting musculature of the urethra, cervix, and uterus pushing the fluid along. A larger fluid volume makes it easier for these structures to propel the sperm cells the necessary distance. Prostatic fluids also have antibacterial properties that protect the sperm plus decrease the chances for infection in the female.



Effect of neutering on the prostate

Dogs that are [neutered](#) before puberty have very little prostatic tissue. Without the male hormone testosterone that is produced within the testicles, the prostate gland does not develop. If we were to surgically explore this area in one of these dogs, only a tiny bulge would be noted in the urethra. The small size causes no harm to the dog, since the only known function of the prostate is support and nourishment of the sperm cells. If a mature dog is neutered, the gland will shrink to less than one-fourth of its previous size. Within a few months, its functional cells will cease all or nearly all production of the supportive fluids.

Signs of prostate disease

In man, a diseased prostate usually causes painful or difficult urination. This makes sense because when swollen, it can close down and decrease the size of the urethra. The pain, therefore, comes from the body trying to force urine out through a restricted opening. Also, when the body uses excessive force to expel the urine, it increases pressures within the painful prostate. This same thing happens in the canine, but to a lesser degree.

Classically, in the dog, an enlarged prostate causes painful defecation. Remember, the prostate gland lies right below the rectum within the bony pelvis. The canal through the pelvis is only so big and it cannot get any bigger on an individual dog. Therefore, when the prostate increases in size, it pushes up against the rectum, greatly decreasing the space available for the rectum. When stools pass from the large intestine through the rectum during defecation, there often is not enough room to accommodate everything. The dog will strain and strain to force the stool out and the stool puts pressure on the swollen and painful prostate. This is the most common cause of constipation and fecal straining in the male dog.

Dogs with painful prostates will often walk abnormally. They are attempting to keep anything from riding against or putting pressure on the swollen, painful gland. Their rear legs will be stiff and straight at the knee and hock and they will usually take very short steps. Some owners refer to this as 'walking on eggs.'

Other signs directly associated with prostatic infection are discharges from the penis including blood and pus, straining to urinate, and in rare cases, peritonitis, which develops when bacteria from the prostate leak out and enter the abdominal cavity.

Types of prostatic disease in the dog

Benign Prostatic Hyperplasia: In the dog, by far the most common prostatic disease is Benign Prostatic Hyperplasia (BPH). This is not caused by bacterial or viral infection and it is not a form of cancer. It is, rather, a normal aging process of the gland. As the dog continues to mature, the glandular tissue within the prostate undergoes hypertrophy. That is to say that there is an increase in both the size and the number of the cells within the glandular tissue. Additionally, cysts develop inside the gland and these gradually increase in size. Both of these factors enlarge the overall size of the prostate putting internal

pressure on the remaining tissue. Almost all dogs over 4-5 years of age will show some degree of prostatic enlargement caused by BPH. In many, the gland may not yet be painful, but as the condition continues with age, it will at the very least be a source of constant discomfort, but as stated, it can and often does cause problems with both urination and defecation.

Bacterial Infections: Probably, the second most common form of prostatic disease in the dog is bacterial infection. Bacteria can get into the prostate via the blood system or from the urinary tract. In the latter, bacteria can come from the bladder or come up the urethra through the penis. Bladder infections are common in the dog and easily treated. Many antibiotics that can be taken orally are excreted from the body by the kidneys and are therefore deposited unchanged into the bladder. Here they can quickly eliminate the bacteria present. Once the organisms have made their way into and colonized the prostate, however, the infections are much more difficult to control or eliminate. Very little if any of the antibiotics that are deposited into the bladder via the kidneys make their way into the prostate gland even though the urethra passes through it. Additionally, there is a physiological barrier between the blood and the prostate gland. That is to say that just because a substance like an antibiotic is being carried by the blood, it will not necessarily get into the prostate gland. Only certain medications have chemical properties that pass over this barrier. This limits our choice of antibiotics. With bacterial infections, that is unfortunate, as individual bacterial populations can only be killed by certain antibiotics. Additionally, over time, these patterns of sensitivity to the antibiotics may change. Then the bacteria, whether it is within an ear, wound, or prostate, can no longer be treated with the same product and a new one must be chosen.

Bacterial infections of this gland are either acute, chronic, or are presented as abscesses. The early stages of any infection are termed acute and are extremely painful. They will affect not only the prostate, but bacteria may spread to the rest of the body causing fevers and additional signs depending on what other structures of the body the bacteria colonizes. The key here is to determine that the source of the infection is within the prostate and therefore direct a major portion of the treatment at that area.

Chronic infections follow this acute phase and may go on for years. They are difficult to treat, as bacteria can become trapped within scarred tissue of the gland. It is almost impossible to get medications into these areas. The chronic stage is less painful, but still is a potential source of bacterial spread to other areas. Most dogs that have repeated bladder infections are just being continuously reinfected with bacteria from the diseased prostate. Abscesses are a chronic form of bacterial infection in which pockets of pus have developed within the gland.

Cancer: Unlike humans, prostatic cancers are uncommon in the dog. Some would describe them as rare. When they do occur, they are usually malignant and potentially life threatening. The cancer may metastasize, spreading throughout the body by the blood system and usually 'seeding' the liver, lungs, or kidneys. They can also spread locally into regional lymph nodes and the bones of the back and pelvis. At this point in time, we have no cure for prostatic cancer and none is probable in the near future. Only short-term remission and/or relief is possible through radiation and medical therapy.

Diagnosis

When the prostate is affected by benign growth, cysts, cancer, or infection, it gets bigger and it gets painful to the touch. In our practice, we examine the prostate of all mature dogs during a routine physical. This is done by inserting a gloved finger into the rectum and palpating the prostate. By performing this rectal examination, the veterinarian is able to feel the prostate and note its size, consistency, symmetry, shape, and if any pain is present. Often, urine samples taken by a catheter after the exam will contain more cells from the prostate. These samples are examined with a microscope for evidence of infection, inflammation, or cancer.

In dogs who have not been neutered, semen evaluation can be very helpful in determining the diagnosis. Radiographs (x-rays) or ultrasound examinations are often used to better assess the prostate and surrounding tissues. Biopsies of the prostate may be taken to confirm a diagnosis.

Treatment and prevention

Whenever we encounter any of the above problems of the prostate in the dog (there are others, but these make up over 98% of the total cases), we are dealing with long-term and often expensive therapy. For example, the successful treatment of a chronic bacterial prostatitis will usually require 6 to 8 weeks of continuous oral medication, injections, urinary catheterizations, enemas, and possible surgery. In almost all cases, where it is an option, the patient is neutered, because after the testosterone is removed, the gland will shrink and the condition is much easier to treat. This would of course have no effect on a case where cancer was involved.

Over 90% of all prostatic diseases would be prevented during the life of all dogs if the animal was castrated in the first year of life. Neutering will have no effect on the incidence of cancer, but remember this is very rare.