

Unusual Spay Neuter
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Introduction

Not all spays and neuters are “routine.” Conditions such as mammary hyperplasia and lactation, cryptorchidism, hermaphroditism, and uterus unicornis may present surgical challenges, but approaches to each of these non-typical cases are actually quite simple.

Mammary Hyperplasia/Lactation/Feral cats

Feral cats (community cats), cats with mammary hyperplasia or lactating queens still nursing kittens are ideal candidates for flank spays. Performing a flank spay will avoid any damage to mammary tissue, preventing abscesses due to leakage of milk into the tissues. A flank spay should be performed with the patient in left lateral recumbency. An incision is made paralleling the last rib 3/4 the way back from the last rib and cranial to the wing of ilium and just ventral to the transverse spinous processes. Dissect through the subcutaneous tissue, bluntly separate fibers of the external abdominal oblique muscle and the internal abdominal oblique muscle entering the abdomen. If the incision is positioned properly the right uterine horn or right ovary will be clearly visible. If not visible they can be retrieved using a spay hook. The spay is then performed the same as with a ventral midline approach. A three-layer closure is performed suturing internal abdominal oblique, external abdominal oblique and subcuticular tissue.

Cryptorchidism

Cryptorchidism is defined as the failure of one or both testicles to descend into the scrotum. The cryptorchid testicle can be located anywhere along the path from the area of fetal development of the gonads (just caudal to the caudal pole of the kidney) to the subcutaneous tissue between the external inguinal ring and the scrotum. Thus, a cryptorchid testicle can be located in the abdominal cavity, in the inguinal canal, or in the subcutaneous tissue between the external inguinal ring and the scrotum.

Testicles should be easily palpated in the scrotum of dogs and cats greater than 2 - 4 months of age. If one or both testicles are not located in the scrotum careful palpation will reveal which testicle(s) are involved and whether the testicle(s) are located in the subcutaneous tissue. Failure to palpate a testicle in the scrotum or the subcutaneous tissue leads to a presumptive diagnosis of abdominal cryptorchidism. Palpation of the testicle in the subcutaneous tissue leads to a diagnosis of subcutaneous cryptorchidism.

Subcutaneous cryptorchidism

If the cryptorchid testicle is palpated in the subcutaneous tissue, incising directly over the testicle will allow exposure and removal of the testicle.

Abdominal cryptorchidism

Always empty the bladder prior to starting surgery in the abdominal cryptorchid patient. Locating an abdominal testicle is generally very easy. The critical factor to remember is that both ductus deferens enter the urethra at the prostate. If you trace the ductus deferens from the prostatic urethra cranially it is located dorsal to the bladder until it passes the junction of the ureter and the bladder. Cranial to the point where the respective ureter enters the bladder the ductus deferens turns laterally on its course to the inguinal canal and the testicle. This anatomical feature makes it extremely easy to find an abdominal testicle. You just have to locate the ductus deferens.

In the dog the skin incision is made in the caudal abdominal skin just lateral to the prepuce and cranial to the pubic brim on the side of the cryptorchid testicle. Entry into the abdomen is either on the midline through the linea alba by undermining under the prepuce to the midline or by a paramedian incision incising the external rectus fascia and separating rectus abdominus muscle fibers. Make a very small incision and pass a spay hook from medial to lateral, lateral to the bladder wall. In most cases that will catch the ductus deferens allowing exteriorization of the testicle. If that fails, extend the incision slightly in a cranial direction and exteriorize the urinary bladder. Caudal reflection of the urinary bladder, exposes the dorsal surface of the bladder, allowing visualization of both ductus deferens. Gentle retraction of the ductus of the cryptorchid testicle will allow delivery of the testicle into the surgical site, ligation of the testicular vessels and excision of the testicle.

In the cat the skin incision is made in the caudal abdominal skin on the midline. Entry into the abdomen is on the midline through the linea alba and allows exposure of the urinary bladder. Again, using

a spay hook and sweeping laterally from the bladder wall will often catch the ductus deferens. If this fails, caudal reflection of the urinary bladder, exposing the dorsal surface of the bladder, will allow visualization of both ductus deferens. Gentle retraction of the ductus of the cryptorchid testicle will allow delivery of the testicle into the surgical site, ligation of the testicular vessels and excision of the testicle.

If not in the abdomen

On occasion cryptorchid testicles are trapped between the muscle layers in the inguinal canal. When this occurs gentle tension on the ductus deferens will allow visualization of the ductus deferens entering the inguinal canal. Gently teasing the musculature of the internal inguinal ring apart with a blunt instrument is often enough to allow delivery of the testicle back into the abdomen for removal.

Cryptorchid testicles are often smaller than normal and it is possible that the cryptorchid testicle will be in the subcutaneous tissue but not be palpable. Entry into the abdomen, assuming abdominal cryptorchidism, would, therefore, fail to reveal the cryptorchid testicle. Gentle tension on the ductus deferens would confirm that the ductus deferens passes through the inguinal canal. The caudal abdominal skin incision is of value here, as from that incision you can undermine the skin between the incision and the external inguinal ring. Gentle traction on the abdominal ductus will allow you to locate the ductus deferens as it exits the inguinal canal and will lead you to the cryptorchid testicle.

Once the cryptorchid testicle is located, either in the abdomen or the subcutaneous tissue, it can be excised using any standard technique. For very small testicles with small vessels and a small ductus deferens use the cord tie or figure eight knot in the spermatic cord. For larger testicles, with larger spermatic cords clamp the spermatic cord with hemostats, transect distal to the most distal hemostat and place a ligature using a Miller's knot in the area of the spermatic cord crushed by the most proximal hemostat. In dogs weighing over 18 kg, I will clamp the spermatic cord with three hemostats, transect distal to the most distal hemostat, place a ligature using a Miller's knot in the area of the spermatic cord crushed by the most proximal hemostat, and a transfixation ligature in the area of the spermatic cord crushed by the second hemostat.

Uterus unicornis

Uterus unicornis is congenital absence of one horn of the uterus, but both ovaries are always present. So, when performing a spay and discovering that one uterine horn is absent you must search for the 2nd ovary. It will be in the normal location and, if a broad ligament is present is rather easy to find. If no broad ligament is present on the involved side use the biological retractors to help localize the ovary.

Hermaphroditism

Hermaphroditism is the presence of both ovarian and testicular tissue in the same gonad or the same individual. Most frequently hermaphrodites are presented as a female for ovariohysterectomy. The patient often has female genitalia with an enlarged clitoris. The "ovariohysterectomy" is performed routinely.

Conclusions

While conditions such as cryptorchidism, hermaphroditism, uterus unicornis, mammary hyperplasia and lactation may present as challenges to the veterinary surgeon, understanding the conditions, the anatomy involved and the surgical techniques that can be used will make spay neuter in these non-typical conditions relatively easy.

Note

Videos shown during this presentation can be viewed or downloaded from:

<http://mymedia.msstate.edu/outputset.php?id=25524>