The term perineal hernia describes a weakness or loss of the muscles of the pelvic diaphragm. Pelvic and abdominal contents can protrude between the rectum and the pelvic diaphragm, causing subcutaneous swelling lateral and ventral to the anus. Dogs can be affected unilaterally or bilaterally. Loss of lateral rectal support leads to rectal deviation and tenesmus. Affected dogs have a bulge in the perineum, either unilaterally or bilaterally. Other clinical signs include constipation and varying amounts of pyoderma in the perineal skin; dogs with urinary bladder retroflexion may also have signs of acute urinary obstruction, including stranguria, pain, lethargy, and collapse. Urinary bladder retroflexion represents a true medical emergency; affected dogs require fluid resuscitation, treatment for hyperkalemia, perineal cystocentesis, urinary catheterization, and repositioning of the bladder into the abdomen.

Surgical repair using the internal obturator muscle flap transposition technique is recommended. Bilateral hernias can be repaired simultaneously. This surgical technique is usually successful in resolving the preoperative clinical signs. Castration is recommended by most surgeons to minimize nonneoplastic prostatic diseases and hopefully eliminate these causes of tenesmus postoperatively. Hernias that include large defects ventral to the anus can be problematic to repair.

**DIAGNOSTIC CRITERIA**

**Historical Information**

**Gender Predisposition**

Perineal hernia occurs most commonly in intact male dogs. It rarely occurs in female dogs.

**Age Predisposition**

Perineal hernias most commonly occur in dogs between 7 and 14 years of age, depending on breed. It rarely occurs in dogs younger than 5 years of age.

**Breed Predisposition**

Purebred dogs, including Boston terriers, Pekingese, boxers, collies, corgis, kelpies, dachshunds, and Old English sheepdogs, are overrepresented in published reports.

**Owner Observations**

- Owners often first notice that their dog is constipated and straining to defecate.
- A unilateral or bilateral swelling ventral and lateral to the anus may become apparent, and the skin over the swollen area may become discolored.
- Approximately 20% of dogs with perineal hernia may experience bladder retroflexion. These dogs strain to urinate repeatedly, which may be misinterpreted as continued constipation by some owners.
- Dogs with complete urinary tract obstruction and subsequent hyperkalemia may become severely depressed or collapse.

**Physical Examination Findings**

- Unilateral or bilateral perineal bulge or swelling. Hernia contents include retroperitoneal fluid, fat, a
deviation of the rectum, often the prostate gland, and sometimes the small intestine.

- Laxity or absence of the pelvic diaphragm when palpating the perineum lateral to the anus.
- Unilateral deviation or unilateral or bilateral sacculation of the rectum on rectal examination. Note: Rectal palpation should be performed with care to avoid perforating the rectum.
- Firm, painful perineal swelling when the bladder is retroflexed into the hernia. The degree of perineal swelling may vary depending on the presence of bladder entrapment in the hernia and the dog’s ability to void urine.
- Occasional discoloration of perineal skin overlying the hernia.

Laboratory Findings

- Laboratory findings in dogs with perineal herniation vary depending on the presence of bladder retroflexion and other concurrent conditions.
- When the perineal hernia encompasses bladder retroflexion and urethral obstruction, hyperkalemia and azotemia (elevated creatinine and blood urea nitrogen levels) are possible.
- Many dogs with perineal hernia are older, so a complete blood count and serum biochemical analysis should be performed to evaluate the patient’s metabolic status and renal and liver function and to rule out other concurrent diseases.

Other Diagnostic Findings

- Radiographic studies are rarely necessary to diagnose perineal hernia.
- A positive-contrast retrograde urethrocystogram can be performed to delineate the location of the bladder. $$$–$$$$
- Abdominal ultrasonography is used to evaluate the prostate for hyperpla-sia, cysts, abscesses, or neoplasms. $$–$$$–$$$$
- In older dogs, physical examination findings may suggest further diagnostic tests (e.g., thoracic radiography in dogs with concurrent neoplastic disease, ultrasonography in dogs with prostatomegaly).

Summary of Diagnostic Criteria

- A history of tenesmus, with or without concurrent bulging of the perineum.
- Unilateral deviation or unilateral or bilateral sacculation of the rectum on rectal examination.
- Laxity or absence of the pelvic diaphragm when palpating lateral to the anus.
- Firm, painful perineal swelling when the bladder is retroflexed into the hernia.
- Discoloration of perineal skin overlying the hernia.

KEY TO COSTS

$ indicates relative costs of any diagnostic and treatment regimens listed.
- $ costs under $250
- $$ costs between $250 and $500
- $$$ costs between $500 and $1,000
- $$$$ costs over $1,000
of 0.9% NaCl (to make a 2.5% dextrose solution); this fluid is then administered at 5 to 10 ml/hr in addition to the other parenteral fluids.

— Sodium bicarbonate (1 mEq/kg) can be administered to patients with severe acidosis.

• An attempt should be made to pass a urinary catheter. If unsuccessful, perineal cystocentesis should be performed to decompress the bladder:
  — A 1.5-inch cystocentesis needle is placed on the end of an extension set, which is then connected to a 60-ml syringe with a three-way stopcock.
  — The cystocentesis needle is passed into the bladder, and the urine is removed using the syringe and three-way stopcock.
  — Once the bladder is decompressed, it can be gently moved cranially by pushing on the perineal swelling. This should then allow the passage of a urinary catheter to keep the bladder decompressed.

Medical Treatment $–$$
  • Indicated only for patients without bladder retroflexion.
  • The diet should be changed to a food high in fiber, or methylcellulose or psyllium products can be added to the current diet to soften the stool.
  • Dioctyl sodium sulfosuccinate (one to two 50-mg tablets daily, depending on weight) can be given to further soften feces.

Surgical Treatment $$$
  The animal is placed under general anesthesia and prepared for aseptic surgery. An epidural anesthetic (narcotic or a narcotic mixed with a local anesthetic) is administered. The colon and rectum are emptied of feces digitally before surgery, and a purse-string suture is placed in the anus. Preoperative enemas are not recommended. The use of perioperative antibiotics is at the surgeon’s discretion. While no decrease in wound infection rates has been seen with antibiotics, some surgeons administer antibiotics perioperatively because of the length of the procedure and risk of wound contamination.

The animal is positioned on a well-padded rectal stand. The hernia is explored, and the contents are reduced using moist laparotomy sponges. The internal obturator muscle is elevated subperiosteally from the ischium and incised laterally starting at the caudal aspect and incising cranially along the medial aspect of the caudal sacrotuberous ligament until the tendon of the internal obturator muscle is visible. This tendon can be transected and incorporated into the repair.

The defect in the pelvic diaphragm is closed using preplaced simple interrupted Prolene sutures (0 in large dogs; 3-0 to 2-0 in small dogs) in an inverted Y

Diag nost ic Differentials
  • Other causes of constipation and tenesmus, including mechanical obstructions to fecal passage, rectal neoplasia, perianal fistulae, foreign bodies, colonic or rectal stricture, and pelvic fractures.
  • Masses causing perineal swelling, including large anal sac tumors, other neoplasms of the pelvis or pelvic canal, and intrapelvic paraprostatic cysts.
  • In dogs with perineal hernia and an associated retroflexed bladder: Other causes of urinary tract obstruction, including urethral calculi, prostatic disease (hyperplasia, neoplasia, paraprostatic cysts), and urinary tract neoplasia.
  • Infiltrative infectious disease (e.g., pythiosis).

TREATMENT RECOMMENDATIONS

Initial Treatment
Correction of Bladder Retroflexion and Urinary Tract Obstruction $–$$–$$–$$
  • Venous access should be obtained.
  • A minimum database, including packed cell volume and levels of total protein, sodium, potassium, and creatinine, should be obtained.
  • Electrocardiography (ECG) should be performed.
  • In patients with severe hyperkalemia (potassium ≥7 mmol/L), associated clinical signs, and ECG changes:
    — IV fluids should be administered. Most clinicians use 0.9% NaCl, although Normosol-R and Plasmalyte are acceptable. Volume of fluid given depends on the hemodynamic state of each patient. Doses should be calculated to incorporate the perceived deficit, ongoing losses, and the patient’s maintenance needs.
    — An initial dose of 0.5 ml/kg IV of a 10% calcium gluconate solution should be slowly administered over 10 to 20 minutes while the ECG is carefully monitored.
    — If necessary, insulin and dextrose can be administered to temporarily lower the extracellular potassium concentration. Regular insulin (0.5–1 IU/kg) combined with dextrose (1–2 g/unit of insulin administered) can be added to the parenteral fluids. Alternatively, regular insulin (2.2 IU/kg) and dextrose (12.5 ml of a 50% dextrose solution) can be added to a separate 250-ml bag

STANDARDS of CARE: EMERGENCY AND CRITICAL CARE MEDICINE

CHECKPOINTS
Preoperative enemas may increase the risk of surgical contamination and postoperative wound infection and thus should be avoided.
pattern. Sutures are inserted between the external anal sphincter and the coccygeus muscle dorsally, the external anal sphincter and the caudal incised edge of the elevated internal obturator muscle, and the lateral incised edge of the internal obturator muscle and the coccygeus muscle.

In cases where the coccygeus and levator ani muscles are too atrophied, sutures should be placed through—not around—the sacrotuberous ligament. Passing suture around the sacrotuberous ligament should be avoided to prevent entrapment of the sciatic nerve.

Sutures are preplaced and then tied once all the sutures are in place (Figure 1). The subcutaneous perineal fascia is sutured to the external anal sphincter muscle, and the rectum. Note the triangular defect remaining after the muscles have been approximated. Additional sutures are required for complete closure. From: Orsher RJ, Johnston DE: The surgical treatment of perineal hernia in dogs by transposition of the obturator muscle. *Compend Contin Educ Pract Vet* 7(3):233–242, 1985.

Alternative/Optional Treatments/Therapy

There are several surgical options to consider when a standard internal obturator flap repair fails:

- The internal obturator flap can often be reelevated along with the periosteum covering the dorsal ischium, ensuring that the tendon of the internal obturator muscle is transected and included in the repair.
- Prolene mesh can be used to repair the defect in the pelvic diaphragm.
- The semitendinosus muscle can be elevated and severed distally, taking care to preserve its proximal blood supply, and sutured into the hernia defect.
- Cystopexy or pexy of the vas deferens can be performed to prevent repeated retroflexion of the urinary bladder into a recurrent hernia:
  - Cystopexy: A partial-thickness incision is made in the bladder wall and a corresponding incision is made in the transverse abdominis muscle, well lateral to the abdominal incision. Several partial-thickness sutures of monofilament absorbable material are placed to appose the two incisions.
  - Pexy of the vas deferens: A caudal ventral midline celiotomy is performed. The vas deferens is isolated from the testicular artery and vein on either side and freed from its peritoneal attachments. Incisions are made on the ventrolateral abdominal wall to allow tunneling of the vas deferens beneath the transverse abdominis muscle while cranial traction is applied to the bladder and prostate. The vas deferens is sutured to the abdominal wall on either side with single interrupted sutures of 3-0 Prolene, holding the bladder in position within the abdomen.
- Colopexy may be performed to prevent rectal prolapse. The colon is grasped and gently pulled cranially while a nonsterile assistant reduces the rectal prolapse. The descending colon is sutured to the lateral body wall with several partial-thickness single interrupted sutures using nonabsorbable monofilament material.

Supportive Treatment

In patients with bladder retroflexion and urinary tract obstruction:

- IV fluid therapy is continued, and serum potassium, creatinine, and urea nitrogen levels and urine output are carefully monitored.
- The urinary catheter is left in place for several days to decompress the bladder and minimize the chance of urine retention, bladder atony, and infection.
Home Management
- Owners should ensure that their pet is eating and drinking normally.
- Dietary fiber supplementation should continue.
- Owners should ensure that their pet is defecating without excessive straining and urinating without difficulty.
- Incisions should be monitored for heat, pain, and swelling.

Milestones/Recovery Time Frames
- Suture removal in 10 days.
- Animal continues to defecate normally.
- Absence of perineal swelling. Swelling may indicate recurrence of the hernia.

Treatment Contraindications
- There are few contraindications to perineal hernia repair.
- Occasionally, thorough preoperative evaluation may reveal a concurrent condition, such as aggressive neoplasia, that makes perineal hernia repair unwarranted.
- Perineal hernia repair should not be performed after a recent enema, as the loose, watery feces cannot be contained by the anal purse-string suture and will contaminate the surgical field.

PROGNOSIS
In general, the prognosis for dogs in which a perineal hernia was repaired with the internal obturator flap technique is good. In dogs with unilateral repairs, a hernia develops on the opposite side in approximately 25% of cases. Empirically, many surgeons believe that hernias with large ventral components are more difficult to repair and more likely to recur.

Unfavorable Criteria
- Bladder or prostate necrosis.
- Prolonged urethral obstruction.
- Large ventral herniation.
- Recurrent hernia.

RECOMMENDED READING