Veterinarians in small animal practice frequently encounter dogs with perineal hernia. In some cases the presentation is straightforward; an older, intact, male dog with straining and faecal impaction. In severe instances, bladder entrapment or oedema and inflammation of the hernia result in severe illness and the need for emergency treatment. In other cases, the presentation may not be as obvious. In some instances, herniation of abdominal contents is not present, but weakness of the perineal diaphragm causes rectal deviation and sacculation, leading to constipation and straining.

Repair of perineal hernias remains challenging. Hernia repair may be straightforward, or may be complicated by underlying or predisposing factors. Understanding the reasons that the hernia has developed, the necessity of anatomical reconstruction of the perineal diaphragm, and other steps that may be taken to reduce the risk of recurrence can be as important as the surgical procedure itself.

The term ‘hernia’ refers to organs that have been displaced from their normal location. Displacement usually occurs through an abnormal opening (hernial ring); in this case a defect between the muscles of the perineal diaphragm. When abdominal contents herniate, they are covered with a layer of peritoneum; the hernial sac. The hernial sac in chronic cases can be quite thick and vascularized. As mentioned above, the condition in some patients may not involve herniated structures, but is still widely referred to as ‘perineal hernia’.

**Consequences of Perineal Hernia**

The clinical signs associated with perineal hernia result from the presence of organs in an unusual site, obstruction to the pelvic canal and inability of the animal to adequately empty its rectum. Incarceration or strangulation of the bladder, in particular, can occur rapidly in otherwise chronic conditions. Oedema fluid may accumulate within the hernial sac and omental granulomas or haematomas can cause enlargement of the perineal mass.

**Differential Diagnoses**

**Straining and constipation:** Pelvic masses (eg enlarged medial iliac lymph nodes), colonic dysfunction, malunion of pelvic fractures, colonic or rectal neoplasia, prostatomegaly.
**Perineal swelling:** Paraprostatic cyst, anal sac neoplasia, perineal/pelvic lipoma.

**Rectal impaction:** Rectal neoplasia, rectal/anal stricture.

**Diagnosis**

A presumptive diagnosis of perineal hernia may often be made on the basis of the characteristic clinical signs of straining, constipation and perineal swelling. Rectal examination should always be performed and should include palpation of intrapelvic structures such as the urethra, prostate, sacrum, pubis, ilia and medial iliac lymph nodes. Palpation of the coccygeus muscle and sacrotuberos ligament may assist with surgical planning. Confirmation of perineal hernia (or weakness of the perineal diaphragm) can be made when the external anal sphincter is clearly separated from the peri-rectal musculature (such as the levator ani and coccygeus). Ability to hook the rectal mucosa into a subcutaneous position without an intervening muscle belly is indicative of breakdown of the perineal diaphragm. In cats, actual herniation of abdominal structures is rare and this may be the only sign of perineal hernia.

**Exacerbating Factors**

Factors that predispose animals to perineal herniation, or exacerbate hernias once they occur include changes in pressure applied to the organs and the hernial ring (eg prostatomegaly or intra-abdominal masses) and conditions causing weakness or dysfunction of supporting structures (collagen disorders, neuromuscular disorders). Chronic straining associated with megacolon or pelvic fracture malunion is encountered in at least 50% of cats with perineal hernia.

**Anatomical Considerations**

Perineal hernia usually occurs between the coccygeus muscle and the external anal sphincter. The levator ani muscle is usually very small and may be absent. It is rarely large enough to assist with hernia repair. The pudendal nerve travels dorsal to the internal obturator muscle to innervate the anal sphincter and should be protected during hernia repair. The internal obturator muscle is situated on the dorsal aspect of the ischium, between the ischial arch and the obturator foramen, and may be easily elevated from the ischatic table into the hemial defect to assist closure with minimal tension. The sacrotuberos ligament is situated immediately cranial to the coccygeus muscle and is sometimes used as a means of anchoring sutures. Extreme care should be taken, however, as the sciatic nerve lies immediately cranial to it and may be incorporated into a suture passed around the sacrotuberos ligament. The peritoneal reflection will be located further caudad than normal in animals with caudal movement of the prostate and bladder and may be susceptible to damage (along with the neural supply to the bladder) if blunt dissection is performed. Bladder and prostate should therefore
be handled carefully as they are reduced cranially back into the caudal abdomen. The urethra travels between the left and right internal obturator muscles as it traverses the pelvic floor. A urinary catheter should be passed to assist recognition of the urethra in animals undergoing repair of perineal hernias with a prominent ventral component. The anal sacs lie in close proximity to the anal sphincter and should be evacuated and lavaged prior to surgery, and avoided during placement of sutures.

**Repair of Perineal Hernias**

As far as possible, a biological approach is used to repair all types of hernia. The main components of this are:

- Returning organs to their normal position.
- Resection or repair of damaged organs.
- Closure of the hernial ring using local and autogenous tissues.
- Gentle tissue handling with due regard to tissue strength, blood supply and function.
- Use of local flaps or prostheses where appropriate to reduce tension on the repair.
- Fixation of relocated organs in their normal position.
- Adjunctive surgical and/or medical management.

In contrast to early recommendations, successful hernia repair is not contingent on the absolute strength of suture material or creation of an inflammatory reaction to ensure development of sufficient fibrous tissue. Suture materials should be used that reflect the strength of local tissues. There is little point using a stiff, thick suture material in flimsy muscle. It is more important to mobilize local tissues in a way that minimises tension and preserves vascularity and healing capacity. An absorbable suture such as polydioxanone that maintains adequate strength for the period of wound repair and well into the maturation phase should be used.

**Simple Perineal Hernias**

In small dogs with unilateral perineal hernia and no history of bladder retroflexion and entrapment, direct repair using an internal obturator flap is recommended. The skin incision is made 1 -2 cm lateral to the anus. It is important that fibres of the anal sphincter muscles should be distinguished through the surgical incision or there is a risk of placing sutures in elastic perianal tissue that relaxes over time, resulting in breakdown on the repair. The hernia is reduced and held in place with moistened laparotomy sponges while sutures of 2-0 or 0 polydioxanone are placed between the coccygeus, internal obturator and external anal sphincter muscles as described in the textbooks.

**Bilateral Perineal Hernias**
In dogs with bilateral perineal hernia, and any dog that has experienced bladder retroflexion, a two-stage repair should be considered. In the first stage, a caudal laparotomy is performed, the bladder and prostate drawn forward into the abdomen and a cystopexy and colopexy performed. This also provides an opportunity to inspect or biopsy the prostate. Castration is performed at the same time. This technique is fast and useful in patients with bladder retroflexion presenting as emergency cases.

Definitive repair of the hernia is then delayed for 2 to 7 days. This is helpful in that it allows stabilization of the patient. Oedema and inflammation of the hernia resolves and reduction of remaining herniated structures is easier. Staging of bilateral repairs should not be necessary if sound surgical principles are employed. Local muscle flaps (particularly the internal obturator) very useful in reducing amount of tension in repair. Superficial gluteal muscle may be rotated caudally in severe cases. The semitendinosus flap can be used in both dogs and cats where the perineal musculature is deficient.

**Adjunctive Considerations:** Evaluation of prostatic disease. Castration to reduce effect of testosterone on perineal musculature. Dietary control of fecal consistency.

**Complications:** Fecal and urinary incontinence may occur secondary to damage of the pelvic and pudendal nerves. Anal sphincter incompetence may result from stretching or local inflammation following bilateral repair but should improve within a few days of surgery. In dogs with large rectal sacculations, hernia repair may predispose to rectal prolapse until the dilated rectum retracts to its normal diameter. Rectal prolapse is also seen in dogs with rectal oedema. Temporary purse-string sutures may be required. Rectal prolapse seems less likely to occur if a colopexy is performed.

Breakdown of the surgical repair and recurrence of the hernia may be due to incomplete repair, poor local tissue strength or other predisposing factors. In some animals the hernia is situated quite dorsal and sutures may need to be placed between the dorso-lateral anal sphincter and the coccygeus muscle of even the rectococcygeus. Infection is a recognized complication but occurs rarely.

**References**

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