

DIAGNOSIS AND MANAGEMENT OF PERINEAL HERNIA IN DOGS

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Perineal hernia is a well recognized clinical entity in the dog. The condition results from the protrusion of the pelvic or abdominal organs through a defect in the pelvic diaphragm muscles. The pelvic diaphragm is composed of the levator ani, coccygeus, external anal sphincter and the internal obturator muscles and the sacrotuberous ligament. The external anal sphincter surrounds the anal canal, lateral to it lies the levator ani and then the coccygeus muscle. The lateral border of the perineum is formed by the sacrotuberous ligament. Internal obturator muscle lies ventrally and forms the cranial and medial boundary of the obturator foramen.

The condition occurs frequently in middle aged to aged sexually intact male dogs. Few cases are reported in female dogs. The variation in incidence has been related to the greater strength, size and area of rectal attachment of the levator ani muscles in females. The herniation may be unilateral or bilateral and an increased incidence of herniation on the right side has been reported (Anderson *et al.*, 1990). A multitude of factors had been attributed to the aetiopathogenesis of perineal hernia such as congenital predisposition, structural weakness of pelvic diaphragm, hormonal imbalances, prostatic disease and chronic constipation.

Clinical Signs

The most important clinical sign is the swelling of the affected perineal region. In bilateral cases, swelling appears on both sides with the perineum being loosened, which results in considerable posterior displacement of the anus. Other clinical signs include tenesmus, dyschezia, faecal incontinence, stranguria / dysuria if the bladder is

involved and altered tail carriage. Biochemical evaluation may reveal elevated BUN and creatinine levels due to interference in urination.

Hernial Contents

Rectum is most frequently involved. It might be a rectal sacculation when there is loss of unilateral rectal wall support allowing it to expand to one side, or rectal deviation when the rectum herniates. The other organs that can herniate include urinary bladder, prostate, retroperitoneal fat or one or more of the above.

Diagnosis

Diagnosis of the condition is usually based on history, clinical signs, rectal examination, radiography and ultrasonography. In case of the bladder herniation the perineal swelling would be soft and fluctuating or tensed. Once the animal is catheterised and urine removed the swelling would reduce and it is possible to reposition the bladder back through the perineal defect. In case of rectal involvement the swelling would be hard and mostly irreducible due to the faecal impaction. Rectal examination performed pre-operatively permits the assessment of loss of pelvic diaphragmatic support on sides, rectal deviation or dilatation, prostatic size and symmetry and presence of other herniated structures. The intactness of the pelvic diaphragm of the contralateral side can also be assessed. Contrast radiographic procedures can be performed to confirm the organs that are herniated. Prior to radiography the rectum has to be evacuated manually by removing the impacted faecal material.

In cases where the urinary bladder had to be determined, retrograde positive contrast cystography or pneumocystography can be done.

In case of bladder retroflexion the displacement of the bladder into the perineal region can be evidenced. Oral barium can be given to enhance radiographic assessment of rectal abnormalities. Barium meal is given and radiographs are taken 12 hours later or as required when the barium had reached the distal colon and rectum. Rectal abnormalities can be recorded as either rectal deviation or dilatation. Ultrasonography helps in evaluating the position of the bladder and prostate.

Management

Surgical correction is the treatment of choice because medical management of associated constipation and tenesmus usually is unsuccessful. The procedure is performed under general anesthesia. Manual removal of the impacted faecal material should be performed prior to surgery. The perineal region should be clipped and shaved and purse string sutures should be placed in the anus. The patient is positioned in sternal recumbency with the surgical table slightly inclined to elevate the perineal region and the rear legs of the animal hanging on the edge of the table. The tail is fixed in position along the vertebral column by tying it with a bandage cloth.

Standard / Conventional herniorrhaphy

A curvilinear skin incision is made over the hernia from the base of the tail to the lateral borders of the ischium to expose the hernial sac. The sac is entered bluntly and its serous contents drained to expose the contents. The structures in the hernia has to be returned to their original position through the hernial ring. The major anatomical structures, which included the external anal sphincter, the levator ani, coccygeus and the internal obturator muscles and also the sacrotuberous ligament, are to be identified. Simple interrupted sutures are preplaced between the external anal sphincter and the levator ani or coccygeus muscles or both and the sutures are placed less than 1 cm apart. As the placement progressed ventrally and laterally the sacrotuberous ligament has to be included by placing sutures through the ligament and the external anal sphincter. Direct ventral sutures are placed between the external anal sphincter and the

internal obturator muscle. The sutures are tied beginning dorsally and progressing ventrally. The herniorrhaphy site is evaluated for its integrity and if any defect persisted additional sutures are to be placed. The perineal fascia is then sutured followed by the apposition of the skin.

Other techniques

In cases where the perineal muscle damage is more extensive and the defect is more pronounced, (especially on the ventral aspect) considerable tension may be placed on the sutures which can lead to the failure of the repair technique or sphincter incontinence due to the extensive stretching of the sphincter. This can be minimized by augmentation techniques such as the internal obturator muscle transposition or placement of prosthetic or biological implants in the perineal defect. In internal obturator muscle transposition the muscle is elevated using a periosteal elevator as far cranially as the caudal limit of the obturator foramen. Once the muscle is elevated suturing the coccygeus muscle, external anal sphincter and the internal obturator muscle is carried out as per the standard technique.

Prosthetic implants like polypropylene mesh or biological implants such as autogenous fascia lata graft harvested from the lateral thigh region of the animal can be placed in the perineal defect and sutured to the perineal muscles would help to reduce the tension on the sutures and to reduce the sphincter damage due to the extensive stretching of the sphincter.

Post-operative management

Sutures are generally removed 10 to 14 days post-operatively. A low residue diet should be fed for several days to help eliminate straining and prevent wound disruption. Fluid therapy should be continued postoperatively in uremic patients. Patients with bladder retroflexion have the poorest prognosis and those with pre-existing neurological abnormalities (anal sphincter tone incompetence or compromised urinary bladder innervation) are not corrected after herniorrhaphy (Hedlund 2002). Tenesmus and pain are well recognized complications after perineal herniorrhaphy and

effective analgesia might be provided by parenteral administration of opioid or nonsteroidal anti-inflammatory medications.

Role of castration

As the condition is common in old uncastrated male dogs castration is recommended routinely at the time of herniorrhaphy especially if prostatic disease or testicular disease coexisted with hernia.

Post operative complications

Infection resulting from dehiscence is the most common complication as the repair involved contaminated area around the anus. Abscess might occur if the rectum had been perforated and also that bilateral hernia repair required extreme caution to preserve the nerve supply to the sphincter and excessive tension could result in faecal incontinence. Frequent complication following the correction of bladder herniation is urinary

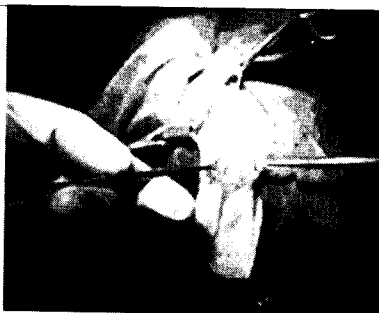
incontinence which resulted from the neurogenic damage to the trigone during strangulation. Rectal prolapse is more prevalent in those animals that had a rectal diverticulum or in patients having severe post-operative pain or discomfort. Chances of hernia recurrence is also a complication especially if the animal exhibit severe straining following surgery.

Conclusion

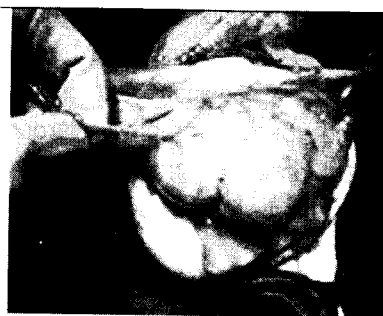
Successful surgical repair of perineal hernias poses a considerable challenge to the veterinary practitioner due to the absence of a strong muscle layer or peritoneum for suturing as in case of other hernias. The surgical technique for closing the perineal defect can be chosen based on the extend of muscle damage. Regardless of the technique chosen, dietary management is of prime importance to avoid tenesmus following surgery.



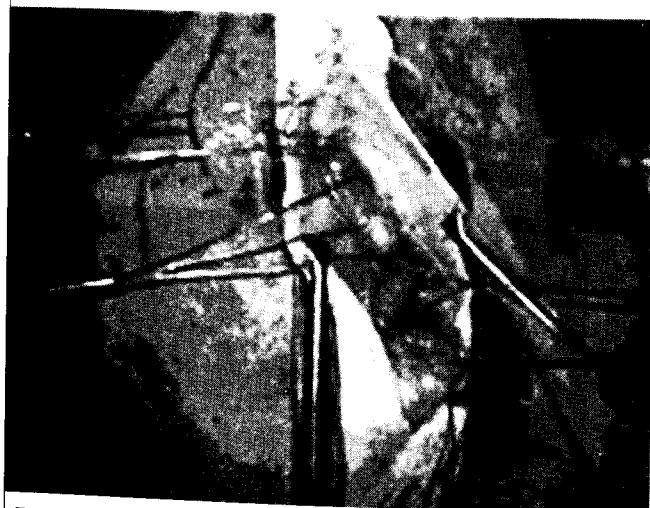
Right sided perineal hernia



Curvilinear incision from base of tail to ischium



Exposure of hernial contents



Preplaced sutures through perineal muscles



Postoperative appearance