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Colopexy as a Treatment for Rectal Prolapse in Dogs and Cats: A Retrospective Study of 14 Cases

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Colopexy was evaluated as a treatment for recurrent rectal prolapse in eight dogs and six cats. Cases included in the study were from two institutions; the University of Pennsylvania School of Veterinary Medicine and the University of Tennessee College of Veterinary Medicine. Two different colopexy techniques were used: A simple suture technique was used in two cats and four dogs (University of Pennsylvania), and an incisional technique was used in four cats and four dogs (University of Tennessee). Rectal prolapse had not recurred in any of the 14 animals at the time of follow-up. Incisional dehiscence occurred in two animals and in one instance may have been related to the colopexy procedure. Infection at the colopexy site, secondary to suture penetration of the colonic lumen, is a potential complication of this procedure. Colopexy, using either surgical technique described here, was effective in preventing recurrent rectal prolapse.

Colopexy is a surgical technique to create an adhesion between the colon and the abdominal wall. It is used to treat and prevent the recurrence of rectal prolapse. To our knowledge, the literature on colopexy in dogs and cats is limited to descriptions of the surgical technique in veterinary textbooks.1,2

Rectal prolapse has been associated with several conditions in the dog and cat. It can occur secondary to prolonged tenesmus and most commonly occurs in heavily parasitized animals with severe diarrhea.1 Other conditions that may cause rectal prolapse include intestinal neoplasia and foreign bodies, dystocia, urolithiasis, constipation, congenital defects, prostatic disease, and rectal polyps.3 Rectal prolapse also may occur after repair of perineal hernias, especially in dogs with bilateral hernias, complicated by rectal sacculation.1,2

Gastropexy, using a simple suturing technique, has been reported to be unsuccessful in forming a permanent adhesion between the stomach and the abdominal wall.3,4 Another study evaluated both clinically and histologically the incisional and scarified gastropexy techniques, and concluded that both techniques produced a permanent gastropexy.5 We theorized that an incisional colopexy may provide a more permanent pexy than a nonincisional colopexy and, therefore, give a better long-term clinical result.

The purposes of this retrospective study were to describe and compare two colopexy techniques used for the treatment and prevention of persistent or re-
current rectal prolapse and to present clinical results of the techniques in 14 cases.

**MATERIALS AND METHODS**

The medical records of eight dogs and six cats with a prolapsed rectum treated with colopexy at either the University of Pennsylvania School of Veterinary Medicine or the University of Tennessee College of Veterinary Medicine from 1986 to 1992 were reviewed and information on signalment, history, clinical signs, and treatment was obtained. Follow-up examination was performed by a veterinarian. Information regarding wound infection, frequency and consistency of bowel movements, continued tenesmus, and recurrence of rectal prolapse was obtained. The frequency of complications and rectal prolapse recurrence that occurred after the two colopexy techniques was compared.

**SURGICAL TECHNIQUES**

Two colopexy techniques were used. Technique 1 was used at the University of Pennsylvania, technique 2 at the University of Tennessee. In both techniques, the colon was exposed using a ventral midline laparotomy and the descending colon was pulled cranially. A nonsterile assistant determined by visualization and rectal palpation that there was traction on the rectum and that the prolapse was reduced. The descending colon was then sutured to the left ventral abdominal wall approximately 2.5 cm lateral to the linea alba.

**Technique 1 (Nonincisional Colopexy)**

Sutures were passed through the submucosal layer of the colon on the antimesenteric surface and secured to the left abdominal wall using a simple interrupted pattern and absorbable suture material (2.0 polidioxanone; PDS, Ethicon, Inc., Washington Crossing, NJ). After one row of five to six sutures was placed, the colon was rolled towards midline and a second row of sutures was placed in a similar manner.

**Technique 2 (Incisional Colopexy)**

Two adjacent incisions were made at the site of colopexy: one in the antimesenteric seromuscular layer of the colon and another in the apposing left abdominal wall musculature. Each edge of the seromuscular colonic incision was sutured separately to the corresponding edge of the incision in the abdominal wall (two rows). A simple interrupted pattern using a nonabsorbable suture (3-O Prolene; Prolene, Ethicon, Inc.) was used. Because the colon's seromuscular layer is very thin, care was taken to ensure that neither the incision nor the sutures penetrated the colonic lumen.

Postoperative recovery was uneventful in all cases.

**RESULTS**

Signalment, primary presenting complaint, and follow-up on eight dogs and six cats treated with colopexy are summarized in Table 1. Six of the eight

<table>
<thead>
<tr>
<th>Case No.</th>
<th>Breed</th>
<th>Age (years)</th>
<th>Sex</th>
<th>Presenting Complaint</th>
<th>Time to Follow-Up (months)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Persian</td>
<td>4</td>
<td>M</td>
<td>Rectal prolapse</td>
<td>7</td>
</tr>
<tr>
<td>2</td>
<td>Siberian husky</td>
<td>13</td>
<td>MC</td>
<td>Bilateral perineal hernia</td>
<td>16</td>
</tr>
<tr>
<td>3</td>
<td>Pomeranian</td>
<td>8</td>
<td>MC</td>
<td>Bilateral perineal hernia</td>
<td>30</td>
</tr>
<tr>
<td>4</td>
<td>Mixed breed dog</td>
<td>6</td>
<td>MC</td>
<td>Bilateral perineal hernia</td>
<td>6</td>
</tr>
<tr>
<td>5</td>
<td>Old English sheepdog</td>
<td>9</td>
<td>MC</td>
<td>Bilateral perineal hernia</td>
<td>30</td>
</tr>
<tr>
<td>6</td>
<td>Persian</td>
<td>13</td>
<td>MC</td>
<td>Rectal prolapse</td>
<td>6</td>
</tr>
<tr>
<td>7</td>
<td>Mixed breed dog</td>
<td>5</td>
<td>MC</td>
<td>Rectal prolapse</td>
<td>18</td>
</tr>
<tr>
<td>8</td>
<td>Manx</td>
<td>1</td>
<td>M</td>
<td>Rectal prolapse</td>
<td>12</td>
</tr>
<tr>
<td>9</td>
<td>Manx</td>
<td>.5</td>
<td>M</td>
<td>Bilateral perineal hernia</td>
<td>52</td>
</tr>
<tr>
<td>10</td>
<td>Mixed breed dog</td>
<td>8</td>
<td>MC</td>
<td>Rectal prolapse</td>
<td>4</td>
</tr>
<tr>
<td>11</td>
<td>Manx</td>
<td>1</td>
<td>M</td>
<td>Rectal prolapse</td>
<td>8</td>
</tr>
<tr>
<td>12</td>
<td>Shar-pei</td>
<td>3</td>
<td>FS</td>
<td>Rectal prolapse</td>
<td>22</td>
</tr>
<tr>
<td>13</td>
<td>Domestic shorthair</td>
<td>1</td>
<td>M</td>
<td>Rectal prolapse, diarrhea</td>
<td>24</td>
</tr>
</tbody>
</table>

Abbreviations: M, male intact; MC, male castrated; and FS, female spayed.
dogs were middle aged to older intact males that were presented initially for bilateral perineal hernias with large rectal sacculations. The hernias were repaired bilaterally using transposition of the internal obturator muscle.\(^\text{3}\) All of these dogs were castrated at the time of perineal herniorrhaphy. The prostate was not noted to be abnormal in any of the dogs. Rectal prolapses developed in all dogs within 12 hours of the hernia repair and were treated with anal purse-string sutures left in place for 2 to 4 days. In all dogs, the rectal prolapse recurred immediately after removal of the purse-string suture. Colopexy was performed in five dogs within 14 days of the initial surgery. In dog no. 5, there were three unsuccessful attempts to treat the rectal prolapse with a purse-string suture and a colopexy was performed 35 days after the initial surgery.

Rectal prolapse was the primary symptom on presentation in two dogs (dog no. 12 and no. 14). Dog no. 14 presented with diarrhea and tenesmus and a fecal culture was positive for campylobacter. In dog no. 12, the results of fecal analyses were negative, and there was no identifiable cause for the rectal prolapse; colonoscopy and colonic biopsies were not performed.

In all cats, the symptom on presentation was recurrent rectal prolapse. The results of their fecal analyses (parasitic and bacterial culture) were negative. No underlying cause for the rectal prolapse could be identified in four cats (nos. 1, 6, 8, and 13). In two Manx cats (no. 9 and no. 11) the rectal prolapse was thought to be secondary to a congenital rectal neurological abnormality, however, electromyograms were not performed to confirm this. Cat no. 9 was also fecally incontinent.

Colopexy technique 1 was used in animals no. 1 to 6; technique 2 was used in animals no. 7 to 14 (Table 1). There was no difference in the clinical outcome between the two techniques based on the parameters evaluated.

Follow-up duration varied from 4 to 52 months (median, 12 months; mean, 17 months). Re-evaluation was based on physical examination by a veterinarian. At the time of re-examination all owners were questioned about the frequency and consistency of the animal’s bowel movement and whether there was any tenesmus after the colopexy surgery. Rectal prolapse had not recurred in any of the 14 animals at the time of follow-up. None of the owners reported that their animals had tenesmus or abnormally formed bowel movements although cat no. 9 had persistent fecal incontinence. Complications were noted after surgery in one cat and one dog that had been treated with technique 1. The cat (no. 1) was presented 4 days after colopexy surgery with dehiscence of a 1-cm section of the abdominal incision and herniation of omentum after an episode of vomiting. The defect was repaired and there was no evidence of infection or involvement at the colopexy site. The dog (no. 2) was returned 14 days after colopexy with dehiscence of a 7-cm section of the caudal skin incision and a body wall hernia. At surgery, the abdominal incision dehiscence appeared to be associated with localized inflammation around the intact colopexy site. There were no systemic signs of infection. The repaired incision healed uneventfully.

**DISCUSSION**

The treatment for rectal prolapse includes identification and correction of the primary cause of straining and definitive treatment of the prolapse. Definitive treatment depends on the condition of the prolapsed tissue and the ability to reduce it. Initial treatment of a reducible rectal prolapse usually includes manual reduction of the prolapse and placement of a anal purse-string suture that is left in place for 24 to 48 hours.\(^\text{1}\) Amputation of the prolapsed portion of tissue is indicated when the tissue is not reducible or is necrotic. In some animals the prolapse may recur and colopexy should be considered as a more definitive treatment.

None of the dogs and cats in our study had tenesmus or recurrence of the rectal prolapse after colopexy. All except one cat (no. 9) had normal bowel movements after surgery. Of the two animals that developed complications after surgery, only one appeared to be associated with the colopexy. In this instance, dehiscence and inflammation of the caudal aspect of the incision could have been associated with infection around the colopexy (a culture was not obtained). Care is necessary to place colopexy sutures into the submucosa only and avoid entering the colonic lumen to prevent contamination of the colopexy site.

In this study the choice of absorbable suture material in the nonincisional colopexy and nonabsorbable suture material in the incisional colopexy was
made during surgery and was not part of the study design.

Based on the parameters evaluated, there does not seem to be any difference in the long-term clinical outcome when comparing nonincisional and incisional colopexy techniques. Both appeared to be equally effective in preventing rectal prolapse. Postmortem and histological evaluation of the colopexy site would be needed to evaluate adhesions and the presence of any localized infection. However, given the successful clinical outcome and minimal complications associated with colopexy, the authors could not justify killing animals for this type of evaluation.

REFERENCES