Clinical Report

Double Intestinal Intussusception due to Acute Enteritis in a Young Tibetan Spaniel Dog

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Abstract

Case Description - A six-month-old female Tibetan spaniel dog with repeated rectal prolapse and unsuccessful treatments was referred to the clinic of Faculty of Veterinary Medicine of Razi University (Kermanshah, Iran). Regarding the patient’s history colopexy was done through celiotomy incision, but 3 days later the patient was referred again with recurrence of prolapse.

Clinical Findings - On abdominal palpation, a sausage like mass was palpated in the abdomen. The clinical parameters were in the normal range, but stool samples proved the presence of giardia. The hemagglutination test for parvovirus was positive as well.

Treatment and Outcome - Exploratory celiotomy revealed presence of double intussusception. The intussuscepted segments were edematous and congested with adhesions and signs of devitalization. Resection and re-anastomosis were performed. The patient died 24 hours after surgery. The owner did not allow post-mortem examination, though the actual cause of death was remained unknown. The animal death could be related to weakness due to parvovirus and giardia enteritis, delay in treatment of underlying disease, electrolyte imbalance, surgical stress and inadequate postoperative management.

Clinical Relevance - Puppies and kittens show higher incidence of intussusception than adult animals. Any portion of the alimentary tract may be involved, but previous studies have indicated that the majority of intussusceptions in small animal are enterocolic. Prompt and precise diagnosis and accurate treatment with considering underlying diseases such as infectious enteritis and endoparasitism is very important to save the patient life.

Key words: double intussusception, dog, celiotomy

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Case Description

A six-month-old female Tibetan spaniel dog with the complaint of mass protruding through the anus (Fig. 1) and the history of previous several unsuccessful treatments such as manual replacement of prolapsed mass and suturing, was presented to the clinic of Faculty of Veterinary Medicine of Razi University (Kermanshah, Iran). It was diagnosed as rectal prolapse, though the prolapsed mass was cleaned and reduced, and colopexy was performed via a midline celiotomy¹,²,³. Any other abnormal abdominal findings were not observed in celiotomy. Three days later the patient was again referred to the clinic with recurrence of the prolapse.

Clinical Findings

On abdominal palpation, a sausage like mass was palpated in the caudal region of the abdomen. The clinical parameters were in the normal range, but stool samples proved to presence of giardia. The
hemagglutination test for parvovirus was positive. With these findings and because of the recurrence of the prolapse, it was tentatively diagnosed as a case of rectal prolapse associated with intussusception. Unfortunately, diagnostic imaging (ultrasonography/radiology) was not available for definitive diagnosis, though it was decided to perform exploratory celiotomy.

**Treatment and Outcome**

Premedication was made by xylazine (1 mg/kg; IM) and anesthesia was induced and maintained with the combination of ketamine (5 mg/kg; IV) and diazepam (0.2 mg/kg; IV). Ceftriaxone (25 mg/kg; IV) was administered at the time of induction via fluid therapy. A midline celiotomy incision was made, the abdominal cavity was explored and the intussuscepted part was exteriorised involving two separate parts (jejenum and ileum) prolapsed into the colon (double intussusception) (Figs. 2 and 3). Some parts of telescoped segments were released by meticulous manipulation, but it was found to be devitalized. Enterectomy was performed to remove the devitalized part of intestine (Fig. 4), followed by end to end anastomosis (Fig. 5). The intestine was returned back into the abdominal cavity and the celiotomy incision was closed routinely. Despite concurrent postoperative antiparasitic, antibiotic and fluid therapy, the patient died 24 hours later. The owner did not allow any post-mortem examination; though the actual cause of death was remained unknown. Prolonged duration of disease with loss of fluids and electrolytes and delayed inadequate treatment of underlying diseases, or/and inadvertent consideration of the owner in addition to stress from 2 consecutive surgeries, might be the causes of death in this patient. Therefore, the present article reported a case of double intestinal intussusception due to acute enteritis in a young Tibetan spaniel dog and described pathobiology and main causes of this disorder.
Figure 5. After performing Jejuno-colic anastomosis, the suture site was examined for leakage by injection of physiologic saline into the intestinal lumen

**Clinical Relevance**

The term intussusception is a medical condition in which a part of the intestine prolapses or invaginates into the lumen of another part of bowel. Intussusceptum is the invaginated segment of the alimentary tract, whereas, the intussusceptiens is the enveloping segment. The pattern follows the normal direction of peristalsis or occasionally in a retrograde direction. Any portion of the alimentary tract may be involved, but previous studies have indicated that the majority of intussusceptions in small animal are enterocolic. Other reported forms of intussusceptions in young dogs, include gastroduodenal, duodenojejunal, ileoileal and colocolic. Although specific etiological agents have not been implicated in the induction of intussusception, it is more likely to develop especially after handling of the small intestine during surgery, hypertrophied lymphoid nodules, and granulomatusous secondary to inflammatory and parasitic disease such as ascaridosis, linear foreign bodies such as bones, plastic toys and etc. Clinical signs may vary with the amount of obstruction. Affected bowel may be palpable as a sausage-shaped intra-abdominal mass. Intussusceptions can progress to a point at which the small intestine protrudes from the anus. In the present case surgical management of double intussusception in a Tibetan spaniel dog was described. Most authors indicated that puppies and kittens have a much higher incidence of intussusception than adult animals. Intestinal intussusception in young dogs is usually suspected on the basis of abdominal palpation which appears like a defined, firm, tubular structure that should be differentiated from feces and foreign bodies. The condition is frequently associated with enteric infection or intestinal parasitism. In present case, the dog had enteritis may be due to both parvavirus and giardia. The most important clinical signs with ileocolic intussusception are intermittent vomiting, progressive loss of appetite, mucoid bloody diarrhea and a palpable cylinder-shaped mass in the cranial abdomen, depression and anorexia. Diarrhea is the common sign in dogs and cats, but abdominal pain is not a consistent finding in affected animals. The differential diagnoses include all other causes of intestinal obstruction; foreign bodies, intestinal volvulus or torsion, intestinal laceration, adhesions, strictures, abscesses, granulomas, hematomas, tumors, or congenital malformations. Ultrasonography and radiographic evaluation of affected site are very helpful in establishing a definitive diagnosis. Accumulation of gas proximal to the intussusception may be observed on plain radiography. The surgical management of intestinal intussusception involves either manual reduction, or resection and re-anastomosis, or both. The decision is based on the surgeon's gross evaluation of the viability of the intestinal components of the intussusception. Surgical resection and anastomosis of the intussusception are reported to lessen the incidence of recurrence when compared with manual reduction. Commonly, the displacement of a segment of bowel is defined, whereas, very rarely, two separate parts can prolapsed into the same distal segment, giving rise to double intussusceptions. Double intussusception in dogs is a very rare. Animals suffering from intussusceptions will have episodes of anorexia, depression, vomiting and diarrhea. These patients should be immediately undergoing surgery. Any delay in treatment, make poorer prognosis as we observed in the present case. Although the actual cause of death was remained unknown, it might be due to prolonged duration of disease, delay in treatment of underlying causes, weakness and electrolyte imbalance because of parasitic and viral disease, repeated surgery and inadequate postoperative management.

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**Conflicts of interest**

None.

**References**


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چکیده
تلسکوپی شدن دوگانه روده به سبب آنتریت حاد در یک فلاده سگ اسبانیل تبتی

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یافته‌های بالینی- در ملامه شکمی، یک تد ععیغی شکل احغاط هی شد. پاراهتزای بالی‌ییده در هحذیده ًزهال قزار داشتید، اها ًوًَِ هذفَع حاکی اس حضَر صیاردیا بَد. ّوچٌییي تغت ّواگلَتیٌاعیَى بزای پارٍٍیزٍط هثبت بَد.

درمان و نتیجه- در علیَتَهی، تلغکَپی شذى دٍگاًِ رٍدُ ّا هشَْد بَد ٍ قغوت تلغکَپی شذُ ادهاتَس، پزخَى ٍ فاقذ علائن حیاتی ٍ ًیش چغبٌذگی دادُ بَد. لذا اقّع درمان انتیریت، استرس جراحی و عدم مراقبتهای لازم پس از عمل نسبت داد. ارتباط بالینی- احتمال وقوع تلسکوپی شدن روده‌ها در تولید به گره‌ها و بچه‌گنه‌ها بیشتر است. امکان درگیری نسبتی از دستگاه گوارش وجود دارد، اما مطالعات اخیر بیان می‌کند که اکثر موارد تلسکوپی شدن در دام‌های کوهک از نتوان روده‌کی‌فه‌ی باشد. در درمان این بیماران باستی توجه خاص به آنتریت‌های ناشی از عوامل عفونی و انجک و سایر عوامل زمین‌نارس این عارض مبیزول داشته.

کلمات کلیدی: تلسکوپی شدن دوگانه، سگ، سلیبنوتی