

# DOUBLE INTUSSUSCEPTION IN A DOG

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A seven months old intact non-descriptive pup weighing 11 kg was presented with the history of protrusion of mass through anus (intermittently while straining), anorexia, depression, vomiting and diarrhea since two days. Physical examination confirmed incomplete rectal prolapse and abdominal palpation revealed sausage shaped intra-abdominal mass giving a suspicion of an associated intussusception. Under general anaesthesia ventral midline celiotomy was performed and double intussusceptions were noticed at the ileocolic and colocolic region. The viability of the telescoped intestine (ileocolic region) was poor, so resection and oblique end-to-end anastomosis was carried out. The animal had an uneventful recovery.

**Key words:** Double intussusception, end-to-end anastomosis, rectal prolapse, dog.

## Introduction

Intussusception is the invagination of a portion of the intestine (intussusceptum) into the lumen of an adjacent intestinal segment (intussusciptens) in the direction of normal peristalsis or occasionally in a retrograde direction (Rallis *et al.*, 2000). It can occur in any age or species but more than 80% are at around one year old puppies (Hedlund and Fossum, 2007) and the rate of male animals compared to female animals is twice (Kirk and Bistner, 1975). Several conditions, diseases, gastroenteritis or acute viral-induced enteritis that effective on the intestine motility are predisposing to intussusceptions (Han *et al.*, 2008). It is more commonly seen in puppies with intestinal masses (Runyon *et al.*, 1984), parasites such as hookworms, whipworms and roundworms (Wilson and Burt, 1974), intestinal foreign bodies such as bones, plastic toys, etc. (Larsen and Bellenger, 1974) and abdominal surgery (Kipins, 1977). It occurs more often as an ileocolic intussusception, although gastroduodenal, duodenojejunal, jejunojejunal, ileoileal and colocolic intussusceptions have been described in young dogs (Lamb and Mantis, 1998; Pietra *et al.*, 2003; Patsikas *et al.*, 2008). Several reports on intussusception have previously been reported (White, 2008; McGill *et al.*, 2009). However, double intussusception (DI) in dogs is a rare entity. The present case reports the successful surgical management of double intussusceptions in a non-descriptive dog.

## Case History and Observations

A seven months old intact non-descriptive pup weighing 11 kg was presented with the history of protrusion of mass through anus (intermittently while straining), anorexia,

depression, vomiting and diarrhea since two days. The animal was not dewormed and vaccinated. Physical examination confirmed rectal prolapse and abdominal palpation revealed sausage shaped intra-abdominal mass giving a suspicion of an associated intussusception. Temperature was normal but the heart and respiratory rates were elevated and the dog was dehydrated and emaciated. Prolapsed mass were soiled, pink and hyperaemic and self-mutilations were also noticed. The prolapsed mass was cylindrical in appearance with a luminal opening at its end. Probing with thermometer between the prolapsed mass and anal sphincter revealed rectal prolapse but not telescoping of intestine. An immediate surgical correction was resorted to.

## Treatment and Discussion

The animal was premedicated with atropine sulphate @ 0.04 mg/kg followed by xylazine hydrochloride @ 1 mg/kg body weight intramuscularly, respectively. General anaesthesia was induced using ketamine hydrochloride @ 5 mg/kg b.wt and diazepam @ 0.2 mg/kg b.wt intravenously, respectively. The anaesthesia was maintained with 1/3 to 1/2 of induction dose of the above mixture intermittently as and when required. Cefotaxime and meloxicam were administered intravenously @20 mg/kg and 0.2 mg/kg body weight respectively.

A ventral midline celiotomy was performed and the intestines were exteriorized. Double intussusception was noticed at the ileocolic and colocolic region (Fig.1). The prolapsed mass was reduced by applying traction on the colon. The viability of the telescoped intestine (ileocolic region) was poor,

so resection and oblique end-to-end anastomosis was carried out using No.3.0 PGA. Linea alba and skin were apposed by No. 1 PGA and silk. The animal had an uneventful recovery.

In the present case the animal was seven month old and male; this was in accordance with the findings of Kirk and Bistner, (1975) and Shiju Simon *et al.*, (2009). Intussusceptions

formed as a result of abnormality within the intestinal wall (nonhomogeneity) that alters the intestinal pliability and motility. The common clinical signs of intussusception are associated with referable to partial or complete intestinal obstruction and the affected bowel may be palpable as a sausage-shaped intra abdominal mass (Kirk and Bistner, 1975; Larsen and Bellenger, 1974).



**Fig. 1 Double intussusception in a non-descriptive dog**

In the present case, double intussusceptions caused standard intussusception symptoms and were indistinguishable from classical intussusception preoperatively. After celiotomy, it was detected easily and it did not cause any extra difficulty in manual reduction. There was no sign to hypothesize an explanation for the origin of this entity. There also was no clue to suggest which of the intussusceptions occurred first. However, a plausible justification is that the obstruction of the distal intussusception may have caused colonic distention, thus, enabling the invagination of the ileum into the distended ascending colon. If left untreated, interference with venous drainage and arterial occlusion can lead to ischemia and necrosis of the bowel. Intussusception must be distinguished from several condition, include intestinal volvulus or torsion, intestinal laceration or obstruction; foreign bodies and tumors, abscesses, granulomas and congenital malformations (Han *et al.*, 2008). Prolepses of longer duration and the tissue having poor viability should be managed either by mucosal resection or complete resection and anastomosis (Niebauer, 1993). Commonly, the sliding of a segment of bowl is defined, whereas, very rarely, two separate parts can prolapsed into the same distal segment, giving rise to double

intussusceptions (Han *et al.*, 2008). To our knowledge, double intussusception is a very rare surgical condition. Surgical treatment consisted of either simple reduction, simple reduction with plication, intestinal resection/anastomosis, or intestinal resection/anastomosis with plication. It can thus be concluded that regular deworming, vaccination and feeding laxative diet can prevent rectal prolapse and intussusceptions.

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