

# Jejunojejunal intussusception in foal: case report

## *Intussuscepção jejunojejunal em potro: relato de caso*

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### Abstract

Intussusceptions are unusual intestinal incidents which may result in acute and progressive or recurrent abdominal discomfort in foals. This condition asymptotically affects newborn foals (3-12 months), are surgical emergencies when it involves the small intestine, especially the jejunum. Transabdominal ultrasound evaluation is an important diagnostic method, due to their size limitations for acute abdomen evaluation. The present report shows the importance of using transabdominal ultrasound in foals with acute abdomen.

**Keywords:** Foals. Intussusception. Ultrasonography.

### Resumo

As intussuscepções são acidentes intestinais incomuns e que podem resultar em desconforto abdominal agudo e progressivo ou recorrente em potros. Esta condição afeta potros neonatos de forma assintomática e de 3 a 12 meses são emergências cirúrgicas quando envolvem o intestino delgado, principalmente o jejuno. A avaliação ultrassonográfica transabdominal é um importante para o exame desses animais devido às limitações de seu tamanho para avaliações do abdômen agudo. O presente relato de caso mostra a importância da utilização do ultrassom transabdominal em potros com abdômen agudo.

**Palavras-chave:** Potros. Intussuscepção. Ultrasonografia.

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### Introduction and Bibliographic Review

Intussusceptions are unusual intestinal incident that can develop spontaneously or secondarily to intestinal motility disorders (WEESE, 2008).

Usually, this condition occur in young foals (3-12 months). Predisposing factors include enteritis, motility disorders, and worm infestation are risk factors in older foals (WEESE, 2008). Ascarids,

tapeworms (*Anoplocephala perfoliata*), and mesenteric arteritis are included among them.

Sudden changes in diet, as well as enterotomies and intestinal resection/anastomosis can be triggering factors. Pedunculated masses (papilloma, leiomyoma, cryptococcal granuloma, unknown-cause granulomas, and carcinoids) may form conductive edges of a jejunojejunal intussusception (AUER; STICK 2012; ORSINI; DIVERS, 2014).

Intussusception of the small intestine in horses occurs due to various presentations, including jejunojejunal, jejunoleal, and ileoileal presentations. Impairment of the jejunum usually involves a large extension of the segment, causing complete obstruction (LIN et al., 2008; AUER; STICK, 2012).

Typically, such obstruction results in acute and progressive abdominal discomfort. Initially, signs of

toxemia and cardiovascular impairment are unusual, but they can develop with intestinal involvement or rupture. Incomplete invaginations in the intestine may result in partial obstruction, triggering a chronic and recurrent abdominal discomfort (LIN et al., 2008; AUER; STICK, 2012; ORSINI; DIVERS, 2014).

Due to the limitations in the evaluation of acute abdomen in foals by means of transrectal palpation, transabdominal ultrasound evaluation has been a valuable resource for the evaluation of these animals (LIN et al., 2008; WEESE, 2008).

During ultrasound evaluation of horses with gastrointestinal disorders, echogenicity, wall thickness, content, and motility are evaluated. It provides useful information to determine the diagnosis, prognosis, treatment, and monitoring of treatment response (ABRAHAM et al., 2014).

Distensions of the small intestine on the right side of the abdomen in ultrasonography are evident. Variable intestinal motility and distention of the small intestine do not rule out intussusception. Frequently, this condition can be detected by the ultrasound image characterized by "target lesion", also called as "bull's eye" (LIN et al., 2008; WEESE, 2008; AUER; STICK, 2012).

Gold et al. (2006) reported a case of intussusception during the ultrasound scanning in which distension in the small intestine with hypomotility, and presence of fluid in the stomach.

The "target" image or centered portion is called intussusceptus or invaginated portion of the intestine. The other portion, which surrounds the initial image is called intussusceptient (WEESE, 2008).

Usually, the strangulated intestine presents thickened and edematous, hypoechoic walls, absent peristaltic activity, and fibrin can often be found between the layers (ORSINI; DIVERS, 2014).

Abraham et al., (2014) evidenced ten asymptomatic jejunojejunal intussusceptions in 18 newborn foals aged between 24 h and five days.

## Case report

A four-month-old foal was referred with a history of acute and progressive abdominal discomfort irresponsive to analgesia. After hospital admission, physical examination included heart rate (HR: 100 beats/min), respiratory rate (RR: (40 respiratory movements/min), capillary perfusion time (CPT: 3-4 s), hematocrit (HT: 34%), and total plasma protein (TPP: 5.8 g/dl).

Due to the foal size and impossibility of transrectal palpation, trichotomy of the abdomen was performed for ultrasonography, and peritoneal fluid collection.

In the ventral abdomen region, mainly on the right side, many distended segments of the small intestine were observed (figure 1), showing discrete and generally absent motility. In as two specific points, a "target" point with an overlapping intestinal structure, characterizing the typical denomination "bull eyes", could be observed (figure 2), and intussusception of the small intestine was then concluded the diagnosis. The foal followed with discomfort, and sedation was performed with detomidine hydrochloride (20 µg/kg) and butorphanol tartrate (0.02 mg/kg). Collection of peritoneal fluid was performed in decubitus.

Macroscopically, the liquid was yellow slightly cloudy, with protein (2.0 g/dl) and lactate (9.4 mmol/l). Thus, analysis of venous blood lactate (7.8 mmol/l) was performed a for comparison.

Unfortunately, the foal of this study was devoid had low economic value he owner opted for euthanasia.

Necropsy was performed and a jejunojejunal intussusception (*ca.* 2.5-m) found. After the obstruction congestion serosa and all the mesenterium involved in the segment was verified (Figures 3 and 4).

Therefore, it can be concluded that ultrasound examination an additional tool to evaluate horses with acute abdomen, and can be considered essential in the evaluation of foals.



Figure 1 - Distension of the small intestine with thickening of the wall (white arrow) and internal content (full white arrow)  
 Source: (EQUIVET, 2015)



Figure 2 - "Target" central structure (intussusception), and overlapping structure (intussusceptient)  
 Source: (EQUIVET, 2015)



Figure 3 – Intussusception area (black arrow)  
Source: (EQÜIVET, 2015)



Figure 4 – Jejunal segment with serous congestion (2.5 m) after intussusception reduced  
Source: (EQÜIVET, 2015)

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