

Atresia coli in a foal – case report

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Summary

The paper describes a case of atresia coli in a new born foal. Final diagnosis of atresia of the small colon was confirmed during laparoscopy. The blind end of the small colon was distended and had a diameter of approximately 7 cm. Rectum was very short and narrow. Length about 5 cm and diameter about 6-7 mm. Side to side anastomosis between the rectum and colon was performed. Recovery from anesthesia was uneventful. Six hours after the surgery patient was very painful and died 2 hours later. During post mortem examination ruptured of anastomosis site was found.

Keywords: horse, foal, atresia coli

New born foals can at rare times suffer from a very uncommon condition known as atresia coli (3). This disease is characterized by an incomplete digestive tract, due to part of the colon being missing (7). The missing part can vary in size from a few centimeters to the complete atresia of the large and or small colon. Other malformations, such as atresia recti and ani, can occur simultaneously with atresia coli (2-4). The condition itself is most probably congenital and some scientist conjecture that a loss of blood supply induces atrophy and even sometimes atresia of the affected digestive tract segments (1, 3, 5, 6).

Case history

The foal presented to the hospital was 11 hours old. A local veterinary surgeon had sent the patient to the hospital for lack of meconium and signs of colic. The filly arrived in the hospital in poor condition showing light signs of colic and from time to time attempted to lie down. Its rectal temperature was 38.4 Celsius degree and mild abdominal distention was observed. Some blood was found during rectal examination. Hematology revealed; red blood cells – $6.8 \cdot 10^3/\text{mm}^3$, white blood cells $13.6 \cdot 10^3/\text{mm}^3$, hemoglobin 11.1 g/dl, hematocrit 45%. Blood biochemistry shown elevated levels of total protein: 9 g/dl, and albumin below the normal range: 1.9 g/dl.

Provisional diagnosis established an impaction of the meconium. The lack of meconium in the rectum and the presence of blood also suggested atresia recti and atresia coli. Final diagnosis of atresia coli was confirmed during laparoscopy.

Initial treatment of the symptoms included fluid therapy (ringer lactate, 40% dextrose, amino acid infusion) and

painkillers (methamizol, butorphanol and detomidine). The treatment also consisted of anti-ulcer drugs such as omeprazole, and antacids such as aluminum hydroxide. Due to the lack of positive results of the treatment and the presence of continuous pain it was decided that surgery should be performed.

Medline laparoscopy was performed on the foal in dorsal recumbence (fig. 1). The first step was to remove the umbilical remnants (fig. 2). During surgical exploration atresia coli was recognized. The blind end of the small colon was distended and had a diameter of approximately 7 cm (fig. 3). The rectum was very short and narrow, about 5 cm in length and with a diameter of about 6-7 mm (fig. 4). Side to side anastomosis between the rectum and colon was performed (fig. 5) following which the mesentery was sutured (fig. 6). Eventually the foal was replaced to the recovery box (fig. 7).

Recovery from anesthesia was uneventful. Flunixin meglumine 1.1 mg/kg was administered to alleviate the pain. Antibiotic therapy consisted of ceftiofur sodium 5 mg/kg and gentamycin 6.6 mg/kg. Six hours after surgery the patient was in great pain and died 2 hours later. Post mortem examination revealed the ruptured site of anastomosis.

Discussion

Foals affected by atresia coli usually begin to show clinical signs within the first 48 hours of life (2, 3, 5, 7). At the beginning they seem to be generally in good condition but are unable to pass the meconium. Later the foals show signs of abdominal pain and abdominal distension.

In general, establishing a diagnosis is difficult and is usually confirmed during exploratory laparoscopy



Fig. 1. Foal in dorsal recumbency



Fig. 2. Umbilical remnants

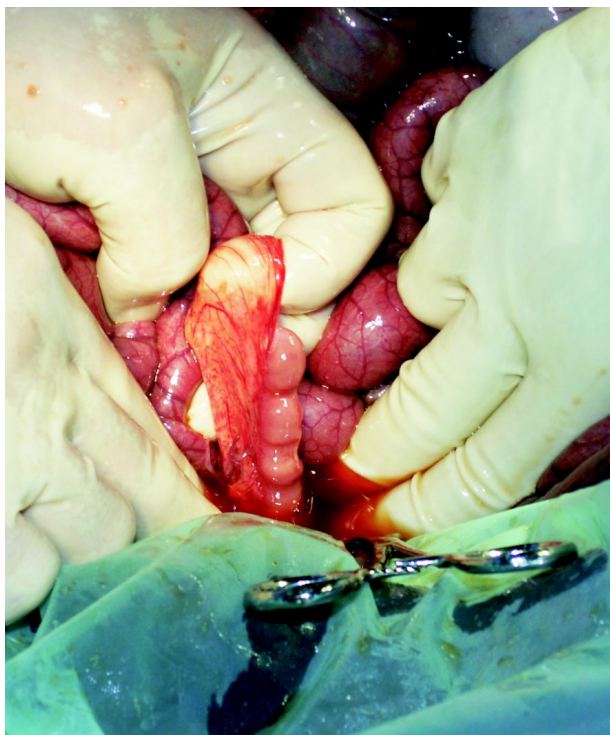


Fig. 4. Short and narrow rectum



Fig. 3. The blind end of the small colon

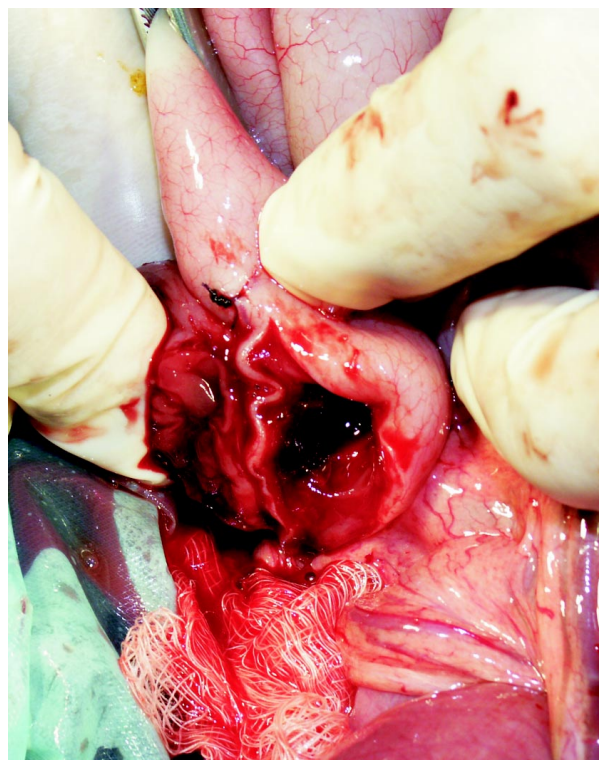


Fig. 5. Anastomosis side

or necropsy (1-4). The most consistent finding during physical examinations is the absence of meconium staining following repeated enemas. Sometimes the blind end of the rectum can be recognized by palpation. Proctoscopy can be a useful procedure in establishing a diagnosis. Radiography can be helpful – particularly with contrast (oral or retrograde barium contrast enema studies, or both). Atresia coli should be differentiated from lethal white syndrome and

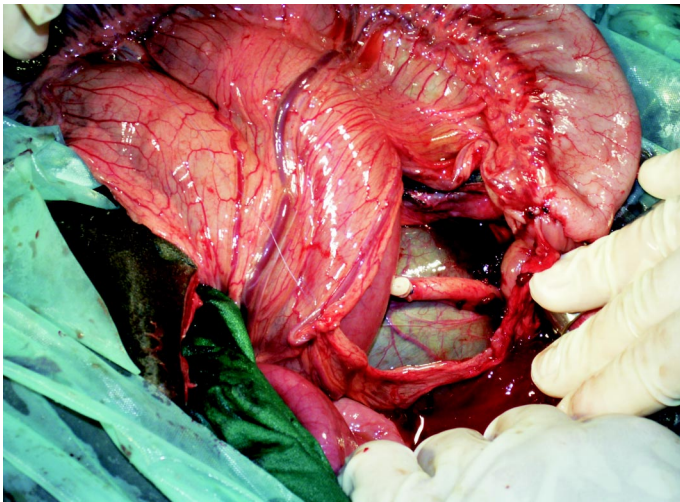


Fig. 6. Mesentery suturing



Fig. 7. Foal after the surgery in the recovery box

meconium impaction, both of which can coexist with atresia coli. The prognosis depends on which segment of the colon is absent but is generally poor because of the absence of a distal colon (2, 5). It is likely that the condition is more complex and probably also involves other neurological dysfunctions. The only successful treatment is surgery and its main goal is to reconstruct the prolongation of the intestine. Literature describes a few cases which were treated surgically but none of the patients survived more than 18 months (2, 3, 5). Surgery is sometimes impossible owing to the location of the problem.

Why, in the above described case, did the anastomosis site rupture a few hours post surgery? The simplest explanation can be that difficulties were experienced during suturing due to extensive differences between the diameters of the rectum and colon. Another important factor to be considered is the short length of the fragment of the remaining rectum. These circumstances meant that it was extremely difficult to make an anastomosis between the very narrow and short rectum and the much bigger colon. The large differences between the anastomosed fragments of the intestines created huge pressure during the progression of ingesta and this could be the main reason why

the suture failed. As the atresia coli is a congenital condition the most important aspect in preventing it is to avoid using the parents of the affected foal for breeding (5, 6). The mother of the presented foal experienced the same problem with 2 previous foals which died a few days after delivery, but unfortunately necropsy was not performed in their cases.

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