

A CASE STUDY ON PATHOMORPHOLOGICAL FINDINGS IN INTESTINAL OBSTRUCTION BY ENTEROLITH IN A HORSE

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SUMMARY

A 2.5 years old female horse with the history of colic since last 10 days died and presented for necropsy examination to the Department of Veterinary Pathology, DGCN COVAS, CSKHPKV, Palampur. Necropsy examination revealed weak carcass with obstruction at distal colono-rectal junction with a foreign body (gunny bag and concentrate feed). Adhesions along with areas of perforation on the serosal surface and diphtheritic membrane formation with hemorrhagic changes were quite evident on mucosa of the intestine, where the foreign body was entrapped. Microscopically, denudation of the basement membrane of intestinal mucosa along with infiltration of neutrophils and lymphocytes was appreciated.

Keywords: Colic, Horse, Necropsy, Obstruction

Colic is a major cause of morbidity and mortality in horses (Archer and Proudman, 2006). Impaction of the intestinal tract is common in horses, causing nearly 30% of the colic conditions. Overall, the three most common causes of colic are large colon impaction (20.8%), large colon displacement (16.5%) and spasmodic colic (11.7%) (Abutarbush *et al.*, 2005). Large colon impaction often develops at the sites of narrowed luminal diameter such as the pelvic flexure or just proximal to the transverse colon in the right dorsal colon (Sabev and Kanakov, 2008). Only a small proportion of obstructive colic are caused by foreign bodies (White, 2014). Practices including feeding, changes in management, parasitic infestations and lack of access to pastures or to water can also contribute for the development of such kind of deadly conditions (Sawesi *et al.*, 2014; Lindroth, 2016).

A 2.5 years old female horse with the history of colic since last 10 days was presented for checkup at Multispecialty Veterinary Hospital at DGCN COVAS, CSKHPKV, Palampur. Animal was collapsed during the treatment and presented to the Department of Veterinary Pathology for necropsy examination. The carcass was thoroughly examined, gross lesions were recorded and tissue sections of 0.5 cm thickness were collected in 10% neutral buffered formalin. After proper fixation, tissues were processed, sectioned at 4-6 micron thickness, stained with Haematoxylin and Eosin (H&E) as per the standard protocol (Luna, 1968).

Gross examination revealed the presence of ulcerative lesions on the glandular portion of the stomach along with the sites of attachment of *Gasterophilus* larvae (Fig. 1). The stomach and intestinal tract were filled with fluid contents. The segment of serosal surface of intestine at the level of obstruction showed the focal area of perforation with fibrinous exudate (Fig. 2). Distal

descending colon was obstructed with a big gunny bag containing hard solidified feed material leading to complete blockage of lumen (Fig. 3). The mucosal surface of intestine revealed the areas of diphtheritic membrane formation, necrosis, haemorrhage and gangrene resulting into peritonitis (Fig. 4). Sloughing of mucosal layer of intestine and moderate to severe diffuse congestion of liver was also documented. The cranio-ventral portion of lungs showed areas of congestion. Spleen was shrunken. Histopathological examination of intestine revealed the presence of eosinophilic fibrinous exudate (Fig. 5), denudation of epithelium along with necrotic changes infiltrated with neutrophils and mononuclear cells especially lymphocytes (Fig. 6). The reason for the death of the animal is peritonitis induced by the perforation created as a result of intestinal obstruction.

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Fig.1. Gasterophilus larvae on the mucosal surface of stomach.



Fig. 2. Area of perforation on the serosal surface of intestine.

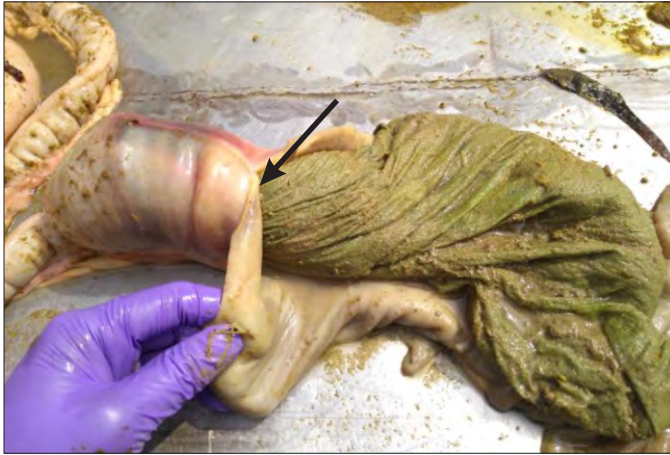


Fig. 3. Part of distal colon showing obstruction of lumen with a large gunny bag containing hard solidified feed material along with sand.

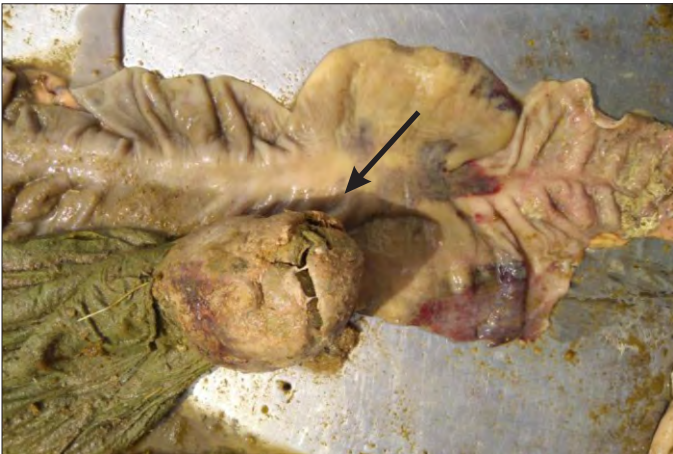


Fig. 4. Presence of gunny bag entangled with concentrated feed material leading to necro-hemorrhagic lesions in the mucosal surface.

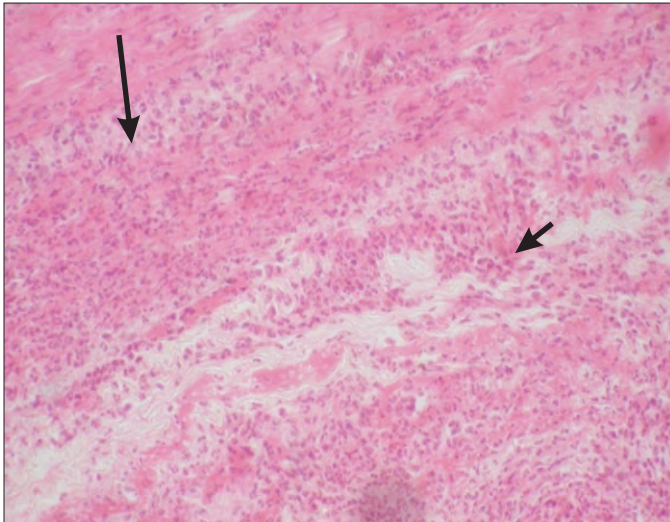


Fig. 5. Severe enteritis characterized by infiltration of neutrophils and mononuclear cells in sub mucosal layer extending into muscular layer. H&E 100X.

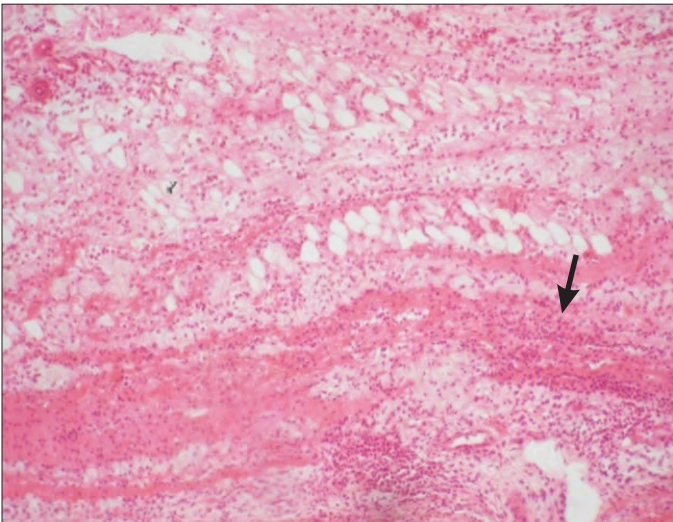


Fig. 6. Deposition of fibrin with neutrophilic infiltration admixed with few lymphocytes. H&E 100X.