

Intussusception of jejunum in pullet naturally infected with coccidiosis: A case report

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ABSTRACT

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This paper describes a rare case of jejunal intussusception in a pullet that suffered from severe diarrhea and succumbed to death. Based on necropsy and microscopic examination, the recorded case of intussusception was found to be associated with severe coccidial enteritis. It is suggested on the basis of present findings and earlier published reports that, intussusception in birds could be attributed to conditions that causes reduced feed intake, hyperirritability, and increased intestinal motility.

Keywords: Coccidiosis, enteritis, intussusception, jejunum, pullet

Intussusception of intestine in birds is a rare condition occurs often as result of increased intestinal motility¹. Among animals, this condition is notably reported in dogs, horses and small ruminants but very few cases have been recorded in poultry as evidenced by availability of very scanty published reports.

However, a slow increase in the incidence is being observed in different parts of the world over a period of time². Intussusception in poultry has been found to be associated with several enteric diseases that causes increased intestinal motility such as coccidiosis, ulcerative enteritis and heavy worm infestation³. These

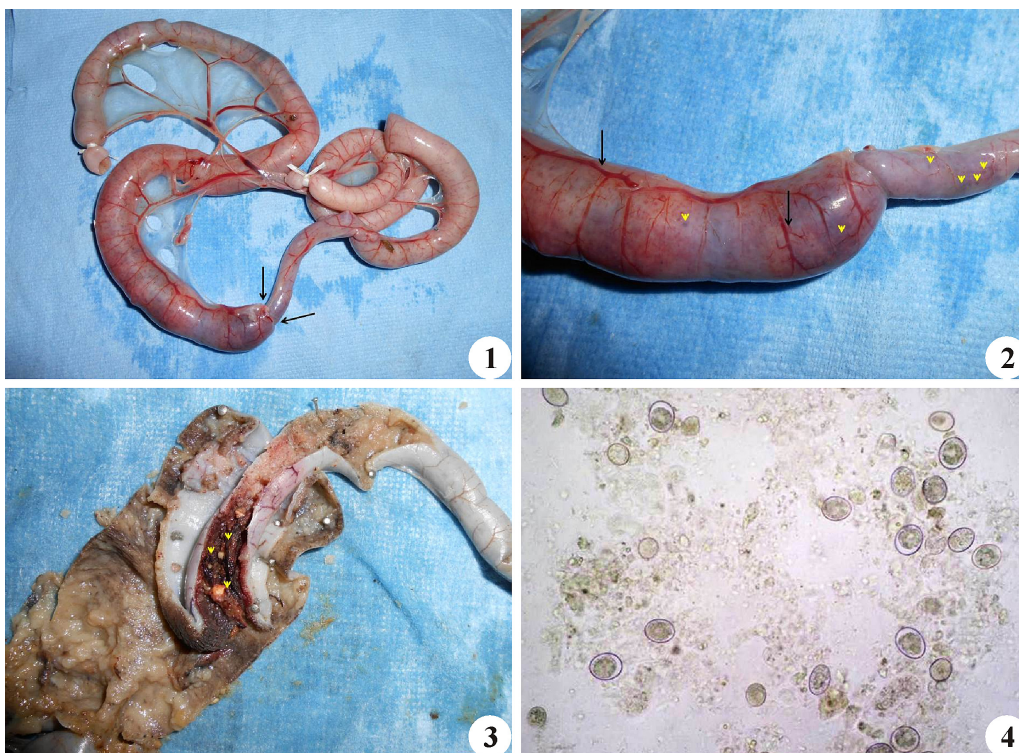


Fig. 1. Jejunum showing telescoping of its anterior segment into posterior portion (arrows); **Fig. 2.** Serosa of affected portion showing congestion, hemorrhages and multiple necrotic foci; **Fig. 3.** Lumen of telescoped intestine showing hemorrhagic contents and necrotic debris; **Fig. 4.** Smear from intestinal content showing un-sporulated *Eimeria* oocysts x200.

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changes, in a few birds, might lead to intussusception, torsion, volvulus and other similar mal-positioning of gastrointestinal tract.

An eight weeks old pullet was presented to avian diseases section, Indian Veterinary Research Institute (IVRI), Izatnagar for necropsy examination and diagnosis. History revealed that the bird had diarrhea for continuous 3 days and was found dead in the next morning. The external appearance of the carcass was fairly good and revealed soiling of vent and hind quarters. The carcass was systematically opened for postmortem examination and the findings were recorded. Smears from fecal contents and mucosal scraping were prepared, coverslipped and examined under light microscope to ascertain parasites, parasitic eggs or protozoan oocysts. Necropsy revealed intussusception within the jejunal segment (Fig. 1); the mesenteric and serosal blood vessels were congested, and the serosa showed multiple diffuse petechial hemorrhages and necrotic foci, predominantly, in the upper intestinal segments (Fig. 2). The lumen of the intestine at the vicinity of intussusception was characterized by necrotic enteritis often with denuded mucosa. When the intussuscepted segments were incised, around 4 centimeter of the jejunal segment was invaginated into its distal part. The lumen of invaginated portion contained hemorrhagic content amidst necrotic debris (Fig. 3). Microscopic examination of smears from intestinal content and mucosal scraping revealed the presence of large number of un-sporulated *Eimeria* oocysts of different morphology (Fig. 4).

Intussusception is sporadically seen in domestic fowls and mostly reported to occur in intestine, but has also been reported in proventriculus⁴. The incidence of this condition appears to be very low as there are very few papers had been published throughout the world but it is uncertain that how many cases remain unreported. The predisposing factors or disease conditions associated with intussusception in birds are necrotic and or ulcerative enteritis, coccidiosis, and heavy worms, particularly the round worms, in the

gastrointestinal tract^{1,2,5,6,7,8}. The reported case of jejunal intussusception was found to be associated with intestinal coccidiosis. These conditions are found to cause tissue injury and increased intestinal motility that often results in different mal-positioning conditions. In the current case, more than two morphologically different *Eimeria* oocysts have been recorded from the intestinal contents of same segment. Based on the segment affected and morphology of oocysts, at least two species namely *Eimeria necatrix* and *Eimeria maxima* were associated in the reported case. Similarly, Rajkhowa⁸ has confirmed the involvement of *Eimeria necatrix* in an intussusception case by morphometric analysis of oocysts. However, the other possible causes need to be investigated for better understanding of etio-pathogenesis of such miscellaneous conditions. As there are very few published reports available on these miscellaneous conditions, a complete necropsy, possibly of all the poultry carcasses are essential to record and report similar conditions for complete understanding.

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