Journal Homepage: -www.journalijar.com
INTERNATIONAL JOURNAL OF ADVANCED RESEARCH (IJAR)
Article DOI: 10.21474/IJAR01/7509
DOI URL: http://dx.doi.org/10.21474/IJAR01/7509
ISSN NO. 2320-5407

RESEARCH ARTICLE

OCCURANCE OF ULCERATIVE ENTERITIS IN ADULT JAPANESE QUAILS.

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Manuscript Info

Manuscript History

Received: 05 June 2018
Final Accepted: 07 July 2018
Published: August 2018

Keywords:-
Gross lesions, Histopathology, Ulcerative enteritis, Quails.

Abstract

Ulcerative enteritis (UE) was diagnosed in 10 week old Japanese quail based on gross, microscopic lesions and cultural examination of the quails submitted for necropsy. The size of flock was 1000 and the quail were kept in deep litter system. Total mortality due to UE was 21.9% and showed decreased egg production. Grossly, intestine particularly duodenum was severely reddened with blood tinged contents in all the quails necropsied. Ileum showed catarrhal enteritis. Microscopically, section of duodenum showed diffused coagulative necrosis of mucosa with haemorrhages, sloughing of epithelial cells and denudation of villi and infiltration of mononuclear cells in mucosa and sub-mucosa. The occurrance of ulcerative enteritis in adult quails could have resulted possibly due to overcrowding stress and development of wet litter due to heavy rain fall. The quails were treated with Diaveridine and Sulphaquinoxaline @ 1g per litre of water for five days showed improvement in controlling mortality.

Introduction:-

Ulcerative enteritis (UE) is an acute enterotoxaemia, a complex, multifactorial and financially devastating bacterial disease caused by the gram-positive, obligate, anaerobic bacteria *Clostridium colinum*. It is also a normal inhabitant of the intestines of healthy chickens[1].The ulcerative enteritis that results in clinical disease most often occurs either after a change in the intestinal microflora or from a condition that results in damage to the intestinal mucosa[2-4]. Anything that promotes excessive bacterial growth and toxin production or slows feed passage rate in the small intestine could promote the occurrence of ulcerative enteritis[5].

In the present study, total of 219 Japanese quails of 10 weeks of age were brought to the department of Veterinary Pathology, College of Veterinary Science, Hyderabad from local area with the history of sudden death. Detailed necropsy examination was carried out and gross lesions were recorded. Affected organs were collected for cultural, histopathological and electron microscopic examination. Intestinal sample was processed for cultural examination on anaerobic media. History collected from farm manager revealed that there was heavy rain fall one week before the outbreak and overcrowding of quails due to repairing work going in other shed. The size of flock was 1000 and the quail were kept in deep litter system.

Clinically quail showed blood tinged diarrhoea and egg production drop. Similarly, symptoms were recorded by earlier workers[6]. Gross examination of carcasses revealed emaciation, paleness of mucous membranes, mild congestion of all internal organs. Duodenum was severely reddened, ballooned with blood tinged foul-smelling, reddish-brown fluid contents in all the quails necropsied (Fig.1). The mucosa was covered with a tan to yellow

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pseudo membrane. The gross lesions observed in the present investigation are in accordance with the earlier reports on UE in chicken[7]. Cultural examination showed black coloured colonies and indicated *Cl .colinum* (Fig. 6).These findings were similar in accordance with other workers [8, 9].

Histopathological examination of duodenum showed diffused coagulative necrosis of mucosa with haemorrhages, sloughing of epithelial cells and denudation of villi(Fig.2). Infiltration of mononuclear cells in mucosa and sub-mucosa along with severe vascular congestion in sub-mucosa and bluish patches in the sloughed epithelial cells indicating bacterial colonies were also noticed (Fig.3, 4). Desquamation, denudation, pseudo membrane formation and shortening of villi were also observed(Fig.5) [6].

Scanning electron microscopic examination of duodenum revealed numerous RBC with distorted epithelial cells,severe necrosis, distortion and denudation of villi. These findings were similar to earlier reports[9] (Fig.7, 8). Based on necropsy, cultural, histopathological and ultra structural examination, the present case was diagnosed and confirmed as Ulcerative enteritis.

Fig.1:- Duodenum was severely reddened, ballooned with blood tinged foul-smelling, reddish-brown fluid contents.

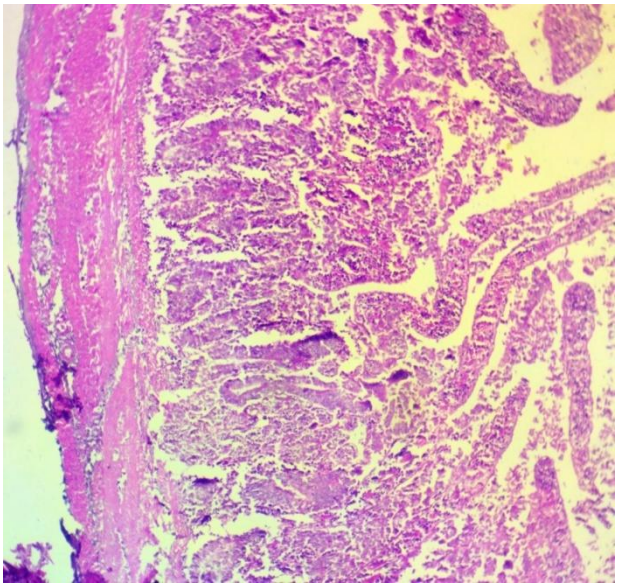
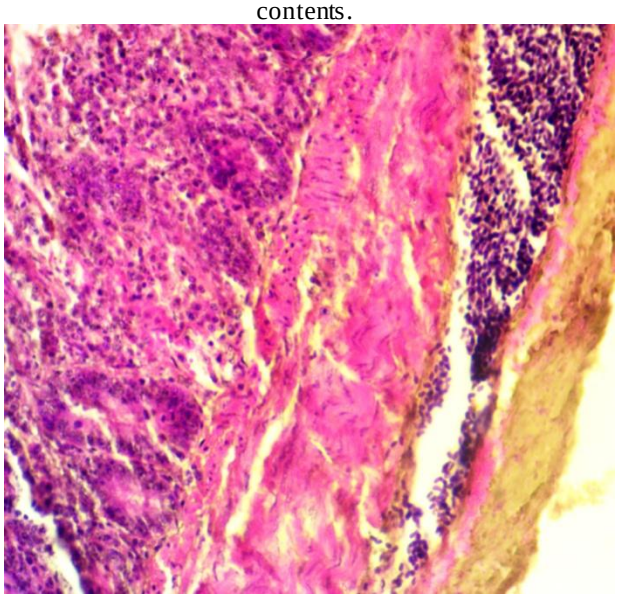


Fig.2:-Diffused coagulative necrosis of mucosa with haemorrhages and Destruction of epithelial cells (H&E, 100x).



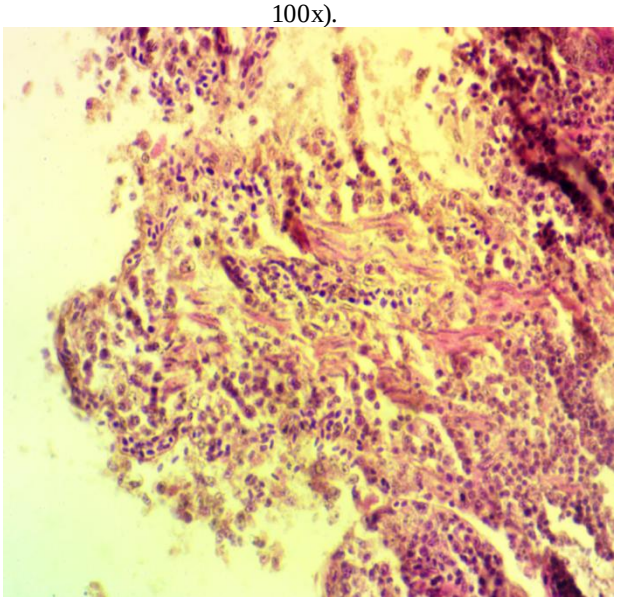


Fig.3:-Infiltration of mononuclear cells in mucosa and sub-mucosa (H&E: 100x).

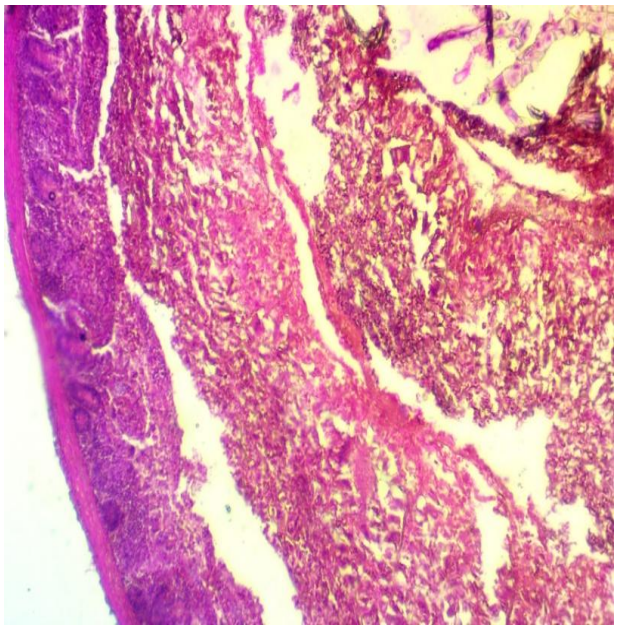


Fig.5.Psuedo membrane formation and Shortenning of villi (H&E 40x).

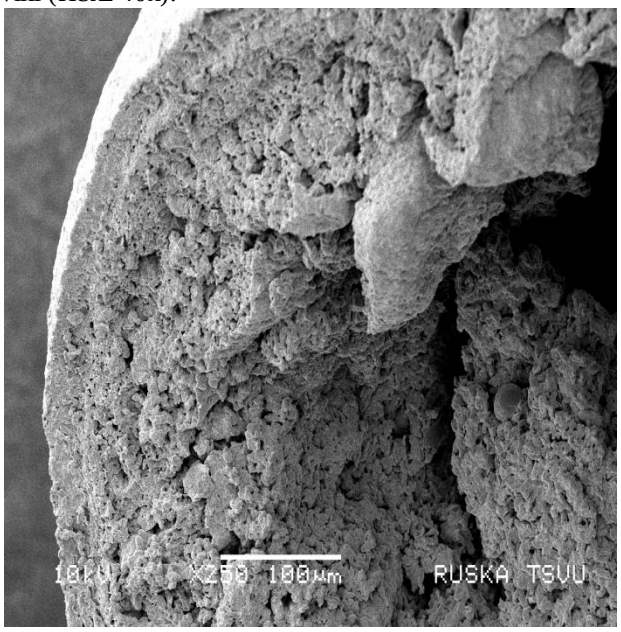


Fig.7. SEM of duodenum showing denudation and distortion of villi

Fig.4:-Sloughing of villi with cellular infiltration (H&E, 400x).

Fig.6. Anaerobic agar revealed black colonies

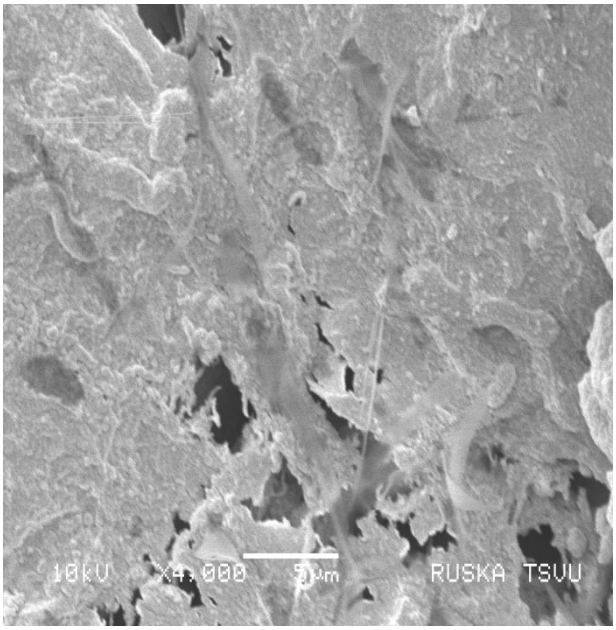


Fig.8.Showing severe necrosis of villi.

Acknowledgements:-

The authors are thankful to P.V.NarsimharaoTelangana Veterinary University, Hyderabad for providing facilities to carry out this work.

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