



ISSN (E): 2277- 7695

ISSN (P): 2349-8242

NAAS Rating: 5.03

TPI 2019; 8(2): 316-317

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www.thepharmajournal.com

Received: 01-12-2018

Accepted: 05-01-2019

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Occurrence of salt toxicosis in broiler chicken

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Abstract

Salt (*Sodium chloride*) is one of the major component of feed for the normal maintenance of biological processes. But excessive doses of salt can cause toxic effects in chickens. Salt poisoning was occurred in a shed of 320 broiler chickens. Exhibition of nervous symptoms started by the end of second week and continued till sixth week. At the end of sixth week, the total mortality was 256 (80%). History of feed formulation revealed that there was 50% replacement of salt with sodium bicarbonate which could be resulted this condition due to imbalance of these components. Gross examination revealed that there was severe ascites, hydropericardium, and congestion of heart, liver, kidney and intestine. The main lesions in most of the carcasses were edematous swelling of testes with severe congestion and testes appeared transparent. Congestion of brain was also noticed in most of the birds. Microscopically, section of testes showed severe, dilatation as well as rupture of seminiferous tubules, flattening of epithelium and thickening of interstitial tissue with mononuclear cell infiltration. Section of brain revealed severe vascular congestion. Section of liver and kidneys showed degenerative changes particularly around blood vessels with severe vascular congestion.

Keywords: broiler, brain, histopathology, salt toxicity, testes

Introduction

Salt intoxication may occur in any animal species and studies have been carried out to determine the salt toxic levels in chickens, turkeys, ducks and pigeons [1]. During the last 40-50 years the poultry industry has developed from a primitive rural farming setup to mass production industry with computerized controlled environmental conditions. The advance in poultry farming and production involved vast technological developments of the feed mills, feed production and quality control systems. Salt (*Sodium chloride*) is one of the major component of feed for the normal maintenance of biological processes. But excessive doses of salt can cause toxic effects in chickens. Salt intoxication reports are very rare and salt intoxication presents the same clinical and pathological findings of other sodium related compounds such as sodium iodide, sodium bicarbonate as reported by Scrivner in 1946 [2]. Despite all this technological amenities, a relatively extensive salt/sodium intoxication incident involving several broiler farms.

History and Clinical Signs

Salt poisoning was occurred in a shed of 320 broiler chickens. Exhibition of nervous symptoms started by the end of second week and continued till sixth week. There was increased thirst, excessive oral secretion, dull, depressed and restlessness. At the end of sixth week, the total mortality was 256 (80%). History of feed formulation revealed that there was 50% replacement of salt with sodium bicarbonate which could be resulted this condition due to imbalance of these components.

Results and Discussion

Gross examination revealed that there was severe ascites, hydro-pericardium and congestion of heart, liver, kidney (Fig.2) and intestine. The main lesions in most of the carcasses were edematous swelling of testes (Fig.1) with severe congestion and testes appeared transparent. Congestion of brain was also noticed in most of the birds. Microscopically, section of testes showed severe, dilatation as well as rupture of seminiferous tubules, flattening of epithelium and thickening of interstitial tissue with mononuclear cell infiltration (Fig.3). Section of brain revealed severe vascular congestion (Fig.4). Section of liver and kidneys showed degenerative changes particularly around blood vessels with severe vascular congestion.

These findings are in accordance with the previous observations [2, 3 & 4].

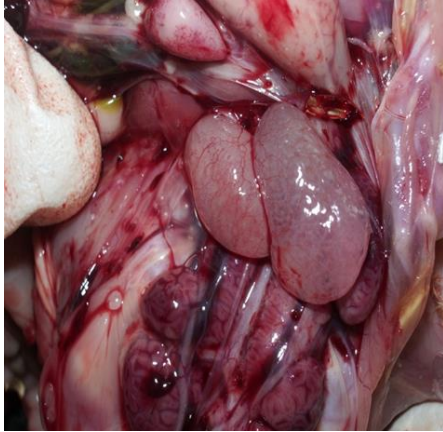


Fig 1: Edematous swelling of testes with severe congestion and testes appeared transparent



Fig 2: Congestion and edematous swelling of kidneys

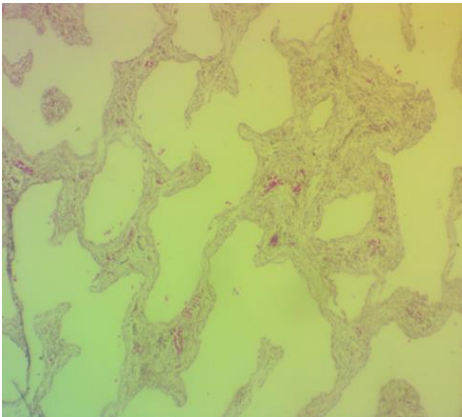


Fig 3: Severe, dilatation as well as rupture of seminiferous tubules, flattening of epithelium and thickening of interstitial tissue.H&E.10X

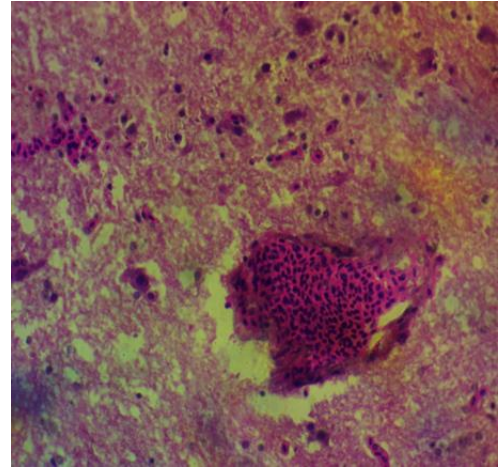


Fig 4: Severe vascular congestion. H&E.40X

References

1. Peckam MC. Poisons and toxins. In Diseases of Poultry, Biester and Schwarte, 5thEdition. Iowa State University Press, 1967, 1212-1252.
2. Scrivner LH. Experimental edema and ascites in poults. JAV-MA. 1946; 108:85.
3. Dewar WA, Whitehead CC. Sodium supplementation of broiler rations. British Poultry Science. 1973; 14:315-18.
4. Dewar WA, Whitehead, CC, Siller WG. Effect of dietary sodium levels on the incidence of testicular cysts in the chick. British Poultry Science. 1972; 13:301-3.