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# TOXICOLOGICAL PATHOLOGY OF AFLATOXIN B1 IN LOCAL PIGEON MAINLY IN LIVER, KIDNEY AND HEART

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## ABSTRACT

The study was forty five birds divided into three groups, first group untreated control, second group low dose and third group high dose. Six weeks study of toxicological pathology of aflatoxin B1 in pigeon showed highly characteristic lesions in liver and kidney. In liver histopathologic lesion were consisting of congestion per portal fibrosis and inflammation, vacuolation of hepatocyte mainly centri-lobular and occasional parenchymal focci of inflammatory cells. In kidney the main histopathological changes were vacuolation of cortical tubules, areas of necrotic cortical tubules and sometimes presence of atrophic glomeruli. In heart main finding more intestinal odema and actopicadpose tissue between myocardial muscle cells.

**KEYWORDS:** Liver, Kidney, Heart, Aflatoxin B1and Histopathology.

## INTRODUCTION

Did Histopathology of liver affected with aflatoxin in broiler chicks. [2] studied aflatoxin in effecting broiler performance immunity and gastro intestinal tract. Aim of the study is to find the toxic effect of aflatoxin B2 poisoning histopathological on respiratory and nervous system.[3] effect of low level of aflatoxin on performance biochemical parameter and broiler liver tissue.[4 ]did effect of dilatory afladetox on performance in broiler.[5] did aflatoxin in poultry. [6] did overview of aflatoxicosis of poultry.[7] did biochemical and histopathological analysis of aflatoxins induced toxicity in liver and kidney of rat.[8] study the effect of aflatoxin and fumonisin B1 on blood biochemical parameters in broilers. [9] did biochemical and histopathological analysis of aflatoxicosis in growing hens fed with commercial poultry feed.[10] study histopathological changes in broiler chicken feed aflatoxin and cyclopiazonic acid. [11] studied histopathological alteration in

aflatoxicity and its amelioration with herbomineral toxin binder in broilers. [12] exposure of garden birds to aflatoxin in britin. Production of aflatoxin from as per gillusflavus and acute aflatoxicosis in young broiler chicks [13]. Interaction of aflatoxin and/or salmonella haardt on immunized pigeons [14]. [15] Studied the pathologic effect of low grade aflatoxicity in broilers.. [16] didhistopathological study of quails liver experimentally induced by aflatoxin. Aim of study is to find the toxicologic pathology effect of aflatoxin B1 on liver and kidney.

**Materials and Methods**

Forty fivebirds local breed divided in 3 equal groups (15bird on each group). First group untreated control, second group low dose and third group high dose. The experiment was done by dietary administration that the mixing aflatoxin B1 with diet as 6.5 ml of 1 ppm of aflatoxin B1 in 125 g of feed. While untreated control were feed only normal grains. The experiment was done for 8 weeks. After those birds were sacrificed, tissues were taken from several internal organs including liver, kidney and heart. Then tissue were fixed in 10% neutral buffered formalin after fixation samples of tissue were taken impeded in paraffin and then paraffin blocks were made cut on microtome at 5m then slides were made and stained with (H and E stain).

**Results**

Histopathological changes showed kidney with congestion, foci of inflammatory cells and vacuolation of cortical tubules (fig1), vacuolation of cortical tubules, glomerulus with congestion and some fluid in Bowman space(fig2). Atrophic glomerulus(fig3). In (fig4)dilated of cortical tubules, congestion with high cellularity. In(fig 5) liver with congestion and dilated portal vein with erythrocyte, congestion as were shown in (fig6) and congestion, dilated sinusoidin(fig 7). dilated portal vein in( fig 8), liver with portal vein with dilatation and filled with erythrocytes in( fig 9),heart with normalin( fig 10) and pericardium with adipose tissue, coronary arteries, interstitialedema between myocardial muscles cells and congestion in fig (11) and heart with interstitialede main (fig 12 and fig 13)and interstitial edema and foci of inflammatory cells in (fig 14 and fig 15)and pulmonary artery and ectopic adipose tissue between muscle cells(fig 16).

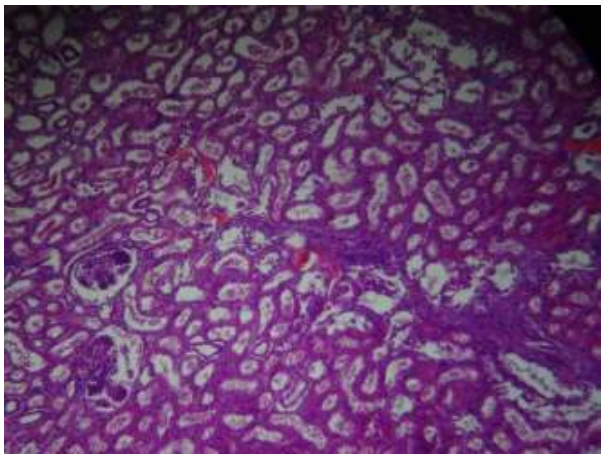

Fig 1: Kidney with congestion, foci of inflammatory cells and vacuolation of cortical tubules (10x).

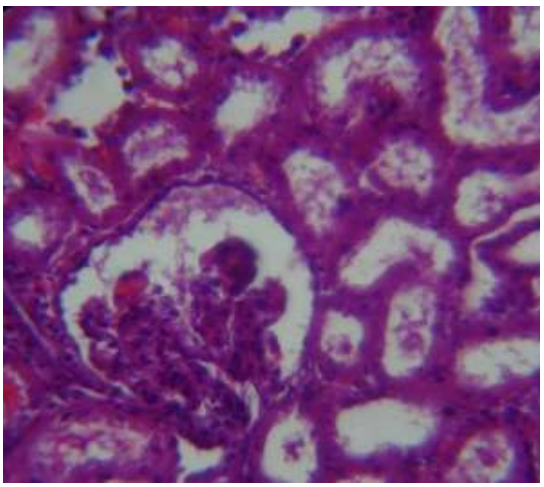

Fig 2: Kidney with vacuolation of cortical tubules, glomerulus with congestion and some fluid in Bowman space (40x)

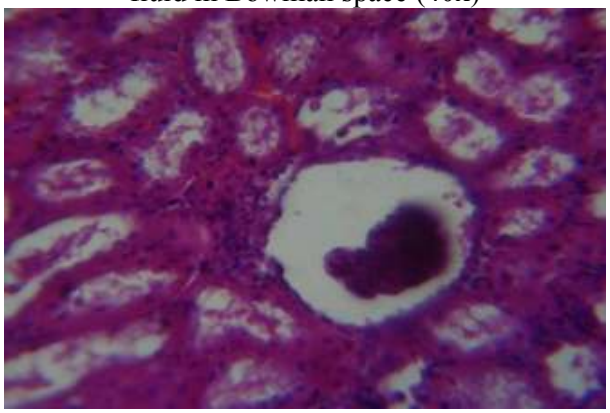

Fig 3: Kidney with atrophic glomerulus (40x)

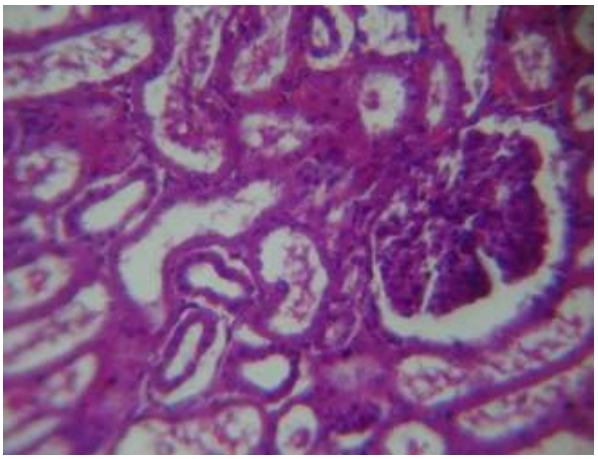

Fig 4: Kidney with dilated of cortical tubules,congestion with high cellularity (40x)

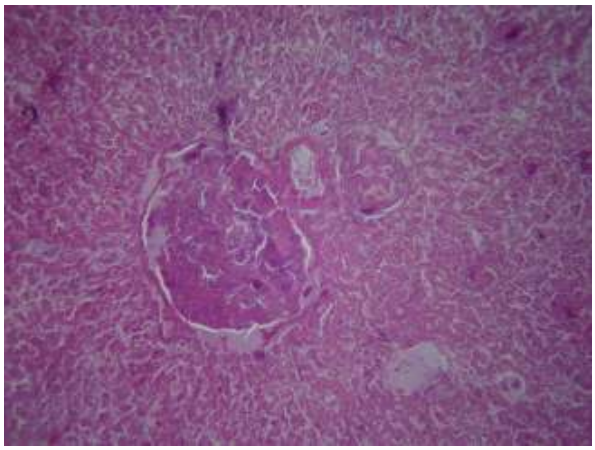

Fig 5: Liver with congestion and dilated portal vein with erythrocyte(10x)

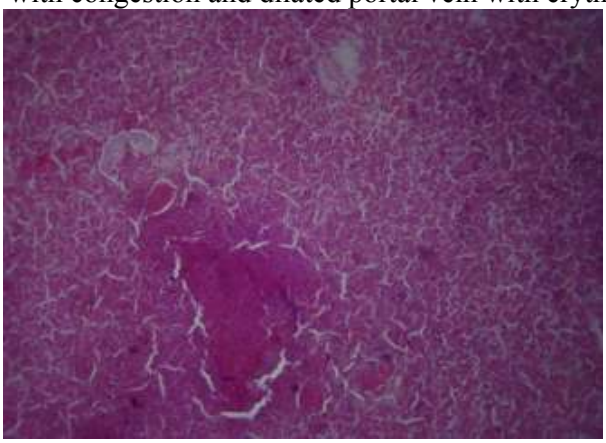

Fig 6: Liver with congestion 10x)

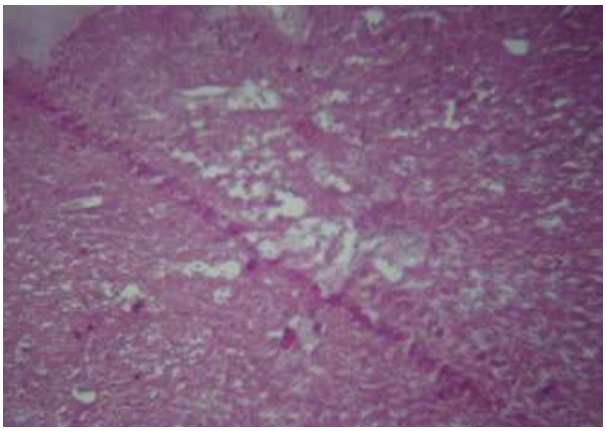

Fig 7:Liver with congestion, dilated sinsoid (10x).

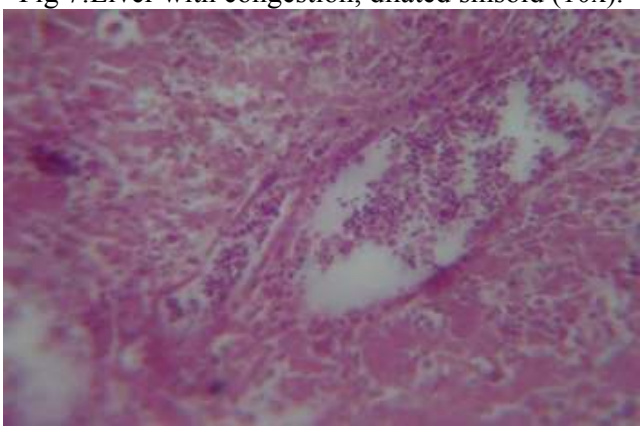

Fig 8: Liver with dilated portal vein ( 10x)

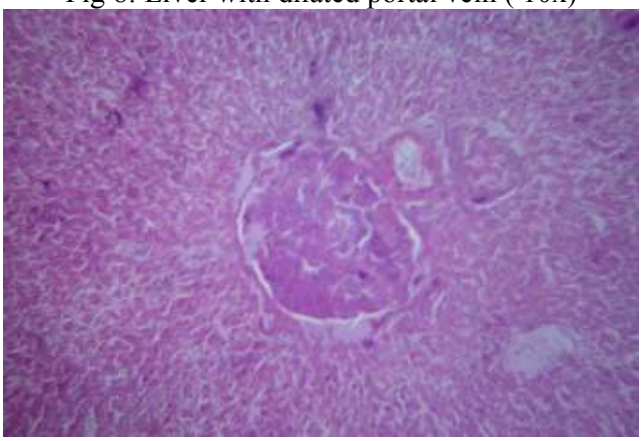

Fig 9:Liver with portal vein with dilatation and filled with erythrocytes( 10x),

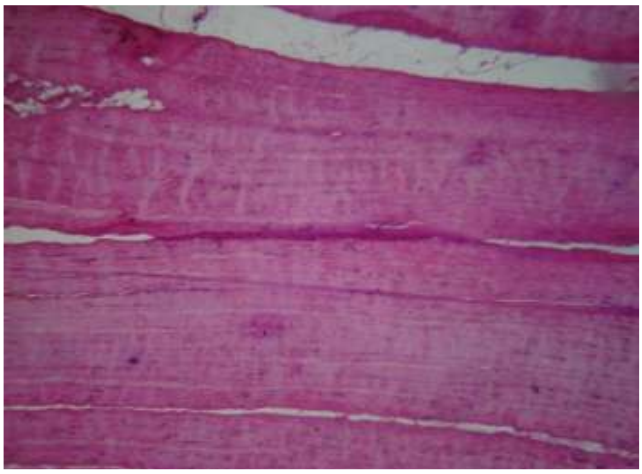

Fig 10: Heart with normal (10x)

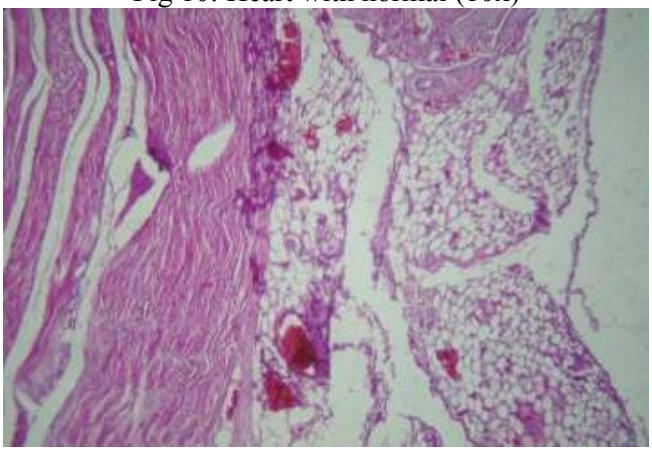

Fig 11:Heart with pericardium with adipose tissue, coronary arteries, interstasialodema between myocardial muscles cells and congestion (10x)

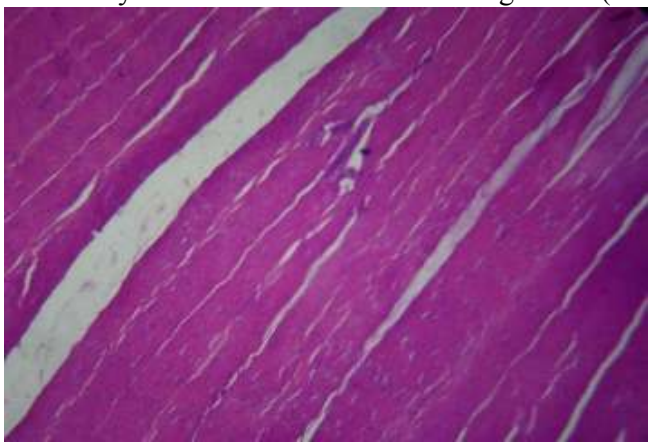

Fig 12: Heart with interstatialodema(10x)

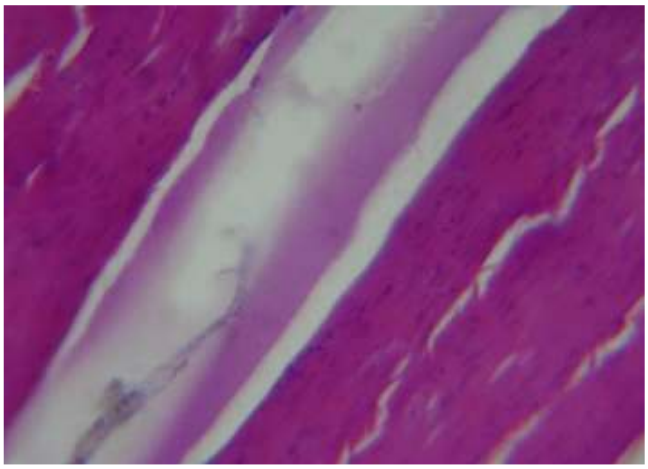

Fig 13: Heart with interstatialodema(40x)

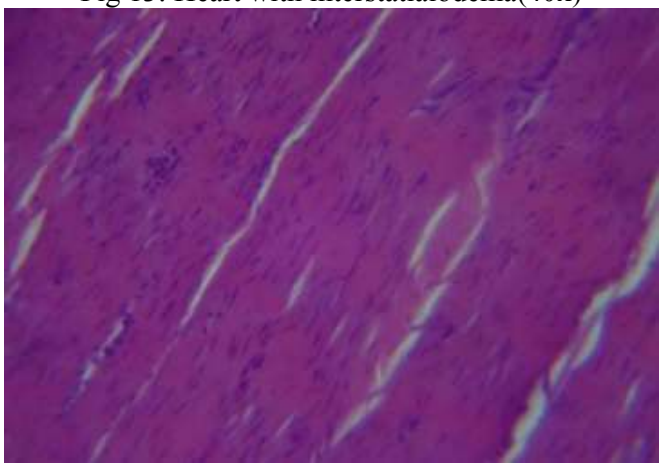

Fig 14: Heart with interstatialodema and focci of inflammatory cells (10x)

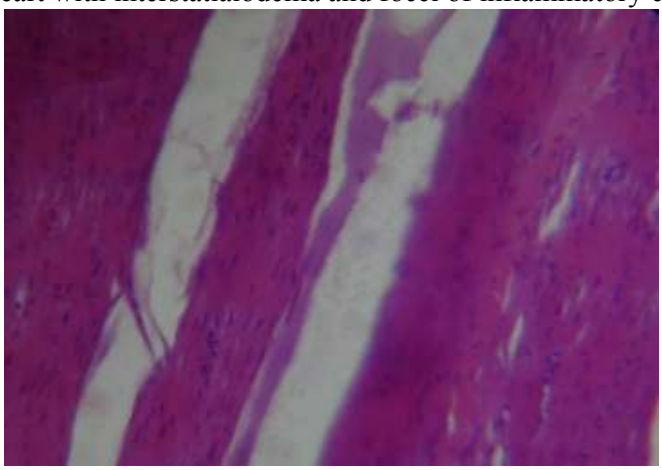

Fig 15: Heart with interstatialodema and focci of inflammatory cells (40x)

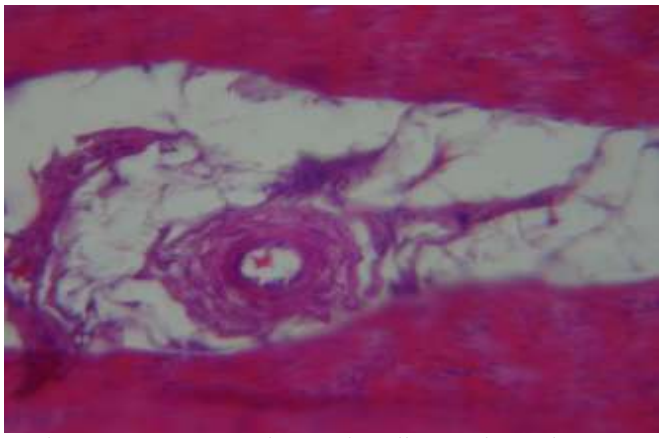

Fig 16: Heart with pulmonary artery and actopic adipose tissue between muscle cells (40x)

**Discussion**

[1]in his histopathology of liver affected with aflatoxin in broiler chicks reported hyper plasia, congestion, necrosis, serosis and accumulation red blood cells and inflammatory cells around the central vein, the present study also found histopathological changes in the liver but mainly as centi lobular vacuolation of hepatocyte, periportal fibrosis and foci inflammatory cells.[2] studied performance immunity and gastro intestinal tract effected by aflatoxin in broiler. The present paper reported his to pathological changes in liver and kidney induced by aflatoxin B1 in pigeon.[3] studied biochemical effect of aflatoxin B1 in broiler liver tissue and reported microscopic liver changes. The associated with accumulation of fat vacuole .[4]studied the histopathological changes induced by aflatoxin B1 and reported vacular degeneration of hepatocyte. The present paper also reported histopathological changes as centri lobular vacuolation of hepatocyte and peri portal fibrosis induced by aflatoxin B1 in pigeon. The present paper also found histopathological lesion in the liver as vacuolation in hepatocyte induced by aflatoxin B1 in pigeon.[5] studiedtoxicologic metabolism and prevention of aflatoxin B1 in poultry. The present paper did toxicological pathology on liver and kidney induced by aflatoxin B1 in pigeons.[6] did overview ofaflatoxicosisof poultry. The present study the hepatic lesions of liver and kidney induced by aflatoxinB1 in pigeons.[7] studied biochemical and histopathological changes in liver and kidney of rat induced by aflatoxin, The present research topic also found histopathological changes in liver and kidney in pigeon fed with aflatoxin.[8] showed that aflatoxin B1can have blood biochemical changes, the present study was done mainly on histopathological changes induced by aflatoxin B1.[9] found changes in serum protein, cholesterol and liver enzymes. Histopathological they found lesion in vital organs such as gizzard, liver and kidney. In gizzard there was erosion and ulceration. The present study was mainly on pathological

lesion in liver and kidney. [10] reported histopathological changes in liver and kidney, the present study also found histopathological lesions in liver and kidney [11] found microscopic changes in liver as congestion and vacuolation of hepatocytes and renal tubular necrosis. the present paper also found histopathological changes such as vacuolation of hepatocyte and necrotic cortical tubules in the kidney in bird feed with aflatoxin B1.[12] studied the exposure of garden birds toaflatoxin in britin and reported hepatic lesion induced by aflatoxin. The present paper also found liver lesion induced by aflatoxin B1 in pigeons.[13] in this study onaflatoxins from aspergilla's flavus found pathological lesions in liver and kidney. The present paper studied the histopathological lesion of aflatoxin B1 and found changes in liver and kidney.[14] studied the immune reaction toaflatoxin and /or salmonella. The present paper did mainly on histopathologicalstudy on liver and kidney intoxicated by aflatoxin B1. [15] found histopathological changes in the liver and kidney, the present paper was also studied the pathological lesion induced by aflatoxin B1 in liver and kidney.[16] found histopathological lesion inliver of quails induced by aflatoxin. The present paper also found hepatic lesionsin birds induced by aflatoxinB1.

## Conclusions

Result of the toxicity study showed that pigeons can be model to study the toxicity of aflatoxin B1.

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