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INTERSTITIAL RENAL NECROSIS SYNDROM OF CALVES

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Short communication

SUMMARY

Interstitial renal necrosis syndrom (IRNS) was diagnosed in calves sloughtered in Mosul sloughter house. Gross and microscopical picture of 33 affected animals were described. The lesions were identified according topathomorpholgy of tissue reaction. Two patterns of tissue rections were observed. The lesions of the first pattern showed grossly an oval, greyish white translucent nodules on the surface of kidney. Microscopically, cells like lymphocytes and few plasma cells were aggregated in the interstitial tissue. The lesions of the second pattern comprised grossly a milliary yellowish-white nodules on the surface of the kidney and on cut sectionforming extention in the depth of the renal cortex. Microscopically, the infiltrated cells were mainly neutrophils, macrophages and few lymphocytes, the possible causes of this syndrom was discussed.

INTRODUCTION

Kidney diseases in ruminants are usually caused by biological agents (1). Interstitial nephritis in cattle is a common disease which represent a high percentages (2). Leptospira was detected in such conditions from kidney tissue sections in cattle and goats (3). Kidney lesions (48%) which showed grossly white focal areas in calves and buffalloes aged 12-18 months were found to be caused by Eschericia coli infection (4). Kidney affections in ruminants could occures in the course of certain infections diseases like leptospira and malignant cattarhal fever and theileriosis (5,6). The present work try to shed some light on a renal syndrom which has been commonly seen in calves at Mosul area.

MATERIALS AND METOHDS

Kidney of 33 affected one year old native breed calves of both sexes were collected during slaughtering through one year. Samples for tissue sections were fixed in 10% formalin and cut sections prepared for histopathology examination. Certain special stains were applied to tissue sections for leptospira demonstration (7).

RESULTS AND DISCUSSION

Pathology:

Two patterns of tissue reations were identified, one is focal the other is diffuse. The gross pathology of the first pattern which diagnosed in (12) cases seen as focal, greyish nodules 1-8 mm in diameter distributed over the cortex at both kidneys (Fig.1). Kidney cut section showed a pale necrosed

area starting from the cortical surface extending to the medulla. Microscopically, the tissue areas affected were either small foci or large cellular patches which were likely to be around glomeruli infiltrating the interstitium and perivascullery the cells were mainly lymphocytes and plasma cells (Fig.2). Periglomerular necrosis and intiation of fibrosis was evident. Renal tubules were dilated and the lining epithelium showed degenerative and necrotic changes. Spiral shaped filamentous organism in clumps or slightly were seen in the tubular lumens in 3 cases after staining sections with silver inpregnation method of levaditie. The organism did not seen in the interstitial spaces or in the necrotic inflammatory exudate. The gross pathology of the second pattern which has been diagnosed in (21) cases was confined to the whole cortical surface of both kidneys which was seeded with milliary yellowish-white slightly raised areas which contrasted with the surrounding hypereimic tissue. The cut surface showed large areas of the same consistancy extended toward the medulla. Microscopically, lesion confined to glomerular and tubuler tissue causing necrosis and atrophy. Polymorpho nuclear leucocytes and macrophages were the most predominant inflammatory cells. Cellular casts appeared in the collecting tubules of the affected nephrons. Silver impregnation method applied to tissue sections revealed no spiral form organism in tissue.

Microbiology:

No significant isolates of bacteria were identified from tissue of 3 samples belonged to cases of the first pattern of tissue reaction, while five samples from cases of the second

pattern of tissue reaction showed pure E. coli isolates. Nevertheless attempts were not made to isolate leptospira organism.

The tissue reaction patterns in this syndrom was mentioned in certain causal bacterial organism like E. coli and leptospira infection and in the infection with the protozoia parasite, theileria spp. the nature of the non-suppurative interstitial reaction of the kidney were uncommon lesion in large domestic animals.

Figure. 1: Showing grayish nodules distributed over the cortex of both kidneys.

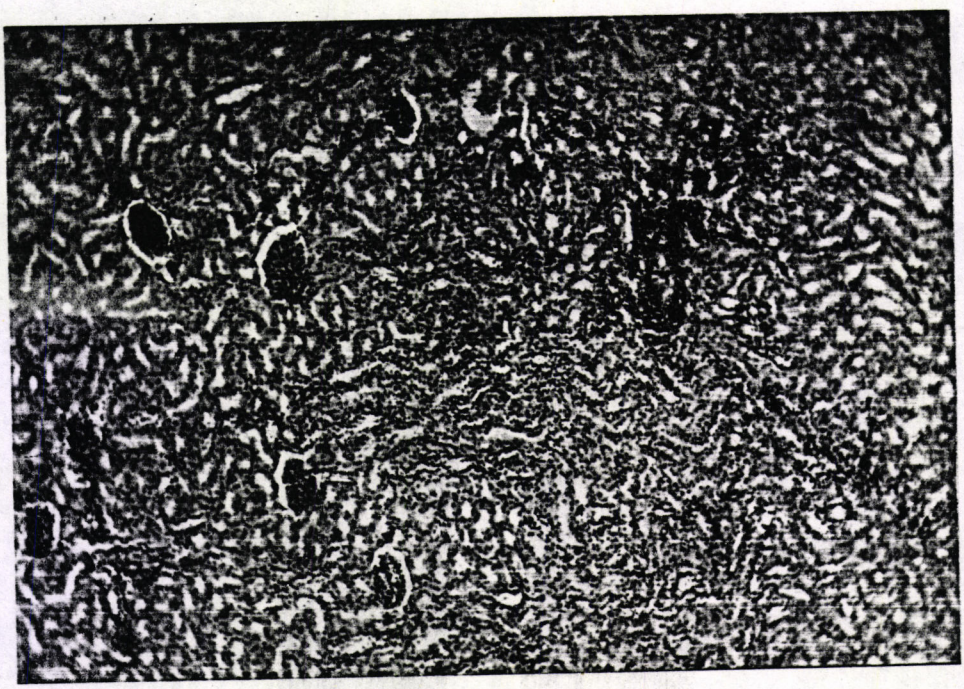

Figure. 2: Showing small and large areas of cellular patches infiltrating the interstitium, the cells were mainly lymphocytes and plasma cells. (H & E stain 150 X).

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متلازمة نخر الخلية الخلالي في العجول

عماد إبراهيم السلطان ، صموئيل اوشعنا يوخنا ، هناء خليل أسماعيل
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ملاحظات قصيرة

الخلاصة

تم تشخيص ووصف متلازمة نخر الكليه الخلالي في 33 عجلا مذبوحا في مجزرة الموصل. لوحظ وجود مظهران من هذه المتلازمة تبعا لما اظهرت من آفات مرضيه عيانيه ونسيجيه تميزت الآفات في المظهر الأول من هذه المتلازمه عيانيا بوجود مقيدات رماديه إلى بيضاء اللون شفافه وذات شكل بيضوي بارزه على سطح الكليه ، وومجهريا بارتشاح اعداد كبيره من الخلايا اللمفيه والبلازميه في النسيج الخلالي للكليه ، اما المظهر الثاني للمتلازمه فقد تميز عيانيا بوجود مقيدات دخنيه صفراء إلى بيضاء اللون على سطح الكليه وفي اعماق متفاوته من القشره. مجهريا لوحظ ارتشاح خلايا العدلات والبلعمات والخلايا اللمفيه. وقد تم التطرق إلى العوامل المسببه لهذه المتلازمه أيضا.