INTERSTITIAL RENAL NECROSIS SYNDROM
OF CALVES

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Short communication

SUMMARY

Interstitial renal necrosis syndrome (IRNS) was
diagnosed in calves slaughtered in Mosul slaughter house.
Gross and microscopical picture of 33 affected animals were
described. The lesions were identified according
topathomorpholgy of tissue reaction. Two patterns of tissue
reactions 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 section forming 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.

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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 buffaloes aged 12-18 months were found to be caused by Eschericia coli infection (4). Kidney affections in ruminants could occurs in the course of certain infections diseases like leptospira and malignant catarhal 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 METOHD

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 reactions 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 perivascularly 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 impregnation 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).
REFERENCES


متلازمة نخر الخلية الخلاقي في العجول

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ملاحظات قصيرة

الخلاصة

تم تشخيص ووصف متلازمة نخر الكليه الخلاقي في 33 عجلا مذبوحا في مجزرة الموصل. لوحظ وجود مظهران من هذه المتلازمة تبعا لما اظهرته من آفات مرضية عيانية ونسيجية تميزت الأفات في المظهر الأول من هذه المتلازمة عيانيا بوجود مقيدات رمادية إلى بيضاء اللون شفافه وذات شكل بيضوي بارز على سطح الكليه، وومجيريا بارتشح اعداد كبير من الخلايا اللمفية والبلازمية في النسيج الخلالي لكليه، أما المظهر الثاني للمتلازمة فقد تميز عيانيا بوجود مقيدات دخنية صفراء إلى بيضاء اللون على سطح الكليه وفي اعماق متلاوته من القشرة، مجيريا لوحظ ارتشاح خلايا العدائل والبلعمات والخلايا اللمفية. وقد تم التطرق إلى العوامل المسببة لهذه المتلازمة أيضا.