INTERSTITIAL NEPHRITIS IN SHEEP OF RAJASTHAN

Manisha Mathur and Hemant Dadhich

Department of Veterinary Pathology,
College of Veterinary and Animal Science, Bikaner - 334 001, India

ABSTRACT

To study incidence and histopathology of interstitial nephritis in sheep of Rajasthan 223 affected kidney samples were taken. This condition was observed in 20.17% samples. Diffuse interstitial nephritis was observed in 8.96% cases. Grossly, kidneys were enlarged with red and gray mottling. Focal interstitial nephritis was observed in 11.21% cases. Grossly, kidneys showed grayish white nodules.

Among animals interstitial nephritis is the most common type of nephritis. In dogs it is an important disease. In sheep it occurs as a result of sheep pox. It can be diffused or focal. Depending on the insult and its duration the lesion may progress to chronic interstitial nephritis characterized by marked interstitial fibrosis, absence of tubules and dilated tubules.

Kidneys of 1284 sheep carcasses, irrespective of sex, age group and breed were examined grossly and 223 specimens showing frank macroscopic lesions were collected for histopathological examination. The specimens were preserved in 10 per cent formal saline and processed mechanically for paraffin embedding by acetone and benzene technique (Lillie, 1965). Sections of 4-6 micron thickness were cut and stained as a routine with Haematoxylin and Eosin.

Interstitial nephritis was observed in 45 (20.17 per cent) out of 223 kidney samples showing frank lesions.

Diffuse interstitial nephritis: This condition was observed in 20 (8.96 per cent) cases. Grossly, kidneys were enlarged with distinct red and gray mottling on the capsular surface which stripped off clearly. Red and gray mottling was observed on the cortical surface. In some cases, the kidneys were shrunken, pale gray, firm and cut with difficulty. In such cases the capsule was thickened and adherent to the cortex (Fig. 1).

Microscopically, in some cases, edema and infiltration of leucocytes, mainly lymphocytes along with a few granulocytes were seen in the intertubular space. The tubules were replaced by heavy infiltration of leucocytes. The leucocytic infiltration had also damaged the glomeruli at places. In some cases, the capsule was thickened and renal parenchyma, both in the cortex and medulla, was replaced by collagenous connective tissue containing mononuclears. Some of the remaining tubules were dilated, hyper-trophic and contained granular/hyaline casts. The glomeruli had developed fibrous thickening around Bowman's capsule. The capsular space was dilated having shrunken or dilated glomerular tufts. The above findings corroborate with those of Bourne (1967) and Sastry (1983).

Focal interstitial nephritis: This condition was recorded in 25 (11.21 per cent) cases. A relatively higher incidence was reported by Babu and Paliwal (1988) as 37.5 per cent. Grossly, affected kidney showed grayish white nodules, projecting from the surface. On the cut surface the nodules were wedge shaped. The above findings are in accordance with Burdin et al. (1958) and Sastry (1983).

Microscopically, the interstitial tissue was edematous and infiltrated by lympho-cytes and plasma cells. In some cases, proliferation of fibrous was seen in the cortex replacing the renal parenchyma. Some of the tubules were
Fig. 1. Photograph of kidney affected with diffused interstitial nephritis showing uneven surface and thick capsule, adherent to cortex.

Fig. 2. Photomicrograph showing replacement of kidney Parenchyma in the cortex and medulla by collagenous connective tissue (H & E 20x).

Fig. 3. Photograph showing uneven surface of kidney due to formation of scars.

Fig. 4. Photomicrograph showing replacement of Parenchyma by fibrous tissue in focal areas (H & E 20x).

seen dilated, containing proteinaceous cast or hyaline material. Almost similar findings were described by Sastry (1983).

REFERENCES


