

Summary

The present study aimed to determine the incidence of pneumonia in relation to kidney affections in camel. For this purpose, 100 cases of pneumonia and their associated right and left kidneys of the same animal were collected. These cases were collected from Kerdasa abattoir-Giza governorate and Beni-Suef abattoir. These specimens were subjected to gross macroscopic and histopathological studies: histopathological sections were prepared and stained by routine haematoxylin and eosin stain and other special stains confirmed the different pathological lesions. In addition, histomorphometric analysis were carried out on sections of the lung and data were subjected to statistical analysis.

In our collected samples, focal centriacinar and centrilobular alveolar emphysema were common. In many cases, the lung showed features of pressure collapse (atelectasis) which was specially seen in the neighbourhood of parasitic (hydatid) cyst and emphysematous tissue>

Both acute and chronic bronchitis and bronchiolitis were observed in the majority of our materials.

On the basis of histopathological findings the pneumonic cases were classified into the following:

- 1- Interstitial pneumonia: two types were recognized under this category:
 - a- Interstitial lymphocytic pneumonia which is characterized by thickening of the interalveolar septa due to infiltration of a large numbers of mononuclear cells mainly lymphocytes.
 - b- Interstitial histiocytic pneumonia which is characterized by thickening of interalveolar septa as a result of increased proliferation of large, polyhedral macrophage cells.
 - c- Fibrinous pneumonia, different stages of this type of pneumonia were recognized and were identified, as in other animal species, into:

- Stage of congestion.
- Stage of red hepatisation.
- Transition stage (stage between red and grey hepatisation).
- Stage of grey hepatisation.

Stage of resolution.

- d- Suppurative pneumonia, observed only in two cases which were characterized by a heavy infiltration of polymorph nuclear cells (neutrophils) to the alveolar wall, the alveolar lumens were obliterated with purulent exudate formed of desquamated epithelial cells and neutrophil; there were no prominent fibrin threads in the lesion> Also suppurative bronchitis and bronchiolitis was present
- e- Granulomatous pneumonia (suppurative granulomatous pneumonia) was observed only in one case, mycotic infections appeared to be responsible for this reaction. In this granuloma, branching hyphae showing transverse septa invaded the area, necrotic structureless debris was scattered in this reactive mass. All lung tissue element, i.e, alveoli, bronchi or bronchioles as well as blood vessels were totally destructed and disappeared.

The sequelae of many inflammatory reactions appeared to be the lung fibrosis which constitute about (13%) of the total collected specimens.

Hydatidiosis appeared to be the most encountered lesion in the collected lung from camels (25%). The average diameter of the cyst ranged from 3 to 10 centimeters in cross section. The lesions revealed the presence of hydatid fluid with or without formation of hydatid sand according to fertility of the cyst. The cysts were embedded in the lung with no predilection with respect to anatomical structure. In the present study, histomorphometric analysis revealed that parasitic cysts play an important role in the development of both atelectasis and emphysema in pulmonary tissue.

Pneumoconiosis was also found and characterized by deposition of fine particles in the alveolar septa. One case showed large inhaled organic particle most probably of plant origin in the lung tissue. Contrary to what has been expected, pneumoconiosis were of low incidence, a matter which may be related to the long bronchial tree and anatomical structure of the nostrils.

Tumour of the lung appeared to be rare in camels; only a single case of bronchoalveolar adenocarcinoma was seen in the lung tissue.

Various pulmonary vascular affections were observed in the form of haemorrhage, oedema, microscopic thrombi, and emboli and features of pulmonary hypertension was also present in our collected specimens of the lung. These circulatory disturbances may have a relationship to the proper function of the kidney.

The most common lesions in the kidney of our camels consisted of glomerulonephrosis (40.76%) of variable degree of severity. In these cases, there was infiltration and accumulation of eosinophilic material in Bowman's space, the infiltrating albumin-rich material may appear vacuolated in areas in which the cell structure of the tuft lobules were destroyed and disappeared.

Inflammatory changes were are in the kidney of camels examined; however, focal interstitial-nephritis was seen in 3 cases in which there was microscopic infiltration of mononuclear cells.

A picture of fatty change was seen only in one case in the epithelial cells lining of the renal tubules and also in the glomeruli suffering from glomerulonephrosis. Tubular changes appeared to be secondary to glomerular affections.

According to our results, we can conclude that the occurrence of pathological changes in the kidney of pneumonic animals (approximately 40%) may indicate the intimate relationship between pneumonia and renal affections in this animal species.