

# Lymphoid interstitial pneumonia of snow leopard case report

## Full Text:

Lymphoid Interstitial Pneumonia (LIP) is a rare chronic non-phogenetic inflammation in snow leopard which is difficult to be cured and can lead to death. In view of a lack of any reports in the literature we would like to report it as follows.

## BRIEF CLINICAL HISTORY

A snow leopard male, born in 1983 and transferred that year to Chongqing Zoo, Sichuan Province from Xining Zoo, Qinghai Province, was raised at Chongqing and grew to be physically well developed. In the spring of 1989 it suffered from pneumonia and recovered from the illness soon after treatment. On November 23, 1989 it displayed respiratory symptoms such as tachypnea and asthmatic breath, but again recovered from this illness after antibiotic treatment. On April 10, 1990 it again presented the symptoms of listlessness and asthmatic breath with noticeable wheezing, and it failed to recover after anti-inflammatory treatment. On April 25, 1990 the snow leopard, with tachypnea and cyanosis on its lips and tongue, was weak from refusing to eat and finally died on May 11, 1991.

## PATHOLOGICAL FINDINGS AND DIAGNOSIS

The dead snow leopard, with cyanosis on its lips and tongue, was found to have been generally physically well. It had 1.5 cm thick subcutaneous fat, mild dilatation in the chambers of its heart and mild cloudy swelling in its cardiac muscle cells. The liver of the snow leopard was moderately swollen, with taught integument and mild fatty degeneration in its liver cells. There was outstanding ecchymosis in the pancreas, the integument of the pancreas had a few petechiae but no dominant changes histologically. The appearance of the lungs was swollen and tough. The integument was very taught. Characteristically, the lungs were scattered with multiple pale miliary tubercles and no effusion in the bronchial lumen. On the cut surfaces the outline of alveoli was not clear and was fully distributed with miliary tubercles.

Microscopically, the alveolar wall was found to have thickened and formed discrete nodules. These nodules were composed of mature lymphocytic and plasma cells without germinal centers (Figure 1). In the alveolar wall the blood capillaries became smaller and the number of blood capillaries was diminished. The interstitium of alveolar walls and connective tissue surrounding small vessels were heavily infiltrated by lymphocytes and plasma cells (Figure 2).

The diagnosis was as follows: lymphoid interstitial pneumonia, congestion in the internal organs, fatty degeneration in the liver cells and cloudy swelling of cardiac muscle.

## DISCUSSION

The lymphoid interstitial pneumonia was a unique chronic inflammation. The reason why the snow leopard was apt to suffer from the pneumonia was that the animal had been living in the cage all the time, lacking fresh air and sunshine, and was undergoing an infection during a sudden change in the weather. Specific characteristics of the case were as follows:

- 1) The snow leopard was apt to be ill mostly in the spring when changeable weather and humid weather conditions in Chongqing are associated attacks of respiratory tract disease.
- 2) Aggregation of the illness was related to relapses. In this case the snow leopard had relapses three times and finally died of respiratory failure and anoxia.
- 3) The clinical symptoms were mainly anoxia, consistent with the clinical manifestation of interstitial pneumonia.
- 4) Macroscopically, the lesion was similar to miliary pulmonary tuberculosis. Nevertheless, it was typical of the miliary tubercle consisting of lymph and plasmocyte and differential diagnosis of this disease should be made mainly between LIP and miliary pulmonary tuberculosis. The latter is characterized by Langhans' giant cells and epithelioid cells and caseous necrosis so it is not difficult to differentiate the two.

Various pathophysiological changes in general systems can occur during attack of the illness. It is important that effective antibiotic treatment be given for protection against secondary infection and sufficient oxygen supply and supporting treatment should be carried out without hesitation. Effective measures to prevent this disease are to improve the care of the animals and to facilitate the animals spending more time in the open air, especially during sudden changes in weather between winter and spring.

**FIGURE 1. Granular nodules appeared in lung tissue, the alveolar wall got thicker and emphysema was present in part of the lung.**

**FIGURE 2. Lymphocytes and plasma cells formed nodules and shuttle fiber cells increased.**