

ABSTRACT**STUDIES ON CEREBROSPINAL NEMATODIASIS IN
SHEEP AND GOATS IN SRI LANKA**

A study was undertaken to investigate the pathology and clinical manifestations of cerebrospinal nematodiasis (CSN) in sheep and goats in Sri Lanka. Out of a total of 175 goats and 32 sheep examined, most of the sheep (81.3%) and goats (94.9%) were found to have clinical signs suggestive of CSN. The remaining animals were diagnosed as cases of suppurative meningoencephalitis, encephalocoele, internal hydrocephalus, enterotoxaemia and viral encephalitis. The clinical history, and the findings of the general clinical examination and neurological examination were useful in the differentiation of CSN from the other neurological diseases. Clinical manifestations of most of the CSN cases were characterised by acute onset of the clinical signs including development of abnormal movements, e.g. ataxia, circling, tremor, and abnormal postures such as head tilt, torticollis and scoliosis. Different forms of paresis and paralysis, viz. paraparesis, tetraparesis, hemiparesis, paraplegia and tetraplegia accompanied with upper motor neuron (UMN) signs were commonly detected. The postural reactions and the local reflexes of the locomotor system and the body were often found to be defective. In most instances, the animals affected with CSN remained bright and alert with a normal appetite, and had a normal rectal temperature. Neurological findings of majority of the cases indicated a focal lesion in the spinal segments of T3-L3, C1-C6 or in the brain stem.

Findings of the examination of the CSF samples collected from clinically normal goats and those with CSN indicated that there is a tendency for the total cell count (6-512 cells/ μ l) and protein content (10.8-40.0 mg/dl) to increase and for the sodium content (61.2-93.0 mmol/l) to decrease in CSF of the diseased animals. Presence of eosinophils and neutrophils were also a notable feature of CSF from the animals with CSN.

The necropsy findings were without relevant significance in most of the CSN cases. However, characteristic histological lesions were consistently found in the CNS, mainly in the spinal cord, brain stem or in the cerebellum. The acute lesions were seen as irregularly distributed linear microcavities containing mainly the damaged nervous tissue and occasionally the causative nematode larva. In addition to the microcavitation, axonal swelling, central chromatolysis, perivascular cuffing and leptomeningitis were found in the late acute lesions. The cell infiltrates were composed of mononuclear inflammatory cells and eosinophils. The chronic CSN lesions appeared as irregularly distributed areas of encephalomalacia and/or myelomalacia containing a large number of gitter cells and some active astrocytes. Wallerian type degeneration which often led to spongiform change in the surrounding white matter was also seen. The animals with residual signs of CSN showed irregularly distributed astrocytic scars in the CNS.

Some of the cattle infected with setariasis where the adult worms were present in the peritoneal cavity had granulomatous lesions in the omentum, mesentery or in the liver. These lesions contained adult setarial worms at the centre and confined only to a small area of the affected tissue.