A retrospective study of neurological diseases diagnosed from January 1998 to April 2010 was conducted, with the objective of characterizing the clinical-pathologic condition caused by compressive lesion in the CNS of ruminants. In this period, 41 animals were admitted showing clinical signs compatible with CNS compressive lesions. Among these, 29 were bovines; 5 were bubalines; six were ovines, three males and one caprine. From the 41 animals studied, 24 were necropsied, one showed subarachnoid hematoma compressing the brain; another animal had an abscess compressing the encephalic trunk; another bovine had an abscess in the cerebellum; five had compressive lesions between C1 and C5, one between C6 and T2, three between T3 and L3 and one between L4 and S2; these lesions were caused by epidural abscesses (three animals), osteomyelitis (two animals), fracture (two animals) and vertebral malformation (one animal). From the four bubalines necropsied, three had compressive lesions between T3 and L3 and one between L4 and S2, caused by vertebral fractures. All six ovines were necropsied and one showed abscesses in the cranial floor, compressing the encephalic trunk; the others had medular compression, one in the C6-T2 segment, three from T3 to L3 and one from L4 to S2, where causes were epidural abscesses (three animals) and vertebral osteomyelitis (two animals). In the caprine there were abscesses in the brain. In 16 bovines necropy was not possible to be done; all presented clinical signs compatible with medular compression in C1 to C5 segments (2 animals), C6 to T2 (1 animal) and T3 to L3 (12 animals). In one non necropsied bubaline, symptoms were compatible with lesion in the T3 to L3 segments. In the necropsied animals, a correlation between clinical signs and lesion site was verified. The animals with cerebellum lesion showed hypermetria, loss of balance and intention tremors. Lesions in the brain caused depression, circular walking and pedalling movements. Medular lesions resulted in ataxia, paresis and flacid or spastic paralysis, postural alterations, increased or decreased spinal reflexes, or decreased cutaneous sensitivity. It was concluded that, in bubalines, the only cause of medular compression observed in this study was vertebral fracture due to phosphorus deficiency and, in the other species, the most important cause of CNS compression was abscess occurrence, mainly epidural abscesses.

**Keywords:** Neurological diseases, ruminants, Brazil.