

# SPINAL TRAUMA, COMMON KOEL (*Eudynamys scolopacea*) (CASE 1385.1)

## CASE HISTORY

Juvenile male common koel (*Eudynamys scolopacea*) admitted with leg paralysis. Died 5 days later.

## GROSS PATHOLOGY

**External findings:** No significant findings. There may be mild laxity of the thoracic spine - at the T2-3 level.

Hydration: fair, Muscle mass: mildly reduced

Fat deposits: absent

**Internal findings:** No significant findings. The gastrointestinal tract contains a small quantity of ingesta.

## HISTOPATHOLOGY

Lesions are not evident within the following tissues: kidney, small intestine, adrenal gland, pancreas, skeletal muscle, brain, spleen, proventriculus, small intestine.

**Liver :** Haemorrhage dissects the parenchyma focally.

**Spleen :** The splenic parenchyma contains scant lymphoid tissue. Perivascular reticuloendothelial cells are prominent. Eosinophilic fibres are scattered throughout the red pulp (fibrin)?

**Lung :** Focal haemorrhage is evident within the lung. Segmentally, bacterial colonies, fibrin, and necrosis replace much of the architecture of the air sac.

**Spinal column:** Sagittal section - thoraco-lumbar junction: The vertebral column is focally luxated and moderately displaced. Spicules of bone and haemorrhage are evident within the connective tissue surrounding the luxation. The dorsal portion of one vertebra focally impinges on the spinal cord. This section of the cord is markedly malacic. The normal architecture of this segment of cord has been disrupted due to the presence of increased quantities of connective tissue and large numbers of gitter cells. Caudal to the lesion, white matter tracts contain large numbers of dilated axons and digestion chambers.

**Caudal spinal cord:** White matter tracts, particularly within the ventral white matter, contain moderate numbers of dilated axonal chambers and a smaller number of digestion chambers. Astrocytes may have mildly increased quantities of cytoplasm.

## MORPHOLOGICAL DIAGNOSIS

Luxated thoraco-lumbar spine

Focal myelomalacia

Marked wallerian degeneration - caudal spinal cord

Pulmonary and hepatic haemorrhage

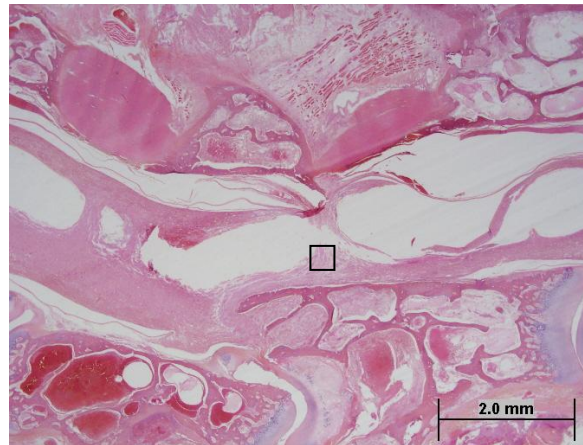


Fig 1 Luxation of vertebrae at thoraco-lumbar junction. H&E 2x

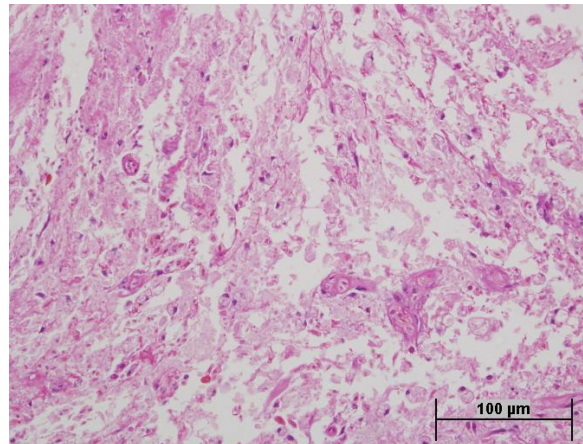


Fig 2. Spinal cord (Inset Fig1). Local response to trauma. Note disruption of normal architecture, prominence of gitter cells, and migration of fibroblasts into the area. H&E 40x

## COMMENTS

The bird most likely suffered severe blunt trauma to the chest, resulting in a luxation of the thoraco-lumbar spine. The sacrum and the thoracic vertebrae are fused in birds, thus, the T-L junction, a site of mobility, is prone to luxation. The spinal cord damage at the site of luxation is

sufficient to account for the bird's paralysis.

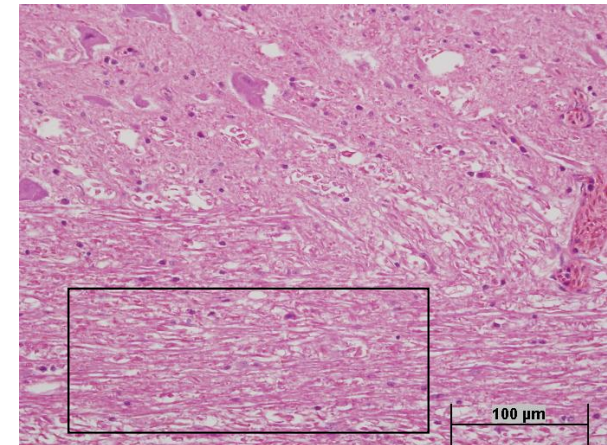


Fig 3. Spinal cord cranial to luxation. H&E 40x

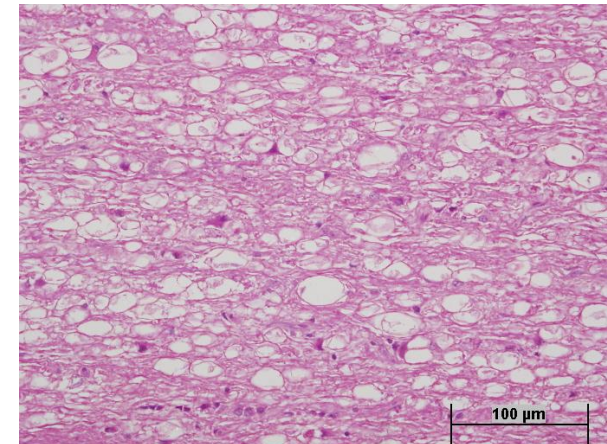


Fig 4. Spinal cord, white matter, caudal to luxation. Note dilated axonal chambers and some digestion chambers containing phagocytic cells. H&E 40x

## REFERENCES

A. BUSS, G. A. BROOK, B. KAKULAS, D. MARTIN, R. FRANZEN, J. SCHOENEN, J. NOTH AND A. B. SCHMITT. Gradual loss of myelin and formation of an astrocytic scar during Wallerian degeneration in the human spinal cord. *Brain*, 2004, 127(1): 34-44.