

## ABSTRACTS

### HIGH CERVICAL NEURINOMA. SPECIAL NEUROLOGIC AND RADIOLOGIC FEATURES

By W. S. FIELDS, K. J. ZÜLCH and V. MASLENIKOV

THE neurological and radiological symptoms in four cases of high cervical neurinoma are described. The important neurological symptoms are cervical or sub-occipital pain suggesting cervical spondylosis or intravertebral disc preceeding motor and sensory disturbances of the long tracts. Loss of power is usually noted in the lower extremities before involving the upper limbs. This is found particularly in tumours above the 5th cervical root. The radiological signs are an enlargement of the intravertebral foramen at 3C or below, and widening of the interlaminar space between atlas and axis if the 2nd cervical root is involved. A valuable method in determining the extent of the tumour is vertebral arteriography. The authors emphasise early diagnosis which facilitates the operative removal. The functional results after the removal of the tumour are usually satisfactory.

#### REFERENCE

*Neurochirurgie Band* (1972), 33, 89-102.

### THE MICRO VASCULATURE IN TRANSIENT TRAUMATIC PARAPLEGIA

By G. J. DOHRMANN, C. WAGNER and P. C. BUCY (Chicago)

FIFTEEN monkeys were subjected to spinal cord trauma (300 g. cm.) at levels of T10. After traumatising of one and five minutes the veins in the central grey showed engorgement, while the arterioles, capillaries and post-capillary venules were normal. After 15 minutes the venules showed breaking with open connection of the lumen to the perivascular space in the grey substance. Arterioles were normal. After one hour disruption of the glial membrane and extra exit of blood into the perivascular substance of the grey matter. Many capillaries had collapsed. There was swelling of astrocytes in the neighbourhood of the glial membrane. Focal increase of erythrocytes, especially in the central grey near to the post-capillary venules, while the arterioles still remained normal. After four hours there was a greatly increased collection of erythrocytes and the capillaries and post-capillary venules showed endothelial swelling in the grey and white substances. The arterial structure remained normal. The authors conclude that the mechanism of damage is produced (a) through perivascular haemorrhage and (b) later through ischaemic endothelial damage of the micro vasculature.

#### REFERENCE

*J. Neurosurg.* (1971), 35, 263-271.  
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## HISTOPATHOLOGY OF TRANSITORY TRAUMATIC PARAPLEGIA IN THE MONKEY

By F. C. WAGNER, P. C. BUCY, G. H. DOHRMANN (Chicago)

THE spinal cords of 25 monkeys were traumatised (300 g. cm.) at the level of T10 (Albin technique). After five minutes dilatation of the intact thin-walled vessels occurred especially in the central grey. After 15 minutes there were isolated rupture of these vessels with perivascular haemorrhages. After 30 minutes there were more marked perivascular haemorrhages and exudates especially, centrally and in the posterior horns. After one to four hours haemorrhages occurred in the whole grey substance; there was stasis and vascular wall degeneration. The neurons were normal after five minutes but after one to four hours showed loss of staining in the Nissl. picture (ghost-cells). The axons and myelin sheath showed vacuoles in the white substance; later the myelin sheath was difficult to stain and there was dilatation of the axons. The paraplegia should be transient as the changes are mainly in the grey but not in the white substance. The pathological changes in the grey substance can be due to increased lability of the veins within the grey resulting from the more dense localisation of the vessels in the grey matter or as a result of the mechanism of the trauma.

### REFERENCE

*J. Neurosurg.* (1971), 35, 272-276.

## MICROANGIOGRAPHIC STUDY OF EXPERIMENTAL SPINAL CORD INJURIES

By D. J. FAIRHOLM and J. M. TURNBULL

THE spinal cords of 34 rabbits and five dogs were traumatised with the Albin technique (200-300 g. cm.) and were examined after the trauma following injection of Barium emulsion followed by X-rays. The authors found two zones. 1. In the postero-central part of the spinal cord where the capillaries losing their blood conducting capabilities within the first four hours. After one hour changes of the neurones were found. 2. A zone around the first zone where neuronal and axonal degeneration were found while the capillaries were normal. Pericapillary haemorrhages which in the first zone were already great after 10 minutes are rare in the second zone. Therefore, the authors conclude that the conducting function of the capillaries remains always intact in zone two. Therefore, the degeneration of the neuronal structures either precedes the changes of the vessels or is independent of the destruction of the capillaries. The recovery of the damaged neurones and axons is based on the preserved microvasculature.

### REFERENCE

*J. Neurosurg.* (1971), 35, 277-286.

RECONSTRUCTION OF THE TRANSECTED SPINAL CORD:  
INHIBITIVE PROCEDURE FOR SCAR FORMATION  
IN THE INTER SPACE

By HIGUCHI H (Sendai)

EXPERIMENTS on 140 female dogs were carried out in which the spinal cord was resected by 2 mm. at the level of T12. The spinal cord was then enclosed by seven membranes of different material which were placed underneath the dura. Inhibition of scar formation was found more marked by the combination of nylon tissue with a high concentration of Chloroquin-ointment. In the group which was treated with Tripsin-ointment, scar inhibition was also observed, but less than compared with Chloroquin-ointment. Whether it was really necessary to sacrifice 140 dogs for this experiment should be left to the consideration of the readers!

REFERENCE

*Brain and Nerve* (1971), 23, 1027-1038.

LIPOMATOUS TUMOURS OF THE SPINAL CANAL: A STUDY  
OF THEIR CLINICAL RANGE

By JUERGEN E. THOMAS and ROSS H. MILLER

THE authors report on 60 patients with surgically verified intra-spinal Lipoma. Not one of the usual clinical parameters is in itself characteristic. However, there were some highly suspect symptoms: presence of a subcutaneous midline soft tissue mass, X-ray evidence of bony anomaly and the demonstration of a large dural sac and low-lying conus medullaris, demonstrated by myelography. A post-operative follow-up over 10 years showed a favourable prognosis, and 80 per cent of the patients remained clinically stable. In most cases total removal of the tumour was not possible and simple decompressive laminectomy was the second choice of treatment. Sixteen patients had cervico-dorsal lipomas. In 12, the lesion was intradural and in four extra dural. The patients' ages on clinical onset of the tumour varied between eight and 68 years with a mean of 36 years. Pain, numbness or tingling and muscle weakness in the lower extremities were the earliest manifestations of the tumour. The pain was non-specific in all but two patients, affecting the back or extending ill-defined into one or both lower limbs.

REFERENCE

*Mayo Clinic Proceedings* (1973), 48, 393.