

## ABSTRACTS OF SELECTED PAPERS

**Regional spinal cord blood flow in rats after severe cord trauma**, by A. S. Rivlin and C. H. Tator. *Journal of Neurosurgery*, 49: 844-853, 1978.

The authors describe the use of their technique of measuring regional spinal cord blood flow in rats, by means of the C-antipyrine autoradiographic technique that they have used in monkeys, with similar results. The model was then used to investigate the effects of acute spinal cord injury produced by clip occlusion of the spinal cord. The regional blood flow was severely diminished at and for a considerable distance proximal and distal to the lesion in both the grey and the white matter.

PHILLIP HARRIS

**The neurosurgical management of spinal metastases causing cord and cauda equina compression**, by K. E. Livingston and R. G. Pevin. *Journal of Neurosurgery*, 49: 839-843, 1978.

This important paper describes the excellent clinical results that can be obtained by a vigorous approach to the investigation and operative treatment along with chemotherapy and radiotherapy for many patients with metastatic malignant disease of the spine causing serious neurological disturbance. Indeed out of the 100 consecutive patients, before treatment—20 had no voluntary motor function, 35 had an absolute sensory level, 40 had significant disturbance of urinary bladder function. Forty patients were able to walk and were continent of urine 6 months following surgery, including five patients who were totally paraplegic on admission (the latter term appears to denote complete motor paralysis).

**Human anal reflexes**, by E. Pedersen, H. Harving, B. Klemar and J. Tørring. *J. Neurol. Neurosurg. & Psychiat.*, 41: 813-818, 1978.

Studies of the anal reflex were carried out by pinprick and electrical stimulation of the perianal skin with EMG recording from the external anal sphincter in normal subjects and in patients with lesions of the CNS. With perianal electrical stimulation and EMG recording anal reflex was found to be present in all normal subjects. However, the anal reflex was weak or absent in some cases when mechanical stimulation was utilised, especially in elderly people. With increasing stimulation the latency was found to decrease within certain limits to an average minimum latency of 50 ms. There was no difference in the minimum latencies in normal subjects and in patients with upper motor neuron lesions. The latency may be prolonged in patients with lesion of the reflex arc. Stimulation of the posterior tibial nerve elicited a reflex reaction which could be recorded from the anal sphincter in normal subjects. This reflex was found to have a longer latency but a lower threshold than the reflex reaction obtained from the tibialis anterior muscle. The average minimum latency from the anal sphincter was 93 ms and from the tibialis anticus muscle 64 ms. The absence of anal reflex provides strong evidence of a lesion of the reflex arc as does the presence of an increased minimum latency. The use of both types of stimulation may allow for localisation of the defect whether it involves the afferent or the efferent parts of the reflex. In spinal shock patients preliminary data revealed a perianally elicited anal reflex in all cases but also in some cases a response to peripheral stimulation to be found more frequently in the anal sphincter than in the tibialis anticus muscle.

*Comments.* This excellent study adds further information to our knowledge of the somatic reflex activity of the sacral segments.

**Urinary bladder smooth-muscle electrical activity: response to atropine and bethanchol**, by P. E. Kaplan, J. B. Nanninga and S. Lal. *Arch. Phys. Med. & Rehab.*, **59**: 454-458, 1978.

Twenty-six spinal cord injury patients, among whom 14 had a lower motor neuron and 12 an upper motor neuron bladder, underwent detrusor electromyography with implanted wire electrodes in the detrusor muscle. These patients were evaluated before and after bethanechol or atropine administration and were compared with five patients who had benign prostatic hypertrophy or bladder tumours but no neurological deficit. Both drugs were shown to alter partially smooth-muscle response. Following atropine in patients with UMNB a decrease in the total estimated electric activity as well as a decrease of bladder pressure at capacity could be recorded. Following bethanechol in patients with LMNB an increase of total estimated electrical activity as well as an increase of the bladder pressure at capacity were demonstrated. In both groups the quantitative responses could be dose related. These results are consistent with the production of electrical activity by the smooth-muscle cells of the bladder wall.

ALAIN B. ROSSIER

**Acute traumatic cervical central spinal cord syndrome**, J. C. Benito de Valle, Francisco Trujillo, Gerardo Ferreras and M. Revuelta. *Rev. Ortop. Traum.*, **22 IB**, 3: 329-334, 1978.

Six cases of branchial diplegia without involvement of the sphincters are reported. The lower limbs recovered rapidly when affected. The aetiopathogenic mechanisms generally accepted are considered valid though further investigation is needed. Surgery is strongly contra-indicated.

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