

ABSTRACTS OF SELECTED PAPERS

Urodynamics in spinal shock patients, by A. B. Rossier, B. A. Fam, M. DiBenedetto and M. Sarkarati. *Journal of Urology* (1979), 122, pp. 783-787.

Seventeen spinal shock patients with traumatic complete cord lesions were investigated with cystometry, urethral pressure profile, anal and rectal pressure recordings, and electromyography of the pelvic floor sphincters. Bladder filling was accompanied by an elevation of resistance in the bladder neck area, with a concomitant increase of pressure in the external sphincter zone but without a simultaneous increase of the electromyographic activity. These results indicate an increased sympathetic activity in the smooth muscle component of the entire urethra. In the majority of patients the continuous withdrawal pressure profile displayed higher values in the membranous urethra than the interrupted withdrawal pressure profile, revealing the importance of sensory afferents from the urethral mucosal receptors in producing artifactual reflex activity in the pelvic floor muscles. In the majority of interrupted withdrawal urethral pressure profiles higher pressures were recorded in the juxtabulbous region than in the mid-part of the membranous urethra. A somewhat decreased electromyographic activity was found in the anal and urethral sphincters at rest. It did not often relate to the amount of resistance recorded in either sphincter. High urethral sphincter pressures and somatic activity of the conus medullaris reflexes show that external urethral and anal sphincters escape spinal shock, the primary characteristic of which is areflexia.

Evoked spinal potentials as a monitor of spinal cord viability, by Y. Kojima, T. Yamamoto, H. Ogino, K. Okada and K. Ono. *Spine* (1979), 4, pp. 471-477.

The authors investigate the effects of reproducible graded compressive cord lesions in adult dogs in order to determine whether the severity and extent of the lesion can be monitored with evoked spinal potentials (ESPs) and whether recovery from paralysis can be predicted. The severity and the extent of the spinal cord lesion were investigated neurologically and histologically and the results were correlated with ESPs changes. Considerable motor recovery was seen in animals which retained ESPs following moderate anterior compression (51 per cent of canal width). Motor recovery was good in animals which had submaximal compression and retained ESPs. The compression ratio (67 per cent of canal width) at which ESPs disappeared was coined the 'electrophysiologic maximum tolerable compression' (EMTC). Persistent disappearance of ESPs was accompanied by irreversible lesions and loss of motor recovery. Persistence and amplitude of ESPs were both useful in predicting not only the severity and extent of the lesion but also the recovery. Based upon similar changes in the ESPs pattern found during asphyxia, ESP alterations from compression were considered to be caused by spinal cord ischemia. Further studies are needed to determine the maximum tolerable period of cord compression at EMTC.

ALAIN B. ROSSIER