

ABSTRACTS OF SELECTED PAPERS

Rupture of diaphragm associated with spinal cord injury, by John C. Hall, M. C. Douglas, and D. C. Burke. *Australian and New Zealand Journal of Surgery*, (1981), 51, 6, 594-597.

A review of 1007 patients treated at the Spinal Injuries Unit, Austin Hospital, revealed 11 instances of rupture of the diaphragm. In five patients the diagnosis was delayed more than 48 hours, the hazards of delay in diagnosis and treatment being highlighted by three instances of gastric perforation. The authors stress the importance of contrast radiology in the assessment of these patients. In analysing the patients who presented with spinal cord injury and rupture of the diaphragm it was found that the incidence of this lesion was 11.1 per cent in the group of patients who presented with fractured ribs, plus trauma to the spine below the mid-thoracic level. The authors stress the importance of a high level suspicion of any basal abnormality on supine chest X-ray in patients with spinal injury below the mid-thoracic level, especially so if fractured ribs are also present.

DAVID C. BURKE

Acute osteomyelitis of the spine with paraplegia, by C. V. David and P. Balasubramanian. *Australian and New Zealand Journal of Surgery*, (1981), 51, 6, 545-554.

The authors report of a patient who presented to their hospital in Kuala Lumpur with septicaemia and paraplegia, with a provisional diagnosis from another hospital of epidural infection due to staphylococcus pyogenes. X-rays showed erosion of the fourth lumbar vertebra, with narrowing of the disc spaces both above and below, and the myelogram a complete block at L2. A left psoas abscess was drained 12 hours after admission through an anterior left extraperitoneal approach. The patient completely recovered from the septicaemia and made a partial recovery from the paraplegia. The pre-operative diagnosis of acute osteomyelitis led to the correct surgical approach to the problem, whereas if laminectomy had been performed for the referral diagnosis of epidural abscess, the drainage of the psoas abscess could not have been achieved and the patient may have succumbed to the septicaemia.

DAVID C. BURKE

Bladder recovery in patients with traumatic cervical cord injury evaluated by voiding synchronous cystosphincterometry with uroflowmetry, by E. Iwatsubo. *J. Urology*, (1981), 126, 503-508.

Sixteen patients with traumatic cervical cord injury who were admitted within 1-19 days of injury underwent 29 cystosphincterometric examinations between 36 and 196 days after injury. In ten patients (six of whom had an incomplete lesion), two or more cystosphincterometries were carried out. Out of ten patients eight (six incomplete lesions), initially had immature bladder contractions with external urethral sphincter dyssynergia. Subsequently, seven patients developed mature bladder contractions and synergia. Immature bladder contractions persisted in one patient with a complete lesion; however, the external sphincter became synergistic. Out of ten patients two complete lesions with initially mature bladder contractions and synergistic sphincter retained the same pattern of activity on subsequent examinations.

This study shows that immature small and sustained bladder contractions are

associated with dyssynergia, whereas mature bladder contractions are usually accompanied by synergia, especially in incomplete lesions.

It appears that patients with complete spinal cord lesions go through a state of inactive detrusor activity before they develop mature contractions by way of immature and small and/or sustained bladder contractions. This study suggests that the sacral segments play a regulatory role in achieving synergia, that bladder and external urethral sphincter activity recover independently, and that a synergic response may also develop in complete lesions.

ALAIN B. ROSSIER

The tensor fascia lata: variations on a theme, by M. Schefflan. *Plastic and Reconstructive Surgery*, **68**, 59-81.

This paper describes modifications of the standard tensor fascia lata myocutaneous flap for repairing trochanteric sores. The author cuts the skin portion of the flap as an island and uses the proximal muscle and skin to augment the bulk of the flap. He has also used the de-epithelialised distal end of the flap to tuck under the muscular portion and thus to add further bulk.

D. O. MAISELS

The gluteal thigh flap: a reliable sensate flap for the closure of buttock and perineal wounds, by D. J. Hurwitz, W. M. Swartz and S. J. Mathes. *Plastic and Reconstructive Surgery*, **68**, 521, 81.

This paper describes a superiorly based flap raised on the back of the thigh and lower gluteal regions. It includes the skin and subcutaneous tissues together with the lower part of gluteus maximus. The blood supply comes from the inferior gluteal artery which continues down the thigh as a significant vessel accompanying the posterior cutaneous nerve of the thigh, affording it the advantages of an axial flap. The preservation of the posterior cutaneous nerve of thigh provides sensation to the flap in non-paraplegic patients and when used as a free micro-vascular flap. The arc of the flap reaches the sacrum, anterior superior spine and greater trochanter and medially the pubis and deep pelvic cavities. It can be used either as a transposed flap or advanced in a V to Y fashion and appears to be both versatile and robust.

D. O. MAISELS

Gluteus maximus island myocutaneous flap for closure of sacral and ischial ulcers, by M. Schefflan, F. Nahai and J. Bostwick. *Plastic and Reconstructive Surgery*, **68**, 533, 81.

This paper describes the use of a gluteus maximus myocutaneous flap based either on the superior or the inferior gluteal artery. It can be used either as a sliding advancement or as a transposed flap for sacral and ischial sores. It should be reserved for paraplegic patients because of the morbidity associated with the use of the gluteus maximus.

D. O. MAISELS

V-Y advancement of hamstring musculo-cutaneous flap for coverage of ischial pressure sores, by J. E. Hurteau, J. Bostwick, F. Nahai, R. Hester and M. J. Jurkiewicz. *Plastic and Reconstructive Surgery*, **68**, 539, 81.

This flap consists of a large triangle of skin and subcutaneous tissue carried upwards on the underlying hamstring muscles which are divided inferiorly. The perforating vessels entering the deep surface of the muscles are preserved to provide the blood supply to this compound flap which is advanced in a V to Y fashion.

D. O. MAISELS

Renin and aldosterone release during sympathetic stimulation in tetraplegia,
by C. J. Mathias, H. L. Frankel, B. Davies, V. H. T. James and W. S. Peart. *Clinical Science* (1981), **60**, 399-404.

Six tetraplegic patients with a physiologically complete spinal cord transection were studied with regard to the effects of endogenous sympathetic stimulation elicited by bladder stimulation, and of intravenous infusion of noradrenaline and isoprenaline on the blood pressure, heart rate and the levels of plasma renin activity and plasma aldosterone. Plasma renin responses to intravenous infusions of the catecholamines, noradrenaline and isoprenaline were also assessed and compared with six normal subjects studied in an identical manner. Following bladder stimulation in the tetraplegic patients, a marked rise in blood pressure and fall in heart rate took place, whereas there was no change in plasma renin activity and plasma aldosterone. When compared with normal subjects an enhanced pressor response was found following noradrenaline infusion in tetraplegic patients. The heart rate fell in both groups, whereas plasma renin activity and plasma aldosterone did not change in either group. Unlike the normal subjects in whom the systolic pressure rose and the diastolic pressure fell, isoprenaline infusion caused a fall in both systolic and diastolic blood pressure in the tetraplegic patients. The heart rate and plasma renin activity rose in both groups but plasma aldosterone did not change in either group. The authors conclude that in tetraplegic patients plasma renin activity is elevated neither by endogenous sympathetic stimulation by bladder stimulation nor by noradrenaline infusion. Isoprenaline increases plasma renin activity to the same extent as in normal subjects. It follows that renin release mechanisms in tetraplegics do not appear to be hypersensitive to catecholamines. Plasma aldosterone does not appear to be influenced by any of the stimuli.

Comments: The results of this excellent clinical study in tetraplegic patients should be considered as fundamental, because they clearly point to the relationship or rather to the lack of relationship between endogenous sympathetic stimulation and plasma renin activity on the one hand, and to plasma aldosterone on the other.

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