The Journal of Bone and Joint Surgery

EDITORIALS AND ANNOTATIONS

THE TREATMENT OF TRAUMATIC PARAPLEGIA

There can be no doubt that the patient with a spinal injury has a much better chance now than he has ever had in the past. In the old days it was too often the case that, unless there were sufficient resources to provide special and constant nursing, bedsores and urinary infection were inevitable and often fatal. If these early hazards were overcome, the patient spent the rest of his life as a total invalid at home or in some kind of hospital for incurables, a pathetic burden to himself, his family and the community. Nowadays improved hospital facilities and nursing save many lives in the acute stage, and rehabilitation subsequently makes it possible for many of these patients to lead fairly active, useful and happy lives. In this development, the special centres for paraplegics have played a notable part, not only in the cases which they deal with themselves but also in setting a standard for others, and in showing what can be done. If there were enough such centres, the immediate mortality could be reduced to negligible proportions and rehabilitation would be more generally effective than it is now.

But the fact is that there are not enough special centres, in this country or America, and most patients will still have to be dealt with in general and orthopaedic hospitals. Despite the growing toll of the road and of industrial accidents, spinal injuries are not so common that any one person outside a special centre can become expert in their management. Consequently, reports from these centres continue to be valuable.

In this number of the Journal Holdsworth and Hardy report sixty-eight cases of a particular kind of injury, fractures in the thoraco-lumbar region with paraplegia. These injuries, often involving both the spinal cord and the roots of the cauda equina, present peculiar problems of neurological interest. As with other kinds of vertebral fractures and dislocations, the immediate problem is the vertebral injury; some fractures in the thoraco-lumbar region are unstable, and for these Holdsworth and Hardy recommend early plating of the spinous processes above and below the lesion to restore stability. This seems to be an easy, safe and effective procedure, and it means that the patient can be moved about from the time of the operation. Early and frequent changes of posture are probably the most important factors in the prevention of pressure sores and there is much to be said for any procedure that will make prolonged immobilisation of the patient unnecessary. It is also likely that this kind of internal fixation will prevent progressive angulation or other deformities when the upright posture and weight bearing are resumed.

Apart from the vertebral injury, the functional result is usually determined by the extent of the damage to the spinal cord and the roots of the cauda equina. The cord injury is greatest at the moment of the vertebral trauma and is for the most part irreparable. But the lumbar roots of the cauda equina, lying alongside the lower end of the cord, may escape serious injury, or, if they do not, some recovery is possible. Thus in the most favourable cases the patient may be left with only a defect in the sacral segments, the lumbar innervation being largely preserved. This is of great value in walking because enough hip and knee movements may remain to save the patient from having to swing his lower limbs lifelessly on
crutches; there is therefore a great effect on the patient's morale. If there is total paralysis of the lower limbs, many patients prefer to become expert in the use of a wheel chair rather than to struggle to walk with the aid of appliances, and the choice must usually rest with the patient.

The loss of the sacral segments of the cord means loss of voluntary control of the bladder and bowel, but modern methods of treatment have considerably reduced the consequent dangers and inconveniences. The important immediate problem is the prevention of infection, and this means avoiding over-distension of the bladder from the outset. The long-term aim is the establishment of automatic emptying, and this is effective and of value to the patient only if the bladder has a reasonable volume—that is, if it has been prevented from shrinking. These ends can usually be achieved by continuous urethral drainage, with intermittent distension and suction drainage. Many prefer some form of tidal drainage apparatus but even in its simplest form it is apt to be a worry to those who are only called upon to use it once or twice a year. Holdsworth and Hardy have found that in their cases it has been sufficient to drain the bladder by an indwelling urethral catheter, to prevent shrinkage by intermittent irrigation and to avoid stagnation by suction. If infection does occur, modern chemotherapy and antibiotics are usually effective.

Despite the advances that have been made, a spinal injury remains a very serious and often tragic matter. Our efforts are directed to salving what remains of physique and morale and to restoring the patient to some kind of useful activity. So grave is the problem that the question of operation for the spinal cord lesion arises sooner or later. Such operations are usually unavailing: the spinal cord lesion is inflicted at the moment of the injury, and, as it is usually a gross contusion or laceration, no surgical procedure is likely to help. A case may be made for removing foreign bodies, missiles and fragments of bone from the vertebral canal, but very rarely does such removal benefit the spinal cord. If lumbar puncture reveals a manometric block, the question of operation may have special difficulties. In most cases the block is due to oedema or haemorrhage of the cord, gross lesions which operation is unlikely to help, and Holdsworth and Hardy say that they have never seen any good come from it. There are, however, occasional cases of a block due to an extrathecal haematoma or extrusion of an intervertebral disc, removal of which might provide something of a decompression and be of potential benefit. Such cases can be detected only by an exploration, and most surgeons would find it difficult to deny the patient who has a block the slight chance, very slight though it is, of relief by operation. In the absence of a manometric block, there is really nothing to be said for operation, and the patient can be spared a useless procedure.

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OSTEOARTHRITIS

Controversy no longer rages, as in the earlier decades of this century, over the distinction between osteoarthritis and rheumatoid arthritis, or, as in still earlier years, over the relation of both these diseases with the then fashionable gout. Osteoarthritis is now known to be a local disorder of individual diarthrodial joints. It is independent of infection and of systemic disease in general, and is brought about by abnormal mechanical conditions in conjunction with senescence, trauma or other degrading change in articular hyaline cartilage. As many recent careful studies have shown, the morbid anatomical features of osteoarthritis are the projection to a pathological extent of the alterations in joint structure commonly and indeed almost universally associated with advancing age. Such age changes, and also osteoarthritis, are common and become severe in joints much subject to mechanical stress, weight bearing or large movement. Influences that aggravate osteoarthritis are common enough; the most usual are local joint injury or disease, especially where articular cartilage has suffered, and deformities that throw abnormal stresses upon a joint. Fischer* truly wrote that "the


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