EDITORIAL

STABILISATION OF THE CERVICAL SPINE

In recent issues of the Journal a number of papers have discussed various methods of fixation of the unstable cervical spine. New metal fixation devices have been suggested (Mitsui 1984; Ransford et al. 1986) and the use of acrylic cement has been advocated in some circumstances.

It is important, however, that technique should not obscure the fundamental principles of treatment based on the natural history of the pathological process. Instability, insecurity or abnormal movement of the cervical spine occurs in those conditions where ligaments, or bone, or joints, are damaged. Abnormal mobility is seen after many fractures and dislocations of the neck and occurs immediately; in the vast majority of injuries, spontaneous healing of the damaged structures occurs and stability returns (Ryan and Taylor 1982). By contrast, in those conditions which cause damage slowly — rheumatoid disease and malignant bony deposits — instability occurs slowly and sometimes progressively (Fidler 1985; Crockard et al. 1986; Zoma et al. 1987). Deterioration is likely in the destructive malignant conditions whereas in rheumatoid disease spontaneous fusion across a damaged joint may occur if the neck is adequately immobilised. Iatrogenic instability occurring after injudicious, widespread decompressive laminectomy may show itself some time after the operation.

Abnormal movement in the neck may not be painful but the underlying cause often is, and stabilisation is sometimes required for the relief of pain; but more commonly it is needed to prevent the development of increasing damage to the cervical spinal cord and nerve roots (Hsu and Leong 1984). The recognition of instability is not difficult and is suggested by separation of the anterior or posterior structures on a plain film, and confirmed by obvious movement on flexion–extension strain films, or a positive "stretch" test.

If the abnormal movement of the neck appears to be unchanging ("stable instability") and there is no impairment of neurological function, then the decision for or against surgery is a fine one. Will the displacement progress and produce neurological damage?

In cases caused by trauma it must be remembered that perhaps 90% will stabilise spontaneously and that, if decompression of the cord and roots has been accomplished by reduction of fractures and dislocations, radiological evidence of bony fusion should be awaited and will usually be apparent in six weeks or so. If abnormal movement is still present at that time, and especially if the patient is young and anxious to continue active sports, it is wiser to stabilise the unstable segment.

In the patient with rheumatoid disease of the neck involving several segments, it may be more sensible to treat the unstable, uncomplicated cervical spine conservatively with an orthosis. When neurological damage has already occurred in rheumatoid disease of the neck, then the sooner stabilisation is performed the better the outcome although, because of the progressive nature of the condition and the poor general health of the patient, the morbidity and mortality are considerable (Zoma et al. 1987).

In malignant cases the effect of radiotherapy or cytotoxic drugs should be awaited before embarking on major surgery. The decision then to decompress and fuse the affected area depends upon the condition of the patient and the prognosis. If life expectancy is measured in weeks and pain is considerable, the application of a halo vest will make the patient comfortable and
anticipates the heavenly fitting of a similar appliance. Palliative surgery, however, may be justifiable.

The increasing number of metal internal fixation devices designed to help stabilise the cervical spine makes the decision of how to fuse the cervical spine much more appealing to the mechanically minded surgeon than the decision of when to fuse. Deciding that the neck needs fusing and picking the right time to do the operation is much more difficult and much more important than the choice of fixation devices. In any event solid bone bridging the unstable segments is more reliable than plates, screws, wires, or a construct of rods and wires. The bone graft may be placed anteriorly or posteriorly. Posterior fusion is preferred unless decompression of the front of the cord is required, or the posterior elements are deficient. The graft may be supplemented by metal internal fixation devices or even acrylic cement in malignant cases, or by an external splint. Whatever the method of surgery chosen, the unstable spine should be controlled by skull traction at all times during the surgical procedure.

In the neck as elsewhere in the body it should always be remembered that operations are dangerous, and that surgical procedures sometimes make patients worse. In the cervical spine the consequences may be disastrous.

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REFERENCES


