Editorial: Rheumatoid subluxations of the cervical spine

Subluxations of the cervical spine complicating rheumatoid arthritis pose a number of problems. Their commonness in the population afflicted with the disease makes it important to have clear indications for surgical treatment, yet these are by no means agreed, and it is sometimes not easy in an individual case to decide whether something should be done and if so what. Furthermore, the deformity produced is variable both at the atlantoaxial and subaxial levels, and a standard method of treatment, say posterior fusion, is not applicable to every case.

There are three reasons for considering surgery: the development of cervical cord compression, the symptoms of which may easily be missed in patients afflicted by mutilating deformities of the limbs; severe pain in the neck; and, in the absence of either of these features, a very severe degree of subluxation. The first of these is fairly easily accepted, though Pellicci and his colleagues argued from a five-year follow-up study that only progression of neurological signs requires intervention. Pain in the neck may disappear with time and demands surgery only if severe, unremitting, and not controlled by conservative means. It may be associated with feelings of instability ('clunking') which distress the patient and may lead him to press for surgical relief. The pain may be mainly neuralgic, involving the great occipital nerve, and it is surprising that this may sometimes be relieved permanently by injection or section of the nerve, procedures which are easy to do and therefore worth trying.

When atlantoaxial or subaxial subluxation is very severe and the spinal canal apparently gravely narrowed surgery may be considered as a prophylactic measure against the development of acute or chronic cord damage. This is the most debatable indication. A symptomless atlantoaxial subluxation so gross as to cause wonder that the cord is still apparently functioning normally, is not a rarity. It may be difficult for a surgeon, aware of the dangers of such unstable lesions in other circumstances, to avoid thinking treatment necessary. However, long term studies show that cord signs will not inevitably appear, that there is some tendency for stabilisation to occur with time, and one can point to the rarity of neurological catastrophes in such patients. A decision in an individual case amounts to the expression of an opinion, but it will be biased towards conservatism if the patient is disabled and inactive and towards intervention if the reverse holds.

What is needed surgically varies with the type of subluxation and its level. At the top of the spine the usual problem is a mobile atlantoaxial subluxation, the atlas and skull slipping forwards on the axis during forward flexion. Here a posterior fusion of the arches of the first two vertebrae, perhaps including the occiput, with the use of wires and bone, will usually stabilise the joint satisfactorily. Long postoperative immobilisation in head traction is to be avoided, and a lightweight plastic jacket with halo splint achieves this and is well tolerated even by frail patients, in spite of the cumbersome appearance, though occasionally pulmonary complications appear which force its removal. Upward subluxation of the odontoid with compression of the cervico-medullary junction is not easy to treat by orthodox methods. Fusion alone, since the deformity is irreducible, does not relieve the compression and usually fails even to control progression. A posterior decompression by removal of the arch of the atlas and the posterior rim of the foramen magnum (the dura may have to be opened as well if it forms a constriction ring posteriorly) may be of value, but it is not ideal theoretically, since the compressing agent anteriorly is left untouched, and in practice the neurological symptoms may be unrelieved or even worsened. It is for this state of affairs that the procedure described in this issue by Crockard and his colleagues should be particularly applicable. The anterior approach to the odontoid peg has been used sporadically since the 1960s, when it was described for tuberculosis, but it has not been widely adopted, perhaps from timidity. Crockard et al. show that the approach through an unsterile field is not fraught with the hazards one might expect. Indeed they have been willing to apply it even to atlantoaxial subluxations, because their radiological studies with subarachnoid metrizamide and computed tomographic scanning suggest that even in these cases, where hitherto the agent of neural damage has been thought to be movement of one bony vertebra on the other, there is an element of anterior compression by pannus dorsal to the odontoid. One may still be hesitant to adopt such a radical approach for simple anteroposterior instabil-
ity when posterior fusion generally works well, but it certainly ought to be considered for those difficult cases of upward subluxation where orthodox methods are clearly unsatisfactory.

Subaxial subluxations are less common but pose special problems. Cord involvement may be seen in cervical spines affected by rheumatoid arthritis below the atlantoaxial level, the mechanism usually being a forward displacement of one or more than one vertebral body on that below it. Sometimes the cause is not clear, as plain x-rays show little subluxation and a myelogram, which if there is clear evidence of instability on ordinary films is not usually necessary, shows changes similar to those seen in the myelopathy of cervical spondylosis, for which treatment would be the same, i.e., posterior decompression. Subaxial subluxations are usually reducible by traction, but holding the reduction by anterior fusion is difficult, and Ranawat and his colleagues\(^3\) have reported on the unsatisfactory results of this method. A posterior decompression will relieve the cord compression but may worsen instability, and the laminectomy itself will interfere with an attempt at posterior fusion. An anterior fusion as a second operation is one method of achieving stability that may work, but the approach of Crockard and his colleagues\(^2\) is to operate from the front, effecting an anterior decompression and stabilising the spine from behind. Whether this would be satisfactory in all cases remains to be seen.

The risks of prolonged postoperative immobilisation in these patients have been referred to already. The success of Crockard et al. in dispensing with all rigid immobilisation is, therefore, an important lesson.

The problems of treating rheumatoid cervical spines are by no means solved, as there are variations between the three common forms of subluxation which make individual consideration of each case important. Furthermore, successful treatment does not cure the underlying process which, if progressive, may lead to later changes at the same or other levels. It is fair to judge surgery by its efficacy in controlling the current problem, but these patients need to be kept under review, as their cervical problems may not be over.\(^4\)

Finally, studies of the natural history of rheumatoid cervical subluxations show that the patients have a high mortality from other causes over five years.\(^1\) This needs to be borne in mind when treatment is being considered.

Dept of Neurosurgery,
The London Hospital,

T T KING

References


