



SURGICAL TREATMENT OF SAGITTAL DEFORMITY IN ANKYLOSING SPONDYLITIS

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Kyphosis in ankylosing spondylitis can affect the cervical spine, thoracic spine, lumbar spine, or a combination. Severe deformity is now less commonly seen, because of better medication to control symptoms, and better supervised physiotherapy to prevent stiffening in a deformed posture.

Cervical Spine

In mild or moderate cases, correction may or may not be necessary, depending on the posture of the rest of the spine and remaining mobility. In severe cases, the jaw of the patient may not be opened wide enough to eat solid food. In that case, cervico-dorsal osteotomy to correct the deformity is necessary. Cervicodorsal osteotomy is best performed under local anaesthesia, between C7 and T1. Care is taken to ensure that the C8 nerve root is not compressed during the correction. With the patient awake, any unfortunate neurological damage can be detected quickly, and avoided. A simple compression implant can be used to fix the osteotomy.

Thoracic Kyphosis

There are two main sub-types:

(a) The kyphosis only affects the thoracic spine, with retained cervical and lumbar lordosis.

(b) The thoracic kyphosis is part of a long C-type of kyphosis affecting both the thoracic and the lumbar spine.

In type (a), correction is more safely obtained by a combined anteroposterior approach. Multi-level osteotomies are performed both anteriorly and posteriorly, with compression correction using posterior instrumentation.

In type (b), it should be treated as a lumbar kyphosis.

Lumbar Kyphosis

Patients with this problem have a very tiring posture. If they stand with the hips and knees extended, forward visual field is very limited. If they bend the knees and hips to accommodate forward vision, they get tired very easily. The forward visual field is also dependent upon concomitant cervical spine kyphosis and stiffness.

Fixed flexion deformity of the hips, if significant, should be corrected by hip arthroplasty before deciding on lumbar osteotomy. The classical Smith-Peterson osteotomy of the lumbar spine involved a V-shape posterior osteotomy at one or more levels, followed by closing of the osteotomy, with concomitant opening of the anterior longitudinal ligament. This method has distinct disadvantages:

a) Lengthening of the anterior column.

b) Acute angulation at the corrective site.

c) A small but definite risk of intraoperative or early post-operative rupture of the major blood vessels.

We have described a transpedicular decancellation osteotomy since 1976. Removal of about 1° of posterior element at the intended level, removal of the pedicle to its base, and transpedicular decancellation of the vertebral body will result in a controlled posterior closure. The spine is shortened, and there is no acute angulation. Closure is gradual and under direct vision. Any simple posterior compression implant will be able to hold the osteotomy. If preferred, multiple fixation points over a longer length of the spine can be used to maintain the correction.

The transpedicular decancellation osteotomy works well only when the bone is very osteoporotic. In young individuals, a transpedicular partial corpectomy will result in a much better posterior closing effect. This is particularly true when there is absence of, or insignificant, ossification of the anterior longitudinal ligaments.

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