7

Surgery of the Cervical Spine

7.1. Introduction

The surgical management of lesions of the cervical spine is now dominated by the operation of anterior interbody fusion. This procedure was introduced for use in the neck in 1955 by Robinson and Smith. Their technique was modified when Cloward introduced special instruments for dowel grafting in 1958.

In the course of performing anterior cervical interbody fusion operations a wide range of pathological lesions can be dealt with safely and effectively. For example, some of the space-occupying lesions which project into the anterior wall of the cervical canal can be removed before the grafts are inserted, lesions such as central disc prolapses, sequestrated disc fragments, or osteophytic bars of bone. The incidence of severe neurological deficits, including quadriplegia, was formerly so high following the use of “laminectomies” for posterior approaches to these lesions that surgery in general, in the cervical spine, had a very poor reputation.

The operation of cervical laminectomy still retains an important place for use as follows:

1. For decompression of the spinal canal in cases of multi-level stenosis.
2. For the relief of persistent stenosis of the canal after anterior interbody fusion operations, rarely.
3. For drainage of epidural abscesses.
4. For the treatment of spinal cord tumours.

However, its use to gain access to lesions which lie anterior to the spinal cord has been abandoned.

Posterior cervical spinal fusion between the arch of C1 and the lamina and spinous process of C2, for the treatment of un-united fractures of the odontoid process, remains the treatment of choice for this problem. Apart from this indication, and that of internal fixation following open reduction of some fracture-dislocations in the neck, this operation has been superseded by that of anterior cervical interbody fusion (Figs. 7.2a, b).
Figures 7.1a,b. a A photograph of a dissection of the cervical spine and the cervico-thoracic junction viewed from in front. All the soft tissues have been removed with the exception of the intervertebral discs and the vertebral arteries on both sides. The emerging nerve roots are also shown. Note the proximity of the vertebral arteries to the lateral margins of the intervertebral discs in the region of the unco-vertebral joints. Note also the dimensions of the intervertebral discs particularly in the transverse plane. They increase gradually in size from above downwards (dissected by Dr. M. C. Crock). b A photograph of the same specimen viewed obliquely from the right side showing the relationships of the vertebral artery and the emerging cervical nerve roots.