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Reoperation related to graft complication following anterior cervical fusion

At our department anterior cervical decompression and fusion is usually peformed using the Cloward or the Smith Robinson method; for the severely spondylitic cervical spine we occasionally employ the technique of partial multiple vertebrectomy with the insertion of a block graft,[1] a procedure we refer to as a "Trench". It is our standard practice to obtain a lateral cervical spine radiograph on the first postoperative day. Some surgeons find the radiograph useful to confirm that the correct level has been fused. In addition, the radiograph will provide some information about the degree of retropharyngeal swelling due to haematoma. However, we interpret the significance of postoperative cervical radiographs in conjunction with the clinical findings. If the patient is symptomatic and the radiograph shows a graft abnormality an early re-exploration may be undertaken. In an asymptomatic patient, partial anterior slippage of the graft or minor degree of collapse are considered acceptable and the patient is followed up. If the patient develops symptoms or signs then a late re-exploration may be performed.

Between 1979–89, 822 patients had anterior decompression and fusion at our department. Fifty one of these had further anterior decompression, 27 at a different level and 24 at the previously operated level. In 12 of the latter group, re-exploration was related to collapse or extrusion of the bone graft. The other 12 patients had a re-exploration to remove retained osteophytes or disc fragments. Other patients not counted in this group included one who was re-explored for infection following a cervical discectomy without a fusion and three who had reoperation to evacuate a postoperative haematoma in the neck. Preoperative radiographs were carried out in all cases to identify the correct level before and therefore none of our patients had a fusion at the wrong level. We carried out a retrospective study of the 12 patients that required re-exploration because of a graft complication. The postoperative clinical features and the early check cervical spine radiograph were analysed to find out if the clinical features alone are a reliable predictor of the patients with a graft complication that may necessitate a re-exploration. In this group of patients four had a one level Cloward operation, two had a two level Cloward operation, three had a one level Smith-Robinson procedure, two had a three level "Trench" procedure and one had a four level "Trench" procedure.

The graft had collapsed in six cases, slipped anteriorly in five and slipped posteriorly in one case. The early check radiographs showed a serious abnormality which necessitated an urgent re-exploration in four cases, each of whom was symptomatic at the time. In four other cases, the early radiograph showed a minor abnormality which was initially managed conservatively. Re-exploration was performed between two to four months postoperatively when the complication worsened radiologically and was accompanied by symptoms and signs. The final four cases had a satisfactory early check radiograph and the complication became obvious between one week to five months later. They all had clinical symptoms that prompted us to repeat the radiographs.

It was clear that each of the 12 patients had an obvious clinical problem at the time of re-exploration whether it was early or late. These were: severe brachialgia affecting the asymptomatic side in two cases, severe dysphagia in four cases, recurrence and/or worsening of myelopathy in four cases and recurrence of brachialgia in one case. In one other case there was no postoperative improvement and the patient's myelopathy slowly deteriorated. In our study we did not encounter a single case that was re-explored on the basis of a graft abnormality on the plain cervical radiograph alone.

Our rate of reoperation related to a graft complication following anterior cervical fusion was 1·45%. It is most likely that of the 822 patients that had anterior cervical fusion at our unit, a number of them had a minor degree of graft abnormality on the postoperative radiograph. These were managed conservatively and did not develop symptoms and signs to necessitate a reoperation. Lunsford[2] reported a reoperation rate of 4% following anterior cervical discectomy and fusion and the reoperation rate reported by Williams[3] was 5·1%.

In our experience a significant graft abnormality that necessitated a reoperation was always associated with a definite clinical problem. Abnormalities on the cervical spine radiographs in asymptomatic patient could be managed conservatively.[4] It is possible therefore to conclude that an early radiograph after a cervical fusion is unnecessary in a patient who is asymptomatic or improving. A radiograph is needed only if the patient complains of dysphagia, persistence or worsening of their radiculopathy or myelopathy. Late recurrence of symptoms or signs is an indication for further radiographs to assess the condition of the bone graft.

While we acknowledge that there are many reasons for an early postoperative radiograph, we do not feel that these reasons are sufficiently convincing in an asymptomatic patient. A patient who had a wrong level fused will continue to have symptoms. An experienced spinal surgeon will know the adequacy of his spinal grafting at the end of the operation and is thus able to select the high risk asymptomatic patients who need to be carefully followed up with postoperative radiography. This decision will take into account the pathology (for example, rheumatoid arthritis), the preoperative assessment (for example, cervical instability) and the technical aspect of the operation (for example, osteoporotic bone graft and unsatisfactory positioning).

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MATTERS ARISING

Akathisia following traumatic brain injury

Akathisia following traumatic injury involving right parietooccipital and orbitofrontal areas may be due to blockade of dopamine[1] lateralised to the right hemisphere.[2] Fluoxetine-induced akathisia in women with obsessive-compulsive disorder[3] whose right hemisphere is at a higher metabolic rate[4] suggests that inhibition of dopamine, which is mediated by serotonin in obsessive-compulsive disorders, may occur as a result of posttraumatic alteration of metabolism in the right hemisphere. This lends further support to the role of decreased dopaminergic activity in the prefrontal cortex in akathisia.[1]

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Isolated palsy of the fourth cranial nerve caused by an intracavernous aneurysm

An interesting case of isolated trochlear palsy due to an intracavernous carotid aneurysm was recently reported by Maurice-Williams and Harvey.[1] Two points of contention arise in this report: 1) the need for performing carotid angiography early in the course in an older patient with an isolated fourth nerve palsy, and 2) has a cause and effect relationship between intracavernous aneurysm and fourth nerve palsy been conclusively shown in this case?

As they acknowledge in their report, isolated trochlear palsies are most commonly caused by trauma and vascular disease.[2] In patients over the age of 50 years, an ischaemic