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CLINICAL OUTCOMES OF INSTRUMENTED FRENCH DOOR CERVICAL LAMINOPLASTY

Introduction/Aim

Laminoplasty for cervical myelopathy was introduced to prevent instability associated with laminectomy. Hardware-assisted laminoplasty has additional advantages of instant stability and security of graft position. We describe clinical and radiological outcomes of instrumented French-door laminoplasty for patients with cervical myelopathy. Our aim is to analyse the clinical and radiological outcomes in patients treated with mini-plate fixation in French-door laminoplasty.

Materials and Methods

A series of 25 consecutive patients with cervical myelopathy, treated with hardware-assisted French-door laminoplasty in our unit. The mean follow-up period was 56.5 months (range 40-72). Outcomes were assessed using Neck Disability Index (NDI), Japanese Orthopaedic Association (JOA) score, Visual Analogue Score (VAS) and radiographs. At each level, a French-door laminoplasty was performed and the excised lamina, plus a 2cm span of iliac crest bone graft, were screwed to a contoured 16-18 hole maxillofacial titanium mini-plate. The construct was then fixed with screws to the lateral masses, bridging the decompressed canal. Patients were mobilised without additional external support. The preoperative NDI, JOA and VAS scores were compared with follow-up scores. Serial follow-up radiographs were analysed for implant position and bone healing.

Results

There were 18 men and 7 women; mean age of 45 years. Mean operative time was 130 minutes. The average hospital stay was 2.4 days (range 2-4). All the 25 patients had significant improvement in neurological symptoms by at least one grade and significant pain relief. The mean improvements at final follow-up were NDI 35%; VAS 4 points; JOA 4.8. There were no postoperative hardware-related or neurological complications and no pseudoarthroses.

Discussion

Instrumented French-door laminoplasty is a safe and effective alternative to laminectomy for the treatment of myelopathy in younger patients with cervical myelopathy. The use of titanium mini-plate fixation provides instant stability, preventing C5 nerve root palsy and yet allowing early mobilisation with reduced hospital stay.

Conclusion

We recommend that instrumented French-door laminoplasty should be considered for the treatment of grade 2 and 3 cervical myelopathy in young patients who desire to return to work early. This technique will allow the patient to be mobilized early with minimal pain and comorbidity.