

Abstract #1469.docx

C4/5 FORAMINOTOMY CANNOT PREVENT C5 PALSY

Introduction/ Aim

Some authors reported that C4/5 foraminotomy was effective for preventing C5 palsy after cervical laminoplasty. However, the efficacy is controversial. The purpose of this study was to verify the effectiveness of prophylactic C4/5 foraminotomy, prospectively.

Materials and Methods

Consecutive 90 patients with cervical myelopathy who underwent posterior surgery with routine bilateral C4/5 foraminotomy were enrolled in this study (50 male and 40 female, 56 spondylosis and 34 OPLL, average 66.7 years old). There were 63 patients with double door laminoplasty (group LP) and 27 patients with laminoplasty and fusion from C2 to T1 or below with instrumentation (group Fusion). Surgical procedures were monitored with motor evoked potentials (MEPs) by train cranial stimulation. The incidence and severity of C5 palsy were investigated. Statistical significance level was set at 0.05.

Results

C5 palsy occurred in 22 of 90 patients (24.4%), 10 of 63 patients (15.9%, unilateral in all patients) in group LP and 12 of 27 patients (44.4%, 16 arms, bilateral in 4) in group Fusion. Incidence of C5 palsy was significantly higher in group Fusion than in group LP (Chi-square). Especially in group Fusion, all the 12 patients with palsy were applied C5 pedicle screws (12 of 20 patients, 60%). MEPs in 6 of 22 patients with palsy (27%) were judged as deterioration (true positive). As to severity, 6 of 10 arms with palsy (60%) deteriorated to MMT 2 or less in group LP and 12 of 16 arms (75%) in group Fusion. No significant difference was found in MMT between groups (Mann-Whitney U). But, MMT 1 grade (6 patients) and bilateral palsy (4 patients) occurred only in group Fusion.

Discussion

C5 palsy was reported to occur in average of 4.6% of patients in the previous review paper. In our prospective study, C5 palsy occurred in 15.9% after laminoplasty and 44.4% in group Fusion. Further clinical studies with strict intraoperative monitoring are needed to verify the efficacy of this procedure.

Conclusion

Bilateral C4/5 foraminotomy cannot prevent C5 palsy in cervical laminoplasty. C5 pedicle screws with C4/5 foraminotomy aggravated the risk of C5 palsy.