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Full muscle-sparing cervical vertebroplasty with plate

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Background: We devised Minimum invasive Laminoplasty (MIS-LP) from 2014. Using our procedure, skin incision is about 3cm, and plate and screw for lamina fixation deliver primary strong fixation. This study aimed to analyze the usefulness of this procedure.

Materials and methods: 316 cases with MIS-LP (213 male/ 103 female; 65 years old) were investigated retrospectively. This procedure is device of Open door laminoplasty and needs only right angled Gelpi's retractors. The spinous processes of cervical vertebrae C4 to C7 are divided longitudinally to expand the surface of the laminae. At that time, rotator cuff muscles are not peeled from their attachments, but are detached beneath them. Gelpi's retractors is applied above and below the rotator cuff to expose lamina and making gutter. The hinge side is not fully deployed, but the gutter can still be made. After reveal the lamina without spinous process, we undergo open-door from C4 to C6 and dome laminoplasty to C3/C7. For comparative cases, 44 cases were undergone conventional LP (open-door). Hirabayashi's recovery rate/NRS.at first outpatient day after operation, Operative time, amount of bleeding, complications (including C5 palsy) and survival time were investigated.

Results: There were no cases of worsened neurological deficit and the neurological scores (JOA) were not significantly different. 2 hematoma cases, we should have reoperation. Recovery Rate among two procedures were also same. Surgical time of MIS-LP (average 79 minutes) was significantly superior to conventional procedure (103 minutes). The mean amount of bleeding during MIS-LP(28g) was significantly less than conventional(122g). Nape pain of the MIS-LP (NRS: 2.3) was significantly less than conventional (3.0). And No C5 palsy occurred.

Conclusion: Our minimum invasive laminoplasty is safer and faster than old methods. Then this is one of the best options for minimum invasive cervical surgery and this procedure is necessary for coming ages.