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RADIOGRAPHICAL EVALUATION OF DOUBLE-DOOR LAMINOPLASTY WITH SUTURE ANCHORS: A PRELIMINARY REPORTS

Introduction/Aim

In recent years, laminoplasty using suture anchors has been popularized because of its simple and safe procedure. However, there is little information concerning the performance of its constructs. The purpose of this study was to evaluate the status of hinge and lamina after double-door laminoplasty with the usage of suture anchors, using computed tomography (CT).

Materials and Methods

We examined 128 laminae and hinges from 22 patients (15 males, 7 females; mean age, 66.4 years) who underwent double-door laminoplasty using suture anchors between January 2013 and May 2014, and who underwent CT preoperatively, immediately after the operation and at the follow-up. The presence of hinge fracture or bony fusion of the hinge, as well as the lamina angle, were evaluated using CT scans. A lamina angle at the follow up of $< 60^\circ$ was defined as lamina closure.

Results

Hinge fracture was identified in 10 laminae, one of which had collapsed into the spinal canal. The bony fusion rate was 96.9 %, and was not influenced by hinge fracture. The mean lamina angle was $35.0 \pm 4.8^\circ$ preoperatively, $87.5 \pm 13.3^\circ$ immediately after operation and $82.2 \pm 13.9^\circ$ at the follow up (mean duration after operation, 12.2 months), thus 93.9 % lamina angle value noted immediately after operations was maintained at the follow up. Lamina closure was identified in 7 laminae (5.5 %), and was not affected by age, sex, cervical alignment, causative disease or hinge fracture; however, the closure rate at C3 was significantly higher than that at other levels.

Discussion

The fusion rate with this technique was comparable to that of other techniques, and the lamina angle was adequately maintained. Moreover, this technique was associated with a minimal risk of collapse of the hinges into the canal, which could lead to nerve root or spinal cord injury. This may be due to the straining of the yellow ligament beneath the hinge as the laminae are opened maximally in this technique.

Conclusion

Laminoplasty using suture anchors is a safe and reliable procedure.