

Endoscopic posterior laminectomy for thoracic myelopathy caused by ossification of yellow ligament (OYL).

Hisashi KOGA^{1, 2)}, Satoshi BABA^{1, 3)}, Yasushi OSHIMA^{1, 3)}, Tomoyuki IWAHORI¹⁾, Yuichi TAKANO¹⁾, Hirohiko INANAMI¹⁾

¹⁾ Department of Orthopaedics, Iwai Orthopaedic Medical Hospital , Japan

²⁾ Department of Minimally Invasive Spinal Surgery, Zhangzhou Zhengxing Hospital, China

³⁾ Department of Orthopaedic Surgery, The University of Tokyo, Japan

Abstract

Introduction: Ossification of yellow ligament (OYL) is a well-known cause of progressive thoracic myelopathy mainly observed in the East Asia such as Japanese, Korea, and China. Lower thoracic spine (Th9–12) is occasionally suffered by OYL. Natural course and the prognosis of OYL are still unclear, but at least good surgical results are expected to the patients who already show myelopathy. Generally posterior decompression by open laminectomy has been selected for the treatment of OYL, however dural tear and postoperative kyphosis are main complications of the procedure. We therefore applied endoscopic techniques to thoracic laminectomy and proved the clinical usefulness against myelopathy caused by OYL.

Methods: The endoscopic posterior thoracic laminectomy was performed on seven patients with myelopathy from Jun 2011 to February 2014. All patients are single level involvement, and the most commonly affected segment was the Th10/11 and Th11/12 vertebral body levels (3 cases each). There were 6 men and 1 woman, ranging in age from 35 to 76 years (mean age, 62.3 years). The thoracic OYL was classified as the unilateral, bilateral, and bridged types according to the axial CT scan. All patients were judged as bilateral type, Medtronic METRx™ system (diameter=16mm) was used for all operation. Except for one MILD (Muscle preserved interlaminar decompression) approach, unilateral approach was performed on other 6 patients. During operation motor evoked potentials (MEP) of 6 patients were neurologically monitored.

Results: The mean operation time was 103.6 minutes. Compared with lumbar laminectomy, thoracic procedure apparently prolong the operative

time. We could observe the improvement of MEP monitor on all of the 6 patients after posterior decompression. Dural tear occurred in 1 patient, but without direct repair the patient normally recovered. Although two patients showed the Modic change of corresponding vertebral body, no kyphosis was observed after operation (an average follow-up period is 16 months). No other complication was observed in this study.

Conclusions: The above results show that the endoscopic posterior thoracic laminectomy combined MEP monitoring is a sufficient and safe supplement and alternative to conventional procedures. Especially single vertebral body level and bilateral type of OYL is thought to be the most suitable indication for this procedure.