Author's reply to the letter to the editor of Hiroyuki Yoshihara concerning "C5 palsy following anterior decompression and spinal fusion for cervical degenerative diseases" by M. Hashimoto et al. (2010) Eur Spine J 19:1702–1710

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We thank Dr. Yoshihara for his comments on our manuscript and below provide our responses to his remarks.

It appears that cervical myelopathy is more prevalent in Japan than in the US [1]. This is partly because the Japanese people have narrower spinal canal diameter [2] and a higher incidence of patients have ossification of the posterior longitudinal ligament [3]; both of which are among the major risk factors for cervical myelopathy. In fact, in our 199 cases of anterior cervical surgery series, patients with cervical radiculopathy comprised only 6 cases, while there were as many as 193 patients with cervical myelopathy.

In our series there were no cases of postoperative C5 palsy amongst patients with cervical radiculopathy. All cases of the postoperative C5 palsy were in patients who had cervical myelopathy. What we would like to emphasize here, is that pre-existing asymptomatic damage of anterior horn cells in the grey mater at C3–C4 and C4–C5 disc levels may contribute to the development of postoperative C5 palsy.

There were no cases of postoperative C5 palsy in patients with single-level anterior cervical discectomy and fusion. Fifteen of the 17 C5 palsy cases occurred after two or more anterior corpectomy and spinal fusion procedures. We reported that the greater the number of corpectomy levels involved, the more likely the occurrence of postoperative C5 palsy. Ikenaga et al. [4] reviewed postoperative C5 palsy cases after anterior corpectomy and fusion and postulated that the extent of anterior dural expansion might

have enhanced the incidence of postoperative C5 palsy. That mechanism may be somewhat different from the tethering effect of the nerve rootlet after cervical laminoplasty described by Tsuzuki et al. [5], but also has much in common in that postoperative C5 palsy occurs after longitudinal continuous and extended decompression of the cervical spinal cord.

As Dr. Yoshihara mentions in his letter, some postoperative C5 palsy cases may resolve spontaneously. Postoperative C5 palsy cases with MMT grades of 3 or more have a tendency to fully recover without any additional treatment, as reported in our manuscript. It is probable that even patients with postoperative C5 palsy are themselves less aware of the onset and recovery of the muscle weakness. In our series radiating neck and shoulder pain was recognized 1–7 days (average 3.6) after surgery and muscle weakness developed 2–23 days (average 7.2) after surgery. So we are convinced that in order to detect the onset of postoperative C5 palsy accurately, it is essential to see the patients every day after surgery for at least 1 week.

The etiology of postoperative C5 palsy remains controversial. We hope that our recently published paper that proposed a "double-lesion" hypothesis may contribute to elucidating the etiology of postoperative C5 palsy. We would like to conduct further studies of postoperative C5 palsy and shed light on this clinically important and unsolved issue.

Conflict of interest No conflict.

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