Neurological Complications of Microsurgical Anterior Cervical Foraminotomy for Spondylotic Radiculopathy
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INTRODUCTION: As a less invasive surgical technique, a microsurgical anterior cervical foraminotomy has been used to treat cervical spondylotic radiculopathy. This study is first reported on neurological complications after performing this surgery.

METHODS: Since 1996, in patients with cervical foraminal stenosis due to degenerative spondylotic changes without cervical foraminal disc herniation who had treated with conservative treatment over 1 year and their chronic radicular pain and numbness still remained, the authors performed the anterior cervical foraminotomy. There were 57 men and 22 women. Mostly, C4-5, C5-6, or C6-7 levels were treated with this surgery in total 79 patients.

RESULTS: Of them 4 patients were occurred a deltoid muscle weakness immediately postoperatively. There were 3 men and 1 woman. All of them had suffered from radiculopathy on the shoulder and the upper thumb. They were diagnosed as a foraminal stenosis at C4-5 or C5-6 level by MRI and CT scan. The deltoid muscle weakness occurred immediately in cases involved C5 after anterior cervical foraminotomy. As a result of re-exploration and post immediate CT scan, we found out the reason of paralysis. The C5 superior dorsal rootlets are shorter and their angle is less inferiorly from the cervical cord than other dorsal cervical roots. Accordingly, the remnant bone spur fragment and posterior longitudinal ligament were complexed with loose soft tissues due to the greatest extent of compression by vertebral artery. We promptly performed the revision which was extended the hole and decompressed enough nerve roots on the same day or post 1 day. All patients were improved their muscle weakness as normal after further several months.

CONCLUSIONS: In order to avoid the neurological complications when perform the anterior cervical foraminotomy at C4-5 or C5-6 especially, it should be needed complete removal the outer wall and soft tissues of uncus and enough decompression for the nerve roots through more than 10mm making hole.