Posterior Correction Surgery of Progressive Degenerative Cervical Spondylolisthesis - A Case Report

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Abstract

Degenerative spondylolisthesis of the cervical spine is relative rare. We present a relative rare case of severe degenerative cervical spondylolisthesis with posterior corrective fusion. A 70-year-old female complained of neck pain and gait disturbance with cervical spondylotic myelopathy. Plain radiographs showed 8.3 mm anterolisthesis of C3/C4, which gradually progressed during four years. The slip was not reduced by flexion and extension position. After releasing C3/C4 facet joint and yellow ligament, posterior reduction with instrumentation were performed and resulted in successful cervical correction and fusion.

Keywords: Degenerative cervical spondylolisthesis; Cervical spondylotic myelopathy; Posterior correction surgery

Introduction

Degenerative spondylolisthesis of the lumbar spine is a common disease, which main causes are arthrosis of the facet joints and disc degeneration. These changes may occur at single or multiple motion segments [1]. However in the cervical spine spondylolisthesis is rarely seen and only few publications are dedicated to this topic. Boulou et al. reported that these patients show signs of neck pain and several neurological deficits [2]. But the precise pathophysiology and surgical strategies have not been fully understood. We recently encountered a case of degenerative cervical spondylolisthesis that gradually progressed during four years. The patient gave informed consent for data concerning her case to be submitted for publication.

Case Presentation

A 70-year-old woman presented to our hospital complaining of chronic neck pain and gait disturbance that was getting worse associated with numbness and weakness in her limbs for seven months. The patient has had no traumatic accident and past history that induced the destructive spondyloarthropathy. And she was a housewife and not obliques to flex her neck in her life style. The neurological examination revealed the weakness of the distal upper limbs with MMT 4, and the hyperreflexia in upper and lower limbs.

The chronological cervical radiographs showed that the C3/C4 degenerative spondylolisthesis was gradually progressed in association with the deformity and thinning of the facet joint during four years (Figure 1). The preoperative radiographs showed that the severe spondylolisthesis was rigid and fixed with flexion and extension (Figure 2). Computed tomography (CT) myelography demonstrated that the slippage of C3 over C4 with severe degenerative spondylolisthesis and spinal canal stenosis (Figure 3).

C3/C4 partial laminectomy, bilateral partial facetectomy and flavectomy were carried out, and C2-C5 posterior correction surgery with instrumentation were performed using the cantilever technique that we firstly connected the C4 and C5 lateral mass screw with the pre-bending rod and reduced the C2 pedicle screw and C3 lateral mass screw on the right side (Figure 4). The surgery took 153 minutes, with an estimated blood loss of 20 ml. The postoperative CT and MRI showed that the spondylolisthesis and canal stenosis was severe and the C3/C4 facet joint was destructive and thinning.

Keywords: Degenerative cervical spondylolisthesis; Cervical spondylotic myelopathy; Posterior correction surgery

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In conclusion, we present a relative rare case of progressive degenerative cervical spondylolisthesis with posterior corrective fusion. The clinicians should select surgical option in accordance with the respective pathophysiology of degenerative cervical spondylolisthesis.

Competing Interests
The authors declare that they have no competing interests.

Author’s Contributions
MT and MK made substantial contributions to the conception and design, and the acquisition, analysis, and interpretation of data. All authors read and approved the final manuscript.

References