A case of T2 radiculopathy after anterior C5–6 fusion

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Abstract

Thoracic radiculopathy is a rare entity. Symptomatic adjacent-segment disease after anterior cervical fusion occurs commonly in the lower cervical spine segment. We describe the clinical presentation and treatment of T2 radiculopathy after C5–6 anterior fusion. A 60-year-old man presented with the right axillary pain for 3 months. He had undergone C5–6 anterior fusion for cervical spondylosis 5 years prior. Computed tomography (CT) and magnetic resonance images showed T2–3 degenerative disease. C5–6 anterior fusion exacerbated the T2–3 segment involved in the patient’s scoliotic deformity. After 2 months of conservative treatment, we decompressed the T2 foramen via T2–3 hemilaminectomy and partial facet resection. After the surgery, his symptoms disappeared. T2 radiculopathy is rare but should be considered in the differential diagnosis of chest pain. Surgeons should pay attention not only to adjacent-segment disease but also to segmental degeneration at the apex of a scoliotic deformity after cervical anterior fusion.

INTRODUCTION

The thoracic spine is mechanically stabilized by the rib heads and facet joints. Therefore, thoracic radiculopathy due to degenerative root canal stenosis is a rare entity. Here, we present a patient with right T2 nerve root canal stenosis with pain in the right axilla and posteromedial arm. He had undergone C5–6 anterior fusion for cervical spondylosis 5 years prior. C5–6 anterior fusion exacerbated the T2–3 segment involved in the patient’s scoliotic deformity.

CASE REPORT

A 60-year-old man presented with 3 months of progressive pain in the right axilla and posteromedial upper extremity. He had undergone C5–6 anterior fusion for cervical spondylosis 5 years prior (Fig. 1B). He had returned to his job as a taxi driver after the anterior fusion. He did not have any traumatic injury or traffic accidents after his anterior fusion. His numerical pain scale rating was 10/10. Examination revealed no sensory disturbance, no abnormal tendon-jerk reflexes and progression of muscle weakness. Cervicothoracic scoliosis had been diagnosed before his anterior cervical fusion (Fig. 1A). Roentgenograms showed scoliosis with a right cervicothoracic curvature with a Cobb angle of 17 degrees before his anterior fusion (Fig. 1A) and 19 degrees on referral to our hospital (Fig. 1B). In addition, computed tomography (CT) scanning revealed bone spurs of the C6–7 facets (Fig. 2F). Magnetic resonance (MR) imaging showed a decrease in intervertebral height, but the nerve root canal was preserved at the C6–7 level. CT images also showed osteophytes of the superior costal facet and articular process at the T2–3 level (Fig. 2B–D). MR images demonstrated a protruded disc at the T2–3 level (Fig. 2E and F).

The width and height of the nerve root canal on the right measured 6.4 mm and 4.2 mm at C7 and 5.2 mm and 5.1 mm at T2, respectively [1]. The right C7 and T2 nerve root canals were narrow compared to left side (left C7 width 8.0 mm, height 8.2 mm; left T2 width 9.9 mm, height 10.5 mm). From C5–T4, mean width was 9.4 ± 1.8 mm and mean height was 9.2 ± 2.4 mm. Before anterior cervical fusion, the width and height of the nerve root canal on the right at T2 had been 7.4 mm and 5.0 mm and on the left had been 8.6 mm and 12.2 mm, respectively.
DISCUSSION

Symptomatic thoracic spinal root canal stenosis is regarded as a rare entity. The causes of thoracic radiculopathy include bulging disc, herniated disc, bone spur, spinal canal stenosis or foraminal stenosis. In this patient, osteophytes of the intervertebral joint and the superior costal facet at T2–3 caused right T2 foraminal stenosis. There was no improvement for 2 months with conservative medical treatments.

We performed right T2–3 hemilaminectomy and partial facet resection. After the surgery, his symptoms were remarkably improved. Postoperative CT imaging showed decompression of the T2–3 thoracic nerve root canal (Fig. 2A). Six months later, his pain had completely disappeared.

Blood tests, electrocardiogram, electromyogram, somatosensory evoked potential (SSEP) and head MR imaging were all normal. These data provided no evidence of intracranial, peripheral nerve or coronary artery disease. This patient displayed no C7 radiculopathy and had neither delay nor disappearance of SSEP in the median nerve distribution. We therefore diagnosed his symptoms as T2 radicular pain secondary to T2–3 foraminal stenosis. There was no improvement for 2 months with conservative medical treatments.

We report a case of symptomatic T2–3 foraminal stenosis caused by bone spurs of facets and vertebral bodies (F and H). MR imaging of protruded disks at the T2–3 level (G). Postoperative CT shows the decompression of the right T2–3 thoracic nerve root canal (G).

(See Fig. 2A). These findings indicate that the nerve root canals on the right at C7 and T2 were degenerative.

None declared.

REFERENCES