C43

Late Onset Radiation-induced Camptocormia

Bomi Sul[1*†], Joon Sung Kim[1], Seong Hoon Lim[1], Bo Young Hong[1], Jae Wan Yoo[1]

The Catholic University of Korea St. Vincent`s Hospital , Department of Rehabilitation Medicine[1]

Case Report

A 60-year-old male patient presented with back pain which is aggravated by walking or using the stairs. 22 years ago, he was diagnosed with non-Hodgkin's lymphoma (NHL) with extranodal involvement of spleen. He received chemotherapy containing cyclophosphamide, doxorubicin, vincristine, and prednisone. Relapse occurred in his right axilla with palpable mass in the spleen three years later, and he underwent radiotherapy (30.6 Gy in daily fractions of 1.8 Gy, 5 times per week) without significant acute toxicity. 17 years after completion of radiation therapy, he noticed an insidious onset of backache which increases by walking, and there was a strong tendency to flex the spine forward. He had no other significant medical history and was not taking neuroleptic medication. He did not have any family history of neuromuscular disease or any significant traumatic event. On inspection, a pronounced atrophic change of his lumbar paraspinal muscles was noticed (Figure 1). Sensation and muscle strength were measured normal in all extremities, but he complained of weakness while trying to extend his back. There were no extrapyramidal signs and no bladder or bowel disturbances. Magnetic resonance imaging (MRI) of the spine showed pronounced fatty degeneration of the thoracolumbar paraspinal muscles (Figure 2). In further investigations, electromyography of the paraspinal muscles demonstrated markedly decreased insertional activities. Serum test revealed elevation of creatine kinase (1118) and lactate dehydrogenase (579). A muscle biopsy on mid-thoracic paraspinal muscle was performed, and it only showed results of fatty change.

Discussion

Camptocormia, also known as 'bent spine syndrome,' is characterized by abnormal posture of the trunk with marked flexion of the thoracolumbar spine, which increases during walking and decreases in recumbent position. It is considered as a form of radiation-induced movement disorders, with 'dropped head syndrome' being the most common among them. The pathophysiology is not known, although paresis of the paraspinal muscles after radiotherapy is more likely to be of myopathic origin than neuropathy/plexopathy as in paresis of more distal muscles. Most cases of radiotherapy-induced movement disorders are reported in Hodgkin's disease. According to one previous study, the interval from radiotherapy to diagnosis ranged from 2 to 42 years, with the median of 17 years. The preferential occurrence is more likely to be related to the size of the radiation fields and the doses of the radiotherapy. One study hypothesized that a total dose of conventionally fractionated 30 Gy might be more tolerable for muscular function. There is no cure for camptocormia or 'dropped head syndrome,' however; for prevention, sparing of the paraspinal muscles from radiotherapy fields is

desirable. If inevitable, consideration of long-term consequences is needed when prescribing high-dose radiation therapy to the paraspinal region.

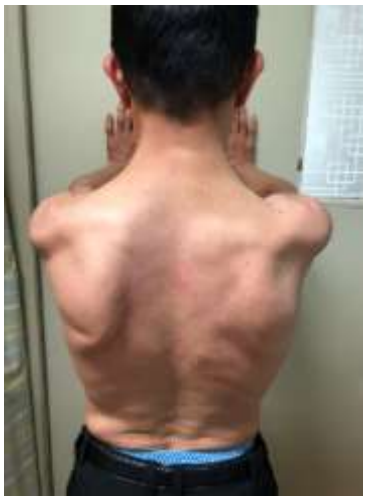

Fig 1. Atrophy of lumbar paraspinal muscles and skin fibrosis

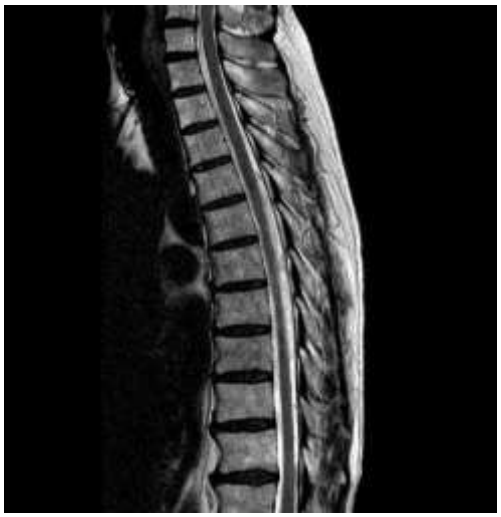

Fig 2-1. T2-weighted magnetic resonance imaging showing hyperintense degeneration of the thoracic paraspinal muscles

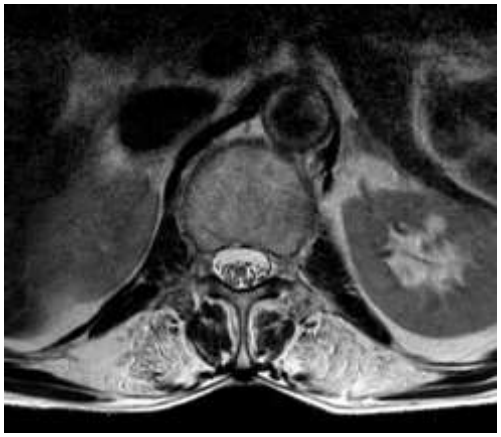

Fig 2-2. T2-weighted magnetic resonance imaging showing hyperintense degeneration of the lumbar paraspinal muscles at the level of L1