

1 **Abstract**

2 [BACKGROUND]

3 Ossification of the posterior longitudinal ligament (OPLL) rarely causes cervical and/or
4 thoracic myelopathy.

5 [RESEARCH QUESTION]

6 To clarify the differences in the clinical features of patients undergoing cervicothoracic
7 spinal surgeries for OPLL-associated compression myelopathy or degenerative diseases
8 (spinal stenosis/ herniated disk).

9 [DESIGN]

10 We retrospectively reviewed 261 consecutive patients who underwent cervicothoracic
11 surgery by orthopaedic service for OPLL-associated compression myelopathy or for
12 degenerative diseases during July 2010–December 2016 at our hospital. We classified the
13 patients as follows: cervical degenerative diseases (CD), thoracic degenerative diseases
14 (TD), cervical OPLL (cOPLL), and thoracic OPLL (tOPLL). The baseline characteristics
15 including age, sex, height, weight, body mass index (BMI), history of DM, and

preoperative insulin use were retrieved and analyzed.

[RESULTS]

There were 201 patients with CD, 9 with TD, 45 with cOPLL, and 6 with tOPLL (mean ages were 62.5, 68.0, 64.0, and 59.0 years, respectively). The mean BMI of patients with tOPLL was significantly higher than that of patients with other conditions (24.0 vs 23.2 vs 25.0 vs 31.4 kg/m², $p < 0.05$). The patients with tOPLL had a significantly higher presence of DM than patients with other conditions (16.9 vs 33.3 vs 8.9 vs 66.7%, $p < 0.05$).

Although it was not statistically significant, the rate of regular use of insulin for DM was high among patients with tOPLL.

[DISCUSSION]

Patients with tOPLL had a higher metabolic derangement and impaired glucose tolerance than those with cOPLL or degenerative diseases. Although similar findings were reported in other studies, the mechanisms for these findings remain unclear. Genetic and environmental factors might be involved in such tOPLL cases. Moreover, a higher incidence of obesity and DM was associated with high intraoperative and perioperative complication rates for

31 patients with tOPLL.