Thoracic ossification of the posterior longitudinal ligament (TOPLL) is a rare condition associated with ectopic bone formation in the thoracic spine. A long-term follow-up study from Japan shows significant and lasting improvement in outcomes with posterior decompression and fixation surgery for patients with T-OPLL, according to a study in the
"Surgical treatment of T-OPLL is effective in improving neurological function, quality of life, and pain management over an extended period," according to the new research by Hiroaki Nakashima, MD, Ph.D., and colleagues of Nagoya University Graduate School of Medicine.

**New evidence on long-term outcomes of surgery for T-OPLL**

Patients with ossification of the posterior longitudinal ligament have ectopic bone growth in the spinal column, resulting in neurological signs and symptoms. Most cases involve the cervical spine. Although thoracic involvement is less common, it is prone to delayed diagnosis and often goes undetected until severe symptoms develop. Japan has the highest prevalence of T-OPLL.

Studies of operatively treated T-OPLL have reported better outcomes when spinal decompression is combined with fixation. To assess the long-term outcomes of this procedure, the researchers analyzed follow-up data on 51 patients undergoing posterior decompression and corrective fixation surgery for T-OPLL.

The patients, who had an average age of 51.6 years, underwent surgery at the study center between 2001 and 2014, with follow-up of at least 10 years. Severity was assessed using the Japanese Orthopedic Association (JOA) score. Other assessments included back and leg pain, quality of life (QoL), and radiographic outcomes.

'Long-term stability and structural improvements' after decompression and fixation
The average JOA score improved significantly from 3.7 preoperatively to 7.9 at two years after surgery, remaining stable thereafter. These scores indicated "sustained neurological and functional improvement from surgery over the long term," the researchers write.

Decompression and fixation also yielded lasting improvement in patient-reported outcomes, including QoL (EQ-5D score). Numeric rating scale pain scores decreased from 5.4 preoperatively to 3.5 at 10 years for back pain and from 4.0 to 3.0 for leg pain. Radiographic outcomes included reduction in Cobb angles for T1-T12 in sagittal plane and kyphosis.

Eleven patients had progression of ossification, largely within the first five years. A total of 14 patients experienced postoperative complications, including six within the first 30 days postoperatively and eight thereafter. Perioperative complications included lower limb paralysis, infection, and hematoma, whereas later complications were mainly adjacent vertebral fractures. A total of four patients underwent an additional surgical procedure during follow-up.

The study provides new long-term follow-up data on the outcomes of decompression and fixation for T-OPLL, including persistent gains in clinical and patient-reported outcomes. Although some patients developed distal junctional failure or required reoperation, "these complications and interventions did not substantially detract from the overall QoL improvement," Dr. Nakashima and co-authors conclude. "The imaging results showed minimal progression of ossification beyond two years postoperatively, contributing to the long-term stability and structural improvements observed in the patients."
