Introduction:
Ossification of the ligamentum flavum is a rare disease affecting primarily those of Asian descent, particularly Japanese. It is most prevalent in the lower thoracic spine. This entity is surgically treatable, typically via decompressive laminectomy with or without fusion. Surgical outcomes are generally good and depend on the severity of preoperative symptoms.

Methods:
A review of the literature for surgical treatments of ossification of the ligamentum flavum was performed along with a case presentation of a laminoplasty technique to address multilevel thoracic ossification of the ligamentum flavum.

Results:
Our case involves a 43 year old female with X-linked hypophosphatemic rickets with ossification of the ligamentum flavum causing compression of the central canal and neuroforamina from T3 to T11. She presented with progressive thoracic radiculopathy and myelopathy. Since the patient was young and otherwise healthy we had concern for long-term sequelae of laminectomies with or without fusion. The patient underwent modified en bloc laminectomies from T3 to T11 in which lamina were detached bilaterally and reflected superiorly with preservation of the posterior tension band. This allowed us to remove abnormal ossification using a high speed drill, rongeurs and ultrasonic aspirator. The autologous lamina were then reattached at their native levels using plate fixation. Postoperative CT demonstrated expected improvement in compression. Our patient did well postoperatively and was discharged post-operative day six.

Conclusion:
Multilevel en bloc laminectomy with laminoplasty to treat ossification of the ligamentum flavum is a novel application of a surgical technique that adequately addresses compressive pathology while accomplishing postoperative stability and prevention of kyphosis by preservation of the posterior tension band without need for fusion. Similar techniques have been described after thoracic tumor resection, but we believe that this is the first description of use of this specific technique for ossification of the ligamentum flavum.

Figure 1:
Preoperative (A,B) and postoperative (C, D) CT scans showing good decompression of canal with preservation of posterior structures.