In the cervical spine, removing the lamina completely can cause problems with the stability of the facet joints between each vertebra. If the joints are damaged during the laminectomy, the spine may begin to tilt forward. This is what is responsible for causing an “iatrogenic” problem such as kyphosis.

An iatrogenic cervical kyphosis can also occur after a failed attempt at a cervical spine fusion. Problems can arise if the fusion is too short, meaning there are not vertebrae included in the fusion. In this case, the spine will begin to “bend” over the top of the fusion site. As the imbalance continues, a cervical kyphosis will result.

The incidence of cervical kyphotic deformity after multilevel cervical laminectomy is 20% [1]. Older patients may have partially fused cervical spines and are more stable. Thus, postoperative kyphosis is more common in younger patients. Laminectomy includes removal of the spinous processes, inter and supraspinous ligaments, laminae and ligamentum flavum and loss of capsules of facet joints that compromise the posterior stabilizers. Continuing normal flexion forces results in kyphosis. Kyphosis develops gradually, which is why patients are usually well in the early postoperative period. Constant contraction of neck extensor muscles will occur, causing muscle fatigue and neck pain. Progressive kyphosis in children leads to anterior vertebral wedging due to compression of growing cartilaginous endplates. Sagittal malalignment and axial neck pain are the main issues regarding postlaminectomy kyphosis while neurological deficit is rarely encountered. Traction often can restore the cervical alignment to the immediate postoperative alignment in the early postoperative period. Laminectomy should be avoided in young patients without cervical lordosis. Posterior facet joints should not be disrupted intraoperatively. Fusion should be considered for these patients at the same procedure.

Scheer et al details mechanisms by which cervical kyphotic deformity potentially leads to adjacent-segment disease (ASD) and discusses previous studies that suggest how postoperative sagittal malalignment may promote ASD. Further clinical studies are needed to explore the relationship of cervical malalignment and the development of ASD. Sagittal alignment of the cervical spine may play a substantial role in the development of cervical myelopathy as cervical deformity can lead to spinal cord compression and cord tension. Surgical correction of cervical myelopathy should always take into consideration cervical sagittal alignment, as decompression alone may not decrease cord tension induced by kyphosis. Awareness of the development of postlaminectomy kyphosis is critical as it relates to cervical myelopathy. The future direction of cervical deformity correction should include a comprehensive approach in assessing global cervicalpelvic relationships. Just as understanding pelvic incidence as it relates to lumbar lordosis was crucial in building our knowledge of thoracolumbar deformities, T-1 incidence and cervical sagittal balance can further our understanding of cervical deformities. Other important parameters that account for the cervical-pelvic relationship are surveyed in detail, and it is recognized that all such parameters need to be validated in studies that correlate HRQOL outcomes following cervical deformity correction [2]

1)
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2)
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