ARCH LAMINOPLASTY AND LATERAL MASS SCREWS FOR CERVICAL MYELORADICULOPATHY WITH REVERSAL OF CERVICAL LORDOSIS

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Introduction:

Cervical myelopathy, with or without radiculopathy, is a common cause of spinal cord compression in the advanced age population. The cause is usually a multilevel cord compression, which is often treated by laminoplasty. This is however, not an ideal procedure in cases where there is reversal of the cervical lordosis and the potential for instability. We have treated this condition by extensive cervical decompressive laminectomy (C3 to C6 or C7) and lateral mass/pedicle screw stabilization. The laminar defect that this procedure produces generally does not present danger to the exposed spinal cord from direct injury, but frequently produces an unsightly divot in the center of the incision. This is commonly seen in elderly thin-neck women. In some instances the remaining spinous processes protrude against the skin threatening perforation and may contribute to post operative pain. We have devised a new technique of laminar arch reconstruction following decompression that eliminates this problem and re-establishes the posterior tension band.
Methods:

The technique consists of creating lateral troughs at the decompressed levels using a high-speed drill without removing the interspinous ligament. The whole interspinous and ligamentum flavum/laminar arch complex is lifted in one piece with a single point of attachment at the rostral end of the decompression. It is subsequently repositioned over the decompression and secured to the rods of the construct. This technique was utilized in 18 patients.
Results:

Eighteen patients underwent laminar arch laminoplasty and lateral mass screw fixation. Preservation of the posterior tension band was achieved with cosmetically favorable results.
Conclusion:

The arch laminoplasty with lateral mass screw fixation provides both a biomechanically and cosmetically favorable result in cases of cervical myeloradiculopathy with reversal of lordosis.
Arch laminectomy attached rostrally by ligamentum flavum
Laminar arch re-approximated over a collagen matrix dural substitute and fastened to the metal construct

Laminar arch suspended to paraspinal musculature
Preoperative T2 MRI

Postoperative T2 MRI