



A Case of Cervical Myelopathy Due to C2 to C7 Canal Stenosis Secondary to Ossification of Posterior Longitudinal Ligament Treated With Cervical Laminoplasty Using Ethibond Suture Material

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Abstract

Introduction

Cervical myelopathy is a common degenerative disorder caused by compression on the spinal cord that is characterised by weakness tingling and numbness in

the upper limbs and gait imbalance. Nurick classification is commonly used classification based on clinical condition of the patient.

Nurick Classification
Grade 0 - Root symptoms only or normal
Grade 1 - Signs of cord compression; normal gait
Grade 2 - Gait difficulties but fully employed
Grade 3 - Gait difficulties prevent employment, walks unassisted
Grade 4 - Unable to walk without assistance
Grade 5 - Wheelchair or bedbound Based on gait and ambulatory function

My Patient was in Grade 4 preoperatively and improved to Grade 0 postoperatively after 3 weeks.

Case Report

A 42 year old male patient presented with c/o weakness in bilateral upper limbs since 1 month associated with postural instability. It was associated with numbness and tingling in B/L upper extremities.

On general examination the patient was found to have a wide based gait. Local examination of the cervical spine revealed no local swelling or redness and no loss of normal cervical lordosis. No scars or discharging sinuses or engorged veins were present on inspection. Palpation of the spine showed no local rise of temperature / tenderness.

Motor examination revealed the following findings

Test	Right	Left
Tone	Spastic hypertonia	Spastic hypertonia
Upper limb power	3/5	3/5
Lower limb power	4/5	4/5
Hand Grip	60%	80%

Reflexes

Reflex	Right	Left
Biceps	3+	3+
Triceps	3+	3+
Supinator	3+	3+
Hofmann's	Positive	Positive
Knee	3+	3+
Ankle	4+	4+
Ankle Clonus	Present	Present

Babinski's sign: Positive Bilaterally.

Romberg's test: Positive with eyes closed

Investigations

- Cervical and Lumbosacral spine X ray
- MRI of Cervical Spine with Whole Spine Screening

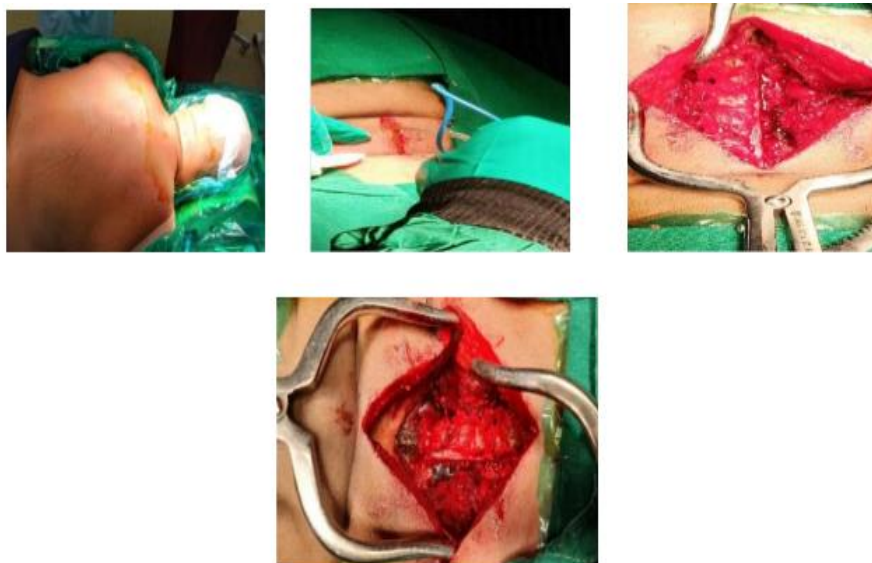
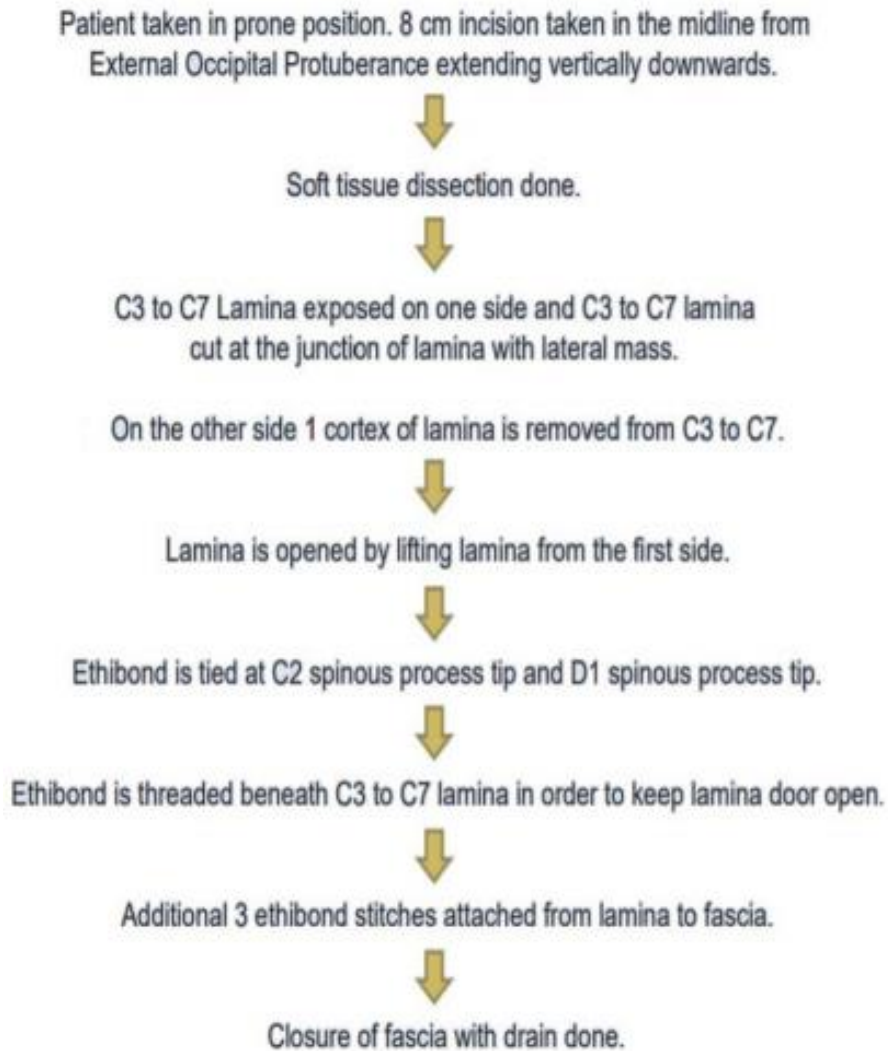
Impression

Significant PLL (posterior longitudinal ligament) thickening is seen from C2 to D2 vertebral level causing moderate to severe central canal stenosis and compression of the underlying cervico-dorsal cord. Cord shows patchy T2 hyperintense signal at C2, C3, C5 and C6 levels suggestive of cord edema / myelomalacia.



Fig. 1: Cervical Spine X-ray and MRI

SURGERY DONE Posterior Cervical Open door Laminoplasty with Ethibond Surgical Procedure



Post operatively, the patient was made to sit on POD 1 and walking without support was started on POD 2. Patient was not complaining of postural instability post surgery.

Motor examination revealed the following:

Test	Right	Left
Tone	Normal	Normal
Upper limb power	4/5	4/5
Lower limb power	4/5	4/5
Hand Grip	80%	80%

Reflex	Right	Left
Biceps	2+	2+
Triceps	2+	2+
Supinator	2+	2+
Hofmann's	Negative	Negative
Knee	2+	2+
Ankle	2+	2+
Ankle Clonus	Absent	Absent
Plantar Reflex	Flexor (Normal)	Flexor (Normal)

Advantages of This Procedure

- Laminoplasty prevents the development of postoperative kyphosis of cervical spine which is common post laminectomy.
- Laminoplasty is usually performed with the usage of implant fixation. Here we have done a new approach to laminoplasty using Ethibond suture material without usage of any implant which has eliminated the cost of implant and post operative stiffness seen with the implant fixation at the same stability provided by the implant.

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Conclusion

Test Right Left Tone Normal Normal Upper limb power 4/5 4/5 Lower limb power 4/5 4/5 Hand

Grip 80% 80% We would like to conclude that the approach to Laminoplasty of cervical spine in a case of cervical canal stenosis using Ethibond suture material is an efficient and cost effective technique.

References

1. Wang MY, Shah S, Green BA. Clinical outcomes following cervical laminoplasty for 204 patients with cervical spondylotic myelopathy. *Surg Neurol* 2004;62:487-92.
2. An HS, Al-Shihabi L, Kurd M. Surgical treatment for ossification of the posterior longitudinal ligament in the cervical spine. *J Am Acad Orthop Surg* 2014;22:420-9.
3. Shinomiya K, Okamoto A, Kamikozuru M, Furuya K, Yamaura I. An analysis of failures in primary cervical anterior spinal cord decompression and fusion. *J Spinal Disord* 1993;6:277-88.
4. Sodeyama T, Goto S, Mochizuki M, Takahashi J, Moriya H. Effect of decompression enlargement laminoplasty for posterior shifting of the spinal cord. *Spine (Phila Pa 1976)* 1999;24:1527-31.
5. Baisden J, Voo LM, Cusick JF, Pintar FA, Yoganandan N. Evaluation of cervical laminectomy and laminoplasty. A longitudinal study in the goat model. *Spine (Phila Pa 1976)* 1999;24:1283-8.
6. Fields MJ, Hoshijima K, Feng AH, Richardson WJ, Myers BS. A biomechanical, radiologic, and clinical comparison of outcome after multilevel cervical laminectomy or laminoplasty in the rabbit. *Spine (Phila Pa 1976)* 2000;25:2925-31.
7. Steinmetz MP, Resnick DK. Cervical laminoplasty. *Spine J* 2006;6:274S-81S.
8. Kang SH, Rhim SC, Roh SW, Jeon SR, Baek HC. Postlaminoplasty cervical range of motion: Early results. *J Neurosurg Spine* 2007;6:386-90.
9. Kim SJ, Song JH, Kim MH, Park HK, Kim SH, Shin KM, et al. The prognostic implications of radiological findings after laminoplasty in cervical myelopathy patients. *J Korean Neurosurg Soc* 1997;26:961-70.
10. Benzel EC, Lancon J, Kesterson L, Hadden T. Cervical laminectomy and dentate ligament section for cervical spondylotic myelopathy. *J Spinal Disord* 1991;4:286-95.
11. Nurick S. The pathogenesis of the spinal cord disorder associated with cervical spondylosis. *Brain* 1972;95:87-100.