

RESTORATION OF NORMAL CERVICAL LORDOSIS



Unlike axial linear traction, Expanding Ellipsoidal Decompression (EED®) successfully decompresses joints and enhances or restores the lordotic curve.

By C. Norman Shealy, MD, PhD

Cervical pain is one of the most common symptoms in today's society. Indeed, in our personal clinical experience, well over 90% of patients with headache have a cervical component easily observed with physical examination and which reveals abnormal cervical posture. Among other conventional treatments, axial linear traction (ALT) has been used with a variety of designs and weights of 20-25 lbs. This type of traction clearly straightens or even reverses the normal cervical curve and often results in temporomandibular joint pain. The current study was carried out to compare axial linear traction and Expanding Ellipsoidal Decompression (EED®) with Posture Pump®.

Normal cervical posture presents with a lordotic curve of approximately 43 degrees measured from C2 to C7.¹ Without this normal lordosis, most often the balance of the weight of the head is tilted forward and thus creates increased wear and tear on the intervertebral discs and the vertebral bodies. This eventually leads to bony spurs and osteophytes.² Such changes also lead to decreased mobility of the cervical spine and to cervical pain.

Research Protocol

In an Institutional Review Board-approved study, 36 individuals were enrolled for a program in which a baseline MRI was taken and then each subject experienced EED and axial linear traction. All such subjects had chronic neck pain with no neurologic symptoms. During the screening process, several individuals were ruled out because of excessively severe degenerative changes. Interestingly, one individual was found to have rheumatoid spondylitis with virtual fusion of the cervical spine even though he only had moderate cervical pain. Another individual was found to have a large epidural neurilemoma and was

referred for surgery even though his only complaint at the time was cervical pain. One of the 36 subjects also had a huge ruptured cervical disc but responded well to the EED treatment. Subjects randomly alternated between receiving axial linear traction or EED first. Subjects were subjected to another MRI during the traction or EED and then rested. A gentle warm-up was done prior to receiving the EED therapy—whether it was initially or secondary to the axial linear traction—and the patients were made comfortable with knee bolsters and warm blankets. The same warm up over several minutes was done for ALT with a gentle increasing/decreasing distraction.

TABLE 1. Cervical Curve Changes from Baseline: EED vs. Axial Linear Traction

After EED® via Posture Pump®	After Axial Linear Traction
Improved: 26 of 36 = 72.2%	Improved: 3 of 36 = 8.3%
Maintained: 6 of 36 = 16.6%	Maintained: 3 of 36 = 8.3%
Compromised: 4 of 36 = 11.1%	Compromised: 30 of 36 = 83.3%

Results

With axial linear traction, the cervical lordotic curve was flattened or even buckled posterior into kyphosis in 83% of subjects with a variety of variations in the degree of such change. On the other hand, when EED was applied via Posture Pump, joints were decompressed and the lordotic curve was enhanced or restored. Cervical curves were actually compromised or made worse in 30 of 36 subjects during ALT. In contrast, the cervical curve during EED via the Posture Pump was improved in 26 of 36 subjects. None of the subjects had any significant discomfort during the procedure (see Table 1).

In all 36 subjects, the posture during EED was superior to that with axial linear traction. Despite the fact that the curvature was significantly worsened with axial linear traction, in only one subject was there a significant increase in posterior disc bulging and this was subsequently improved during the application of EED.

Discussion

Certainly the unexpected findings of a neurilemoma which, without surgery, would have progressed to severe neurologic deficit and undiagnosed rheumatoid spondylitis in another of the approximately 40 total patients screened for this procedure, raises an issue of differential diagnosis which one must

always take into account when considering any type of palliative therapy.

Although both axial linear traction and EED via Posture Pump are both remarkably safe approaches, any patient with persistent cervical pain who does not respond well to initial therapy should be considered for an MRI. While axial linear traction separates the posterior portion of the disc, it does so at the expense of the normal postural biomechanics of the cervical spine. In contrast, EED via Posture Pump separates the disc evenly in a ratio corresponding to the discs natural wedged shape, while dramatically improving the normal postural biomechanics of the cervical spine.

Other aspects of this study, such as disc height and overall disc appearance, will be presented in a separate paper. In an earlier paper, we demonstrated that EED via Posture Pump provided clinical and MRI confirmation of improvement in most individuals after one 20-minute treatment.³

The current findings emphasize the additional benefit of EED via Posture Pump in improving cervical anatomy along with significant symptomatic improvement in cervicogenic pain. ■

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