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Dermatomal somatosensory evoked potential demonstration of nerve root decompression after VAX-D therapy.

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Reductions in low back pain and referred leg pain associated with a diagnosis of herniated disc, degenerative disc disease or facet syndrome have previously been reported after treatment with a VAX-D table, which intermittently distracts the spine. The object of this study was to use dermatomal somatosensory evoked potentials (DSSEPs) to demonstrate lumbar root decompression following VAX-D therapy. Seven consecutive patients with a diagnosis of low back pain and unilateral or bilateral L5 or S1 radiculopathy were studied at our center. Disc herniation at the L5-S1 level was documented by MRI or CT in all patients. All patients were studied bilaterally by DSSEPs at L5 and S1 before and after VAX-D therapy. All patients had at least 50% improvement in radicular symptoms and low back pain and three of them experienced complete resolution of all symptoms. The average pain reduction was 77%. The number of treatment sessions varied from 12 to 35. DSSEPs were considered to show improvement if triphasic characteristics returned or a 50% or greater increase in the P1-P2 amplitude was seen. All patients showed improvement in DSSEPs after VAX-D therapy either ipsilateral or contralateral to the symptomatic leg. Two patients showed deterioration in DSSEPs in the symptomatic leg despite clinically significant improvement in pain and radicular symptoms. Overall, 28 nerve roots were studied before and after VAX-D therapy. Seventeen nerve root responses were improved, eight remained unchanged and three deteriorated. The significance of DSSEP improvement contralateral to the symptomatic leg is emphasized. Direct compression of a nerve root by a disc herniation is probably not the sole explanation for referred leg pain.

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