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Prognostic Value of Somatosensory Evoked Potentials In Surgical Treatment of Lumbar Intervertebral Disc Prolapse

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By

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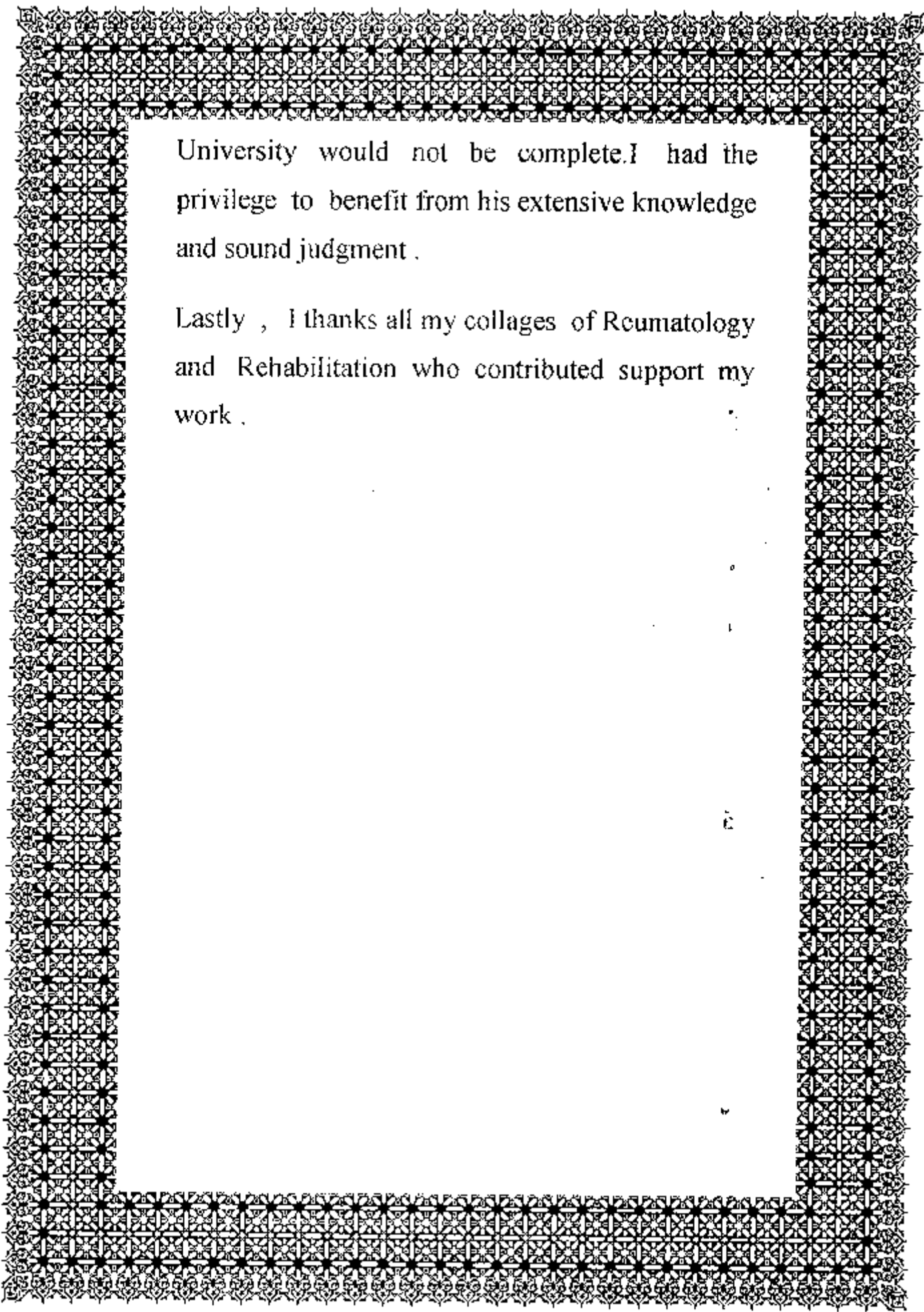
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INTRODUCTION AND AIM OF THE WORK

Introduction & Aim of work

Pain in the lumbosacral region is one of the most common ailments affecting mankind and is the major cause of work related disability (Basbaum and Fields 1987).

Protrusion of lumbar intervertebral disc is a major cause of severe and chronic or recurrent low back and leg pain. It's most likely to occur between the fourth and fifth lumbar and the, fifth lumbar and first sacral vertebra (over 90% of disc disease patients)and with lessening frequency between third and fourth lumbar vertebra (7 % of patients)(Stevens 1981 Paul and Nelson 1997).

The neurological consequences that may developed depend on several factors (Morley et al 1985) as:

1. The level of the disc herniation with each disc tending to compress the root corresponding to the level of the vertebra below.
2. Whether the herniated disc in the mid line (Cauda equina compression) lateral or posterolateral (root compression likely).
3. The amount of herniated disc material.
4. Whether there is accompanying spinal stenoses.

Electrophysiological methods can be used to study root lesions caused by disc prolapsed, by detecting a pattern of denervation in muscles consistent with a myotome distribution (Aminoff, 1984). Nerve conduction studies seek a delay in the F-response of the peroneal and tibial nerves to give an estimate of conduction velocity in the L5 and S1 root respectively and a determination of the soleus H-reflex latency may reveal a delay in the S1 reflex arc (Aminoff, et al 1985).

The foregoing tests are useful, but they give information about the motor nerve root, except the H-reflex, which involves both motor and sensory, however, the majority of patients with back pain problems present with sensory symptoms and signs and little in the way of motor disability (Burk et al., 1981). The diagnostic yield of these techniques is therefore rather low. Somatosensory evoked potentials have been used to investigate sensory roots in cervical and lumbar root lesions (Simp et al 1992).

The evoked potential is an electrical response recorded in the central nervous system (CNS) (spinal or brain), as a direct result of an external stimulus commonly visual, auditory or somatosensory. Somatosensory evoked potential studies have recently received particular attention as a new electrophysiological approach to the evaluation of suspected