12. Pulsed Radiofrequency on L2 Dorsal Root Ganglion as a Therapeutic Method for Lumbar Discogenic Pain: One Year Follow-up Study Involving 26 Patients

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Chronic low back pain can be defined as pain that lasts beyond 3 months. The high prevalence of this condition in the general population incurs substantial social and economic costs to society. Discogenic pain is one of the most common causes of chronic low back pain, along with facet arthrosis and sacroiliitis. According to the IASP definition, positive provocative discography is the basis for confirming a diagnosis of discogenic low back pain. Patients often present with low back pain, and MRI shows a black disc with or without a high-intensity zone. L2 dorsal root ganglion diagnostic blocks have emerged as an alternative to discography. This study suggests that the afferent sympathetic fibers emerging in the L2 dorsal root ganglion are pathways of nociceptive transmission. Pulsed radio frequency (PRF) for discogenic pain is a relatively new technique, compounded by the paucity of evidence available.

Objective: This study aims to confirm the diagnostic effect of blocking the L2 dorsal root ganglion and the efficacy of applying PRF to its root as a treatment option for discogenic low back pain. To evaluate the efficacy of PRF on L2 dorsal root ganglion for chronic discogenic low back pain, this study examined the outcomes of 26 patients who underwent this procedure between 2007 and 2009. The study was conducted in a private pain clinic, located in Mogi Mirim, São Paulo, Brazil.

Methods: This is a cross-sectional retrospective study of a convenience sample of 26 patients based on physical examination, magnetic resonance imaging findings, and targeted L2 dorsal root ganglion diagnostic block. Patients who had had such diagnostic blocks and presented with 50% pain relief on the visual numeric scale (VNS) underwent PRF on bilateral L2 dorsal root ganglion. Pain was evaluated using the visual numeric scale prior to the intervention with follow-up scoring at 1 month, 3 months, 6 months, and 12 months. Data from the Oswestry Disability Questionnaire (ODI) and SF-36 were also collected. Data analyses were conducted using descriptive and inferential statistics, T-test and the Friedman nonparametric test using SPSS-11.

Results: Patient mean age was 47 (SD=15.26); pre-intervention mean pain intensity, 7.4 (SD=2.4); mean pain duration, 131 months (SD=112); 65% of the participants were female. At 1-month follow-up (χ=2.1, SD2.0), statistical analysis revealed a significant decrease in pain ($P < 0.001$), which lasted up to 12 months (χ=3.3, SD=2.5). The Oswestry Disability Index score prior to intervention was 52.05 (SD=51.0) and at one year post-surgical intervention, 35.72 (SD = 33) (t = 3.10, $P = 0.01$). No SF-36 scale scores were assessed until a year later, when they were found to be around 50%, ranging from 41% to 61%.

Conclusion: Pulsed radiofrequency on the L2 dorsal root ganglion is an effective, non-specific therapeutic method for discogenic low back pain. This procedure produced significant results with 54% pain relief for up to one year. The 31% reduction in disability most likely stemmed from the decrease in pain. About average quality of life scores (50%) are lower in comparison with those of healthy subjects (mean scores around 80%). The quality of life scores of this population may have been affected by other factors beside pain.

Key words: Low back pain, discogenic pain, L-2 DRG, disability, quality of life