PROPRIOCEPTIVE POSTURAL CONTROL AND FUNCTIONAL OUTCOME AFTER FIRST-TIME LUMBAR MICRO-DISCECTOMY: THE EFFECT OF EARLY INDIVIDUALIZED PHYSICAL THERAPY

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Purpose: The aim of this study was to determine whether individualized and early started physical therapy (PT) after first-time lumbar micro-discectomy (LMDT) enables patients to switch to a more optimal proprioceptive postural control (PPC) strategy, and whether it improves their functional outcome.

Methods: The study was approved by the local Ethics Committee of Biomedical Science, Katholieke Universiteit Leuven. The aim of this study was to determine whether individualized and early started physical therapy (PT) after first-time lumbar micro-discectomy (LMDT) enables patients to switch to a more optimal proprioceptive postural control (PPC) strategy, and whether it improves their functional outcome.

Participants: Twenty-one patients (age = 45±8yrs) following first-time LMDT (paramedian herniated disc level L4-L5/L5-S1) were randomly divided into an intervention (PT) group (n = 9) and control group (n = 12).

Results: At baseline, the PT and control group show similar outcomes (respectively, RPW = 0.62±0.17 and 0.63±0.24, STSTS = 24±9s and 31±17s, ODI-2 = 23±12% and 28±12%, p > 0.05). At 24 weeks post surgery, all primary outcome measures were improved both in the PT and control group (respectively, RPW = 0.44±0.3 and 0.46±0.31, STSTS = 13±1s and 19±8s, ODI-2 = 16±20% and 19±12%, p < 0.05), but no difference was found between both groups (p > 0.05). However, 8 weeks post surgery the PT group needed significantly less time to perform 5 consecutive STSTS task 5 times was recorded and disability was assessed by the Oswestry Disability Index Questionnaire (ODI-2).

Analysis: A RPW of 1 corresponds to 100% reliance on ankle muscles whereas 0 corresponds to 100% reliance on back muscles for postural control and residual complaints are often. Little is known about an early, active and individualized PT program after LMDT.

Conclusions: At 24 weeks after LMDT, patients could switch to more optimal multi-segmental postural control and disability was significantly improved compared to 2 and 8 weeks post surgery. However, early individualized PT showed no surplus on primary outcome measures, except for an early dynamic functional improvement (STSTS).

Key-words: 1. physical therapy 2. lumbar discectomy 3. proprioceptive postural control

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Ethics approval: The study was approved by the local Ethics Committee of Biomedical Science, Katholieke Universiteit Leuven.

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