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ARE “PATTERNS” OF LUMBAR DISC DEGENERATION ASSOCIATED WITH LOW BACK PAIN? NEW INSIGHTS BASED ON SKIPPED LEVEL DISC PATHOLOGY

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INTRODUCTION: The clinical relevance of "patterns" of disc degeneration of the lumbar spine is unknown. In the setting of multilevel disc degeneration (2 or more levels), this study addressed the clinical implications of skipped level disc degeneration (SLDD) to that of consecutive, multilevel disc degeneration (CMDD) of the lumbar spine.

METHODS: A population-based radiographic and clinical study of 3,099 Southern Chinese. Individuals with multilevel disc degeneration of the lumbar spine on MRI (N=1,457) were stratified to SLDD (n=301) or CMDD (n=1,156) groups. SLDD was classified into five types based on location of non-degenerated normal disc(s). Subject demographics, low back pain (LBP), pain status and functional disability were assessed. Results: CMDD increased the likelihood of historical LBP (OR: 1.39) and pain severity (OR: 1.83) in comparison to SLDD ($p<0.05$). A higher prevalence of LBP and pain intensity was observed in SLDD classification Type V. Functional disability scores did not differ between CMDD and SLDD nor within SLDD classification-types ($p>0.05$).

CONCLUSIONS: Our large-scale study is the first to describe novel variants of SLDD-types and their clinical relevance. LBP and severity of pain was more pronounced in individuals with CMDD rather than SLDD. Our study suggests that subjects with similar degree but with different patterns of multilevel disc degeneration do differ with respect to low back symptoms, providing new evidence with regards to the mechanism of LBP.