

Central Sensitization is associated with Persistent Postoperative Pain and Inferior Patient-Reported Outcomes in Patients Undergoing Unicompartmental Knee Arthroplasty

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INTRODUCTION: It is well known that central sensitization (CS) has a close relationship with persistent pain and inferior patient-reported outcome measures (PROMs) after total knee arthroplasty (TKA). However, studies on the relationship between CS and PROMs including postoperative pain are still lacking in patients undergoing unicompartmental knee arthroplasty (UKA). Therefore, the purpose of this study was to investigate whether CS was associated with postoperative pain and PROMs after UKA.

METHODS: Between 2014 and 2019, 122 cases (122 patients) of UKA performed by a single surgeon were included in this study with a minimum follow up of two years. CS was evaluated preoperatively using a Central Sensitization Inventory (CSI). Based on the CSI score of 40, it was divided into CS and non-CS groups. There were 96 patients (78.7%) in non-CS group, while the CS group consisted of 26 patients (21.3%). PROMs were also evaluated by the Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) score and forgotten joint score (FJS).

RESULTS: The CSI score of the CS group was 45, and the average of the non-CS group was 22. The preoperative WOMAC pain, function, and total score were significantly worse in the CS group than in the non-CS group (Pain: 18.4 vs. 15.8, Function 46.0 vs. 36.2, Total: 69.9 vs. 56.0, all $p < 0.05$). This trend continued at 2 years after surgery (Pain: 3.4 vs. 1.6, Function 14.8 vs. 8.8, Total: 19.6 vs. 11.4, all $p < 0.05$). FJS at 2 years after surgery was also significantly lower in the CS group than in the non-CS group (64.4 vs. 72.8, $p < 0.05$).

DISCUSSION AND CONCLUSION: CS is an associated factor for persistent postoperative pain and greater knee joint awareness in patients undergoing UKA.