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Comparison of Single Needle-Double Cannula and Double Needle Arthrocentesis in Temporomandibular Joint Disorders

Study Protocol

The study included 28 patients over the age of 18 who presented to Van Yüzüncü Yıl University Faculty of Dentistry, Department of Oral, Maxillofacial and Maxillofacial Surgery with complaints of pain and restricted mouth opening and who had not received any previous treatment. The clinical diagnosis was based on the clinical diagnostic criteria for TMJ (DC/TMD). Patients with a diagnosis of disc displacement without reduction characterized by persistent or frequent TMJ pain, history of joint clicking, limited mouth opening with deviation to the affected side, limited lateral movement to the opposite side, limited protrusive movements with deviation to the affected side were included. Patients with systemic inflammatory joint disease, facial growth disorder, and direct trauma to the TMJ were excluded. Patients were divided into two groups as double needle (DN) and single needle double cannula (SN) groups using the envelope technique. Fifteen patients in the double needle group and 13 patients in the single needle group were included in the study after regular follow-up.

A written informed consent was obtained from each patient. The study protocol was approved by the Van Yüzüncü Yıl University Faculty of Medicine Clinical Research Ethical Committee for this study (YYU/06/04.03.2020). The study was conducted by the principles of the Declaration of Helsinki.

Double Needle Group

After the side to be treated was anesthetized with local anesthesia, the entry points were determined by drawing the 'Holmlund Hellsing line' as described by Nitzan (picture 1). Two 20-gauge needles were inserted into the joint and the upper joint cavity was flushed with 100 ml lactated ringer's rinse.

Single needle Double Cannula Group

Before the procedure, two 20-gauge needles were bent at the bottom and placed back to back so that their pointed ends met at a single point, and the plastic parts were joined together with acrylic. The needle thus obtained was placed approximately 10 mm anterior to the tragus, targeting the upper joint region. The joint was washed with 100 ml ringer lactate.

Ibuprofen (Brufen 600 mg) was prescribed post operatively in both groups. Active and passive mouth opening exercises along with a soft diet were recommended. Routine controls were

performed at the 1st week, 1st month, 3rd month and 6th month. Maximum mouth opening and VAS pain values were recorded at each visit.

Statistical Analyses

Changes in mouth opening over time within groups were examined with the Friedmann test. In order to determine between which time groups the difference occurred, Dunn test with Bonferroni correction was applied in paired group comparisons.

VAS scores over time within groups were examined with the Friedmann test. In order to determine between which time groups the difference occurred in single and double needle groups, Dunn test with Bonferroni correction was applied in paired group comparisons.