



The comparative effectiveness of double-puncture versus single-puncture type 2 arthrocentesis in long-term management of TMJ disc displacement without reduction

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Introduction

Temporomandibular joint (TMJ) disc displacement without reduction (DDWOR) is a prevalent condition causing significant pain and functional impairment. Arthrocentesis is a minimally invasive procedure frequently employed to manage this condition. This study aims to compare the clinical effectiveness of conventional double-puncture versus single-puncture type 2 arthrocentesis for the management of TMJ DDWOR after 3 years of follow-up.

Objective

To evaluate and compare the long-term outcomes of TMJ arthrocentesis using conventional double-puncture versus single-puncture type 2 techniques in patients with DDWOR.

Methods

A total of 26 patients diagnosed with DDWOR were randomly and blindly allocated into two treatment groups ($n = 13$ each). Group 1 underwent conventional double-puncture arthrocentesis, while Group 2 received single-puncture type 2 arthrocentesis. Data on gender, side of painful joint complaint, age (years), duration of joint pain (months), maximum interincisal distance (MID, mm), and pain intensity (self-reported using a 0–10 visual analog scale [VAS]) were collected. VAS scores and MID were measured before (baseline) and 3 years after (final) the arthrocentesis.

Results

Twenty-three patients completed the study (Group 1, $n = 11$; Group 2, $n = 12$). Both techniques resulted in significantly reduced VAS scores and increased MID ($P = .001$) after the 3 years of follow-up. However, there were no statistically significant differences between the two techniques ($P > 0.05$).

Conclusion

The findings indicate that both conventional double-puncture and single-puncture type 2 arthrocentesis are effective in reducing pain (as measured by VAS scores) and improving mouth opening (as measured by MID) in patients with TMJ DDWOR. Despite the lack of significant differences between the two techniques, both methods provided substantial clinical benefits over the 3-year follow-up period. This suggests that either technique can be successfully utilized for the long-term management of TMJ DDWOR, offering clinicians flexibility in treatment choices based on patient needs and clinical circumstances.