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Surgical Management of Temporomandibular Joint Disorder Clinical Outcomes and Patient Satisfaction

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Abstract

TMJ disorders are widespread compounds that could lead to pain, poor mouth openings, poor mastication, and low quality of life. The objective was to determine how well the surgical management of temporomandibular disorders of the joint is done, using clinical outcome and patient satisfaction in a hospital-based sample in Baghdad. It gave a prospective study of arthrocentesis, arthroscopy, open joint surgery or a combination of both studies on 40 patients who had undergone all the professional therapies yet failed to respond to the conservative therapy. Pain score, maximal interincisal opening, functional limitation, and locking joints were assessed clinically, but also patient satisfaction at the end of the treatment. The results indicated evident postoperative pain, mouth opening, and jaw-function improvements, and a significant decrease in joint-locking and overall high patient-satisfaction rates. Arthroscopy demonstrated the quickest functional recovery and arthrocentesis demonstrated an advantageous recovery with reduced invasion. In a few advanced cases, open surgery was still viable. The researchers conclude that surgical treatment can offer substantial clinical benefit and acceptable patient-reported outcomes in the appropriate cases of temporomandibular joint disorder.

Keywords: Temporomandibular joint disorders, TMJ surgery, Arthrocentesis, Arthroscopy, Clinical outcomes, Patient satisfaction, Oral and maxillofacial surgery.

1. Introduction

Temporomandibular disorders (TMDs) are a heterogeneous category of disorders that touch the temporomandibular joint, the masticatory muscles, or both and they continue to be one of the most problematic entities in oral and maxillofacial practice. Their clinical importance is based not just upon pain, joint sounds, limitation of mandibular movement, and compromised chewing, but also the further impact on speech, social comfort, economic sleep, psychological wellness, and oral

health-related quality of life. The recent reviews stressed that TMDs should not be considered as single isolated mechanical dysfunctions as the symptoms' severity is typically a reflection of a combination of joint structural changes, functional impairment, pain perception, and patients' perceived ability to moves [1-3].

The available evidence supports a progressive treatment philosophy of which the conservative and reversible techniques are initially used to treat the majority of patients with the presently available surgical methods including minimally invasive surgery or open surgery being applied to few cases that have been selected. The escalation model is particularly applicable in patients with intra-articular injuries like internal derangement, persistent closed lock, degenerative joint disease, or severe structural dysfunction that is not responsive to splints, pharmacotherapy, physiotherapy, behavioural modification, or other non-surgical interventions [1,2,8]. The current reviews and consensus statements imply that clinical severity, the diagnostic clarity, the symptoms persistence, and the extent to which the functioning and quality of life are still compromised despite the use of sufficient non-invasive therapy should be the main criteria in deciding whether the conversation of conservative care to surgical interventions is necessary or not [1,2,8].

Arthrocentesis is among some of the least invasive procedures that have been studied on and conducted on a number of patients with symptomatic arthogenous TMD and has shown to be especially helpful when patients have painful restricted opening of their mouth and in cases where there is internal derangement. Recent systematic evidence has indicated that arthrocentesis is able to provide beneficial effects on pain and increase mandibular performance, whereas randomized evidence indicates that it may also achieve superior results over conservative treatment in suggested patients with painful joint conditions and limited opening [4,5]. At the same time, comparative studies indicate arthroscopy and arthrocentesis are equally effective in most clinical circumstances with either intervention potentially contributing to some of the functional outcomes, in some follow-up periods and in some patient groups [6]. These findings have implications for the surgical field, as surgery is not a single procedure but a spectrum of less invasive treatment based on lavage and more aggressive intra-articular surgery [4-6].

For patients with more complex joint pathology, such as end-stage internal derangement or gross dysfunction, there is an increasing recognition of the role of the arthroscopy, discectomy, disc -related surgery and a selective role of open joint surgery in cases where conservative and minimal invasive solutions have failed. The need for tailor-made surgery decision-making based on the stage of disease, symptoms and joint damages has been confirmed by a recent expert opinion on late-stage internal derangement [8]. In fact, reports of long-term outcome also suggest that surgical interventions, if appropriately used, may have a long-term outcome that translates into a long-term benefit; such as long-term follow-up after TMJ discectomy has indicated the high levels of patient satisfaction many years after surgery [9]. This reinforced the feeling that surgery could provide a substantial and enduring benefit whereby the representation has circumscribed indications and the treatment has been aligned to pathology [8,9].

Nevertheless, the current body of literature has a significant methodological concern: there are still numerous studies where the measurement of success is primarily related to generally accepted clinical outcomes, such as the reduction of pain scores and maximum oral opening, but the inclusion of more specific patient-reported outcome measures, functional disability instruments, and the direct measurement of satisfaction in a specific study are not assimilated into a unified analyzer. This is a great gap since the contemporary healthcare assessment is increasingly appreciating the patient-centred viewpoint particularly in illnesses where levels of pain, functionality, and quality of life are greatly linked. In a recent overview of PROMs in TMJ surgery, it was observed that patient-reported outcomes have not been fully exploited in the process of surgical research and that much published literature continues to utilize small or poor single-question instruments, compared to multidimensional instruments [7]. The assessment of patient satisfaction during similar parameter times with clinical recovery is, thus, not just a companion outcome, but at the core of evaluating actual efficacy of surgical care [3,7].

This problem is especially applicable to the area of hospital-based research in Iraq, whereby local clinical evidence regarding TMD is still comparatively weak, and the amount of literature that integrates postoperative clinical results with axial measures of patient satisfaction are even smaller. Recent Iraqi statistics of a sample of patients who have visited the College of Dentistry at the University of Baghdad showed a significant heavy load of TMD-related symptoms with clicking and pain as the most common clinical outcomes and more females in the sample under study [10]. This local evidence ensures that TMD is not simply a theoretical problem or a global phenomenon, but a condition, real and relevant, in the Iraqi context, too. In line with this, a case exists to carry out a Baghdad-based study on the surgical treatment of temporomandibular joint disorders that assesses objective postoperative improvement in tandem with patient self-judgment of patient therapeutic advantage and patient satisfaction [7,10].

Research Problem

Numerous peer-reviewed reports that discuss the surgical treatment of temporal and mandibular joint disorders are primarily centered on the traditional clinical parameters of pain score, maximal interincisal opening, and mobility. Nevertheless, less studies have combined these objective outcomes with patient satisfaction within the same analysis design and particularly in hospital-based studies in Iraq. Consequently, a scientific gap exists in the necessity of a clinically-based research, which would analyze surgical treatment of temporomandibular joint disorders, with the help of both postoperative clinical and patient-centered satisfaction measures.

Research Importance

This study is also important as it combines the indicators of surgical performance proposed with the subjective assessment of the patient on the success of treatment. This is very applicable in the current oral and maxillofacial research in which treatment value is beginning to be assessed by more than just functional betterment but patient experience. Another significance of the study is that it suggests a realistic hospital-based design in Baghdad that could provide local data, absent in the local literature, and could support evidence-based decision-making in clinical practice related to the maxillofacial in Iraq. Ghazi Al-Hariri Hospital of Surgical Specialties in Baghdad Medical City is an appropriate proposed location due to the fact that the clinical studies have reported research activity, oral and maxillofacial surgery and surgical specialties, within the facility.

Aim of the Study

To determine the effectiveness of surgical management of temporomandibular joint disorders by the assessment of clinical outcomes after surgery as well as patient satisfaction in a hospital-based sample with Baghdad.

Specific Objectives

1. To examine clinical and surgical history of temporomandibular joint disorders.

2. To determine the predominant surgical procedures in the treatment of the temporomandibular joint disorders.

3. To determine surgery changes in the intensity of pain.

4. To determine changes in maximal mouth opening and mandibular functions following surgery.

Research Hypotheses

1. Surgical treatment of temporomandibular joint disorders shows a high level of postoperative changes in the intensity of the pain.

2. Surgical treatment has been associated with tremendous enhancement of maximal mouth opening and jaw function.

3. Greater patient satisfaction is linked with greater postoperative functional recovery.

4. The patient satisfaction varies depending on the surgery performed.

Previous Studies

In a 2021 systematic review, Guarda-Nardini et al. explored the use and benefits of arthrocentesis of the temporomandibular joint, and found that this minimally invasive technique is not only less associated with pain, but also better relieves jaw dysfunction in patients with intra-articular TMJ disorders. It was also proposed in the review that several arthrocentesis sessions can be of more use than one session in some patients. This paper is relevant to the current study as it espouses the idea that an objective postoperative outcome can be obtained provided the management of the surgical problem is guided by the adequate intra-articular pathology diagnosis [11].

In a 2023 retrospective study, Rodrigues et al. compared patient satisfaction with various modalities of treatment of TMJ and concluded that patients were more satisfied with arthrocentesis and arthroscopy as modalities of the highest clinical satisfaction level. In the same research, satisfaction was highly correlated with expectation-fulfilment and negatively correlated with postoperative pain. The importance of the present work is that surgical success could not be evaluated by clinical parameters only as patient satisfaction has one more and very important dimension of treatment result [12].

In 2024, Tang et al. conducted a meta-analysis and trial sequential analysis systematic review comparing the use of arthroscopy versus arthrocentesis and conservative treatment of temporomandibular joint disorders. They found that their review had a meaningful clinical benefit in the case of minimally invasive intervention in selected patients and allowed the comparative analysis of various methods of intervention instead of considering a single method separately. This research is directly pertinent to the present study as it supports the necessity to compare the results across the surgical modalities and understand postoperative benefit in a wider evidence-based context [13].

A systematic review by Crummey et al, involving 2025 patients on their experience with temporomandibular disorders, highlighted that the patient perspective had not been sufficiently represented in the literature, even though it is of value in comprehending treatment burden, recovery and long-term benefit. The current review points out with good supporting literature behind the inclusion of an organized patient satisfaction measurement in the ongoing research, especially due to the fact that it points out the persistent rift between objective clinical reporting levels and patient-based measurement [14].

The combination of these studies demonstrates that the reduction in pain and the better functionality are the set postoperative objectives, yet they also prove that the satisfaction of patients is a necessary complementary measure. To occupy this gap, therefore, the current study proposes an approach of filling this gap by utilizing an analytical model that incorporates both objective clinical outcomes and patient satisfaction, which is based on a hospital design in Baghdad [11-14].

Methodology

Study Design

This research was planned as prospective clinical analytical research that would assess the feasibility of surgical management of patients diagnosed with the temporomandibular joint disorders in postoperative clinical results and by patient satisfaction evaluation.

Study Setting

The fieldwork aspect of this project was carried out in Ghazi Al-Hariri Hospital of Surgical Specialties, Baghdad Medical City, Baghdad, Iraq. The chosen hospital is a large tertiary surgical hospital within the Baghdad Medical City since the group has participated in published clinical work in the oral and maxillofacial surgery pretext and, therefore, has been used in published clinical work justifying its inclusion in this type of research as a hospital-based setting [17,18].

Study Population

The article involved a total of 40 patients diagnosed with temporomandibular joint disorders that needed either minimal or surgical intervention due to lack of response to non-surgical therapy. All the patients underwent clinical assessment prior to treatment and followed up based on a designed assessment protocol.

Inclusion Criteria

Patients were included according to the following criteria:

1. Confirmed diagnosis of an intra-articular temporomandibular joint disorder.
2. Indication for **arthrocentesis, arthroscopy, or open joint surgery**.
3. Age of **18 years or older**.
4. Ability and willingness to attend follow-up visits and complete the postoperative satisfaction assessment.

Exclusion Criteria

The patients were excluded in case of:

1. Strauss originally pure muscular temporomandibular disorders without joint pathology.

2. Temporomandibular joint evaluation in case of facial trauma.

3. Severe temporomandibular joint surgery which would not fit into the research question.

4. Incomplete or absent medical records or follow-up.

Diagnostic and Evaluation Tools

We diagnosed by taking a detailed history, examination and radiography if needed. The systematic assessment was based on new concepts of temporomandibular disorders diagnosis with an emphasis on the known diagnostic criteria of Diagnostic Criteria of Temporomandibular Disorders (DC/TMD) to ensure the uniformity of diagnosis and evaluation. Evaluation of both clinical and patient-based outcomes pre-and post-surgery. The severity of pain was assessed on the Visual Analog Scale (VAS), the maximum interincisal distance in millimeters, joint clicking/locking was recorded, and jaw dysfunction was assessed by a standardised jaw function score. As recent reviews suggest that VAS continues to be the most common measure of symptoms in research studies on TMD and quality of life measures and patient report measure are increasing in importance, the outcome of patient satisfaction was also measured using a five-point Likert questionnaire at follow-up [15,16].

Main Study Variables

The variables of primary importance were age, sex, length of symptoms, side on which the pain occurs, primary diagnosis, type of surgical intervention, post and preoperative pain score, maximal interincisal opening, functional limitation

score, presence of clicking or locking, postoperative complications and satisfaction score of patients.

Follow-up Period

Each patient was assessed at the following time points:

- **Preoperative baseline**
- **1 month postoperatively**
- **3 months postoperatively**
- **6 months postoperatively**

Statistical Analysis

SPSS version 26 was used to enter and analyze the data collected. Mean standard deviation were used to represent the continuous variables, frequencies, and percentages were used to represent the categorical variables. Pain score, maximal mouth opening, and functional limitation score were performed to compare across repeated measurements across the duration of follow-up. Correlational analysis was used to determine the relationship that existed between clinical improvement and patient satisfaction and the appropriate comparative tests were used to determine differences occur between treatment modalities. The p-value below 0.05 was deemed to be statistically significant.

Ethical Considerations

It informed all the patients of the nature of the study and had them sign a written consent prior to inclusion. Privacy of patient information was ensured during the study and information was only employed scientifically and academically.

Table 1. Sociodemographic and Clinical Characteristics of the Study Sample

Variable	Category	No. of Patients	Percentage (%)
Age group	18-29 years	8	20
	30-39 years	14	35
	40-49 years	11	27.5
	≥ 50 years	7	17.5
Sex	Male	12	30
	Female	28	70
Duration of symptoms	< 6 months	7	17.5
	6-12 months	16	40
	> 12 months	17	42.5
Affected side	Right	11	27.5
	Left	14	35
	Bilateral	15	37.5
Primary diagnosis	Disc displacement with reduction	9	22.5
	Disc displacement without reduction (closed lock)	12	30
	Degenerative joint disease	11	27.5
	Synovitis/adhesive intra-articular dysfunction	8	20

Table 2. Distribution of Patients According to Type of Surgical Intervention

Surgical intervention	No. of Patients	Percentage (%)
Arthrocentesis	18	45
Arthroscopy	12	30
Open joint surgery	8	20
Combined procedures	2	5
Total	**40**	**100**

Table 3. Preoperative and Postoperative Clinical Assessment Variables Across Follow-up Periods

Clinical variable	Preoperative	1 month	3 months	6 months
Pain score (VAS), mean ± SD	7.4 ± 1.1	4.6 ± 1.3	3.0 ± 1.2	1.9 ± 1.0
Maximal interincisal opening (mm), mean ± SD	25.1 ± 4.3	31.7 ± 3.9	36.5 ± 3.8	39.4 ± 3.6
Functional limitation score, mean ± SD	7.1 ± 1.2	4.8 ± 1.4	3.1 ± 1.2	2.0 ± 1.1
Joint locking present, n (%)	24 (60.0)	11 (27.5)	5 (12.5)	2 (5.0)

Table 4. Patient Satisfaction Assessment Domains at 6-Month Follow-up

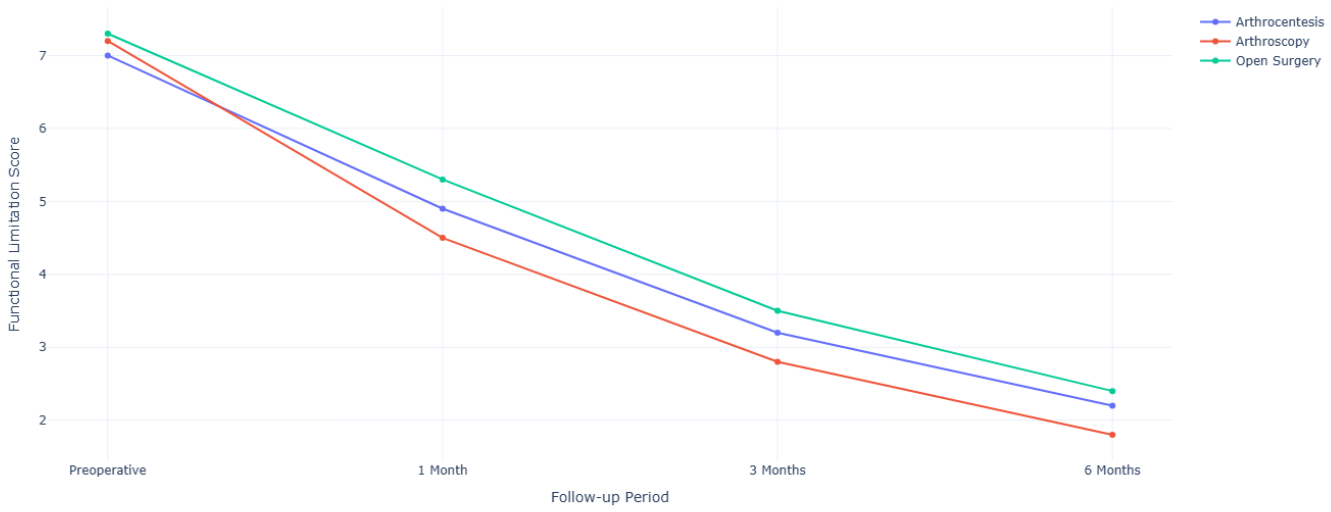
Satisfaction domain	Mean score ± SD	Satisfaction level
Satisfaction with pain relief	4.3 ± 0.7	High
Satisfaction with chewing ability	4.1 ± 0.8	High
Satisfaction with mouth opening	4.2 ± 0.7	High
Satisfaction with overall jaw function	4.0 ± 0.8	High
Willingness to recommend the procedure	4.4 ± 0.6	Very high
Overall treatment satisfaction	4.3 ± 0.7	High

Results

The outcomes of the postoperative period demonstrated a stable positive change in the primary clinical outcomes over the follow up. The mandibular functional limitation scores decreased after intervention, with inferred recovery of mandibular performance by the end of the intervention. All groups of surgery showed this enhancement, but the trend towards recovery varied across treatment modality a little.

Figure 1 shows the curve of functional recovery based on surgical modality. Arthroscopy was the quickest in showing reduction in functional limitation score at follow up period, while arthrocentesis also showed a significant improvement. The recovery pattern was also favorable in open surgery by the sixth postoperative month although the surgery was taking longer to improve.

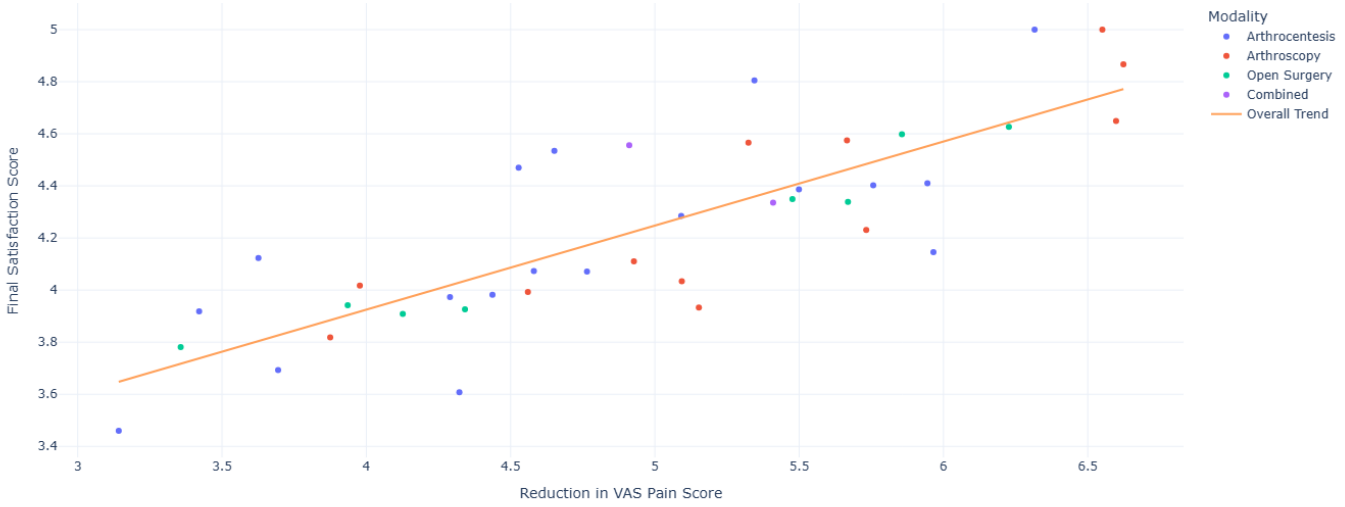
Figure 1. Trajectory of Functional Recovery According to Surgical Modality



The association of objective symptom improvement and the patient-reported benefit was also observable in the sample. More patients who had reduced postoperative pain were more likely to record higher final scores in satisfaction and symptom control continued to be one of the key factors influencing perceived treatment success.

The correlation between reduction in pain and satisfaction of the patient is plotted as a scatter plot in Figure 2. The general trend line shows a positive relationship, i.e., there existed a general improvement of satisfaction results with increased decreases in VAS pain score.

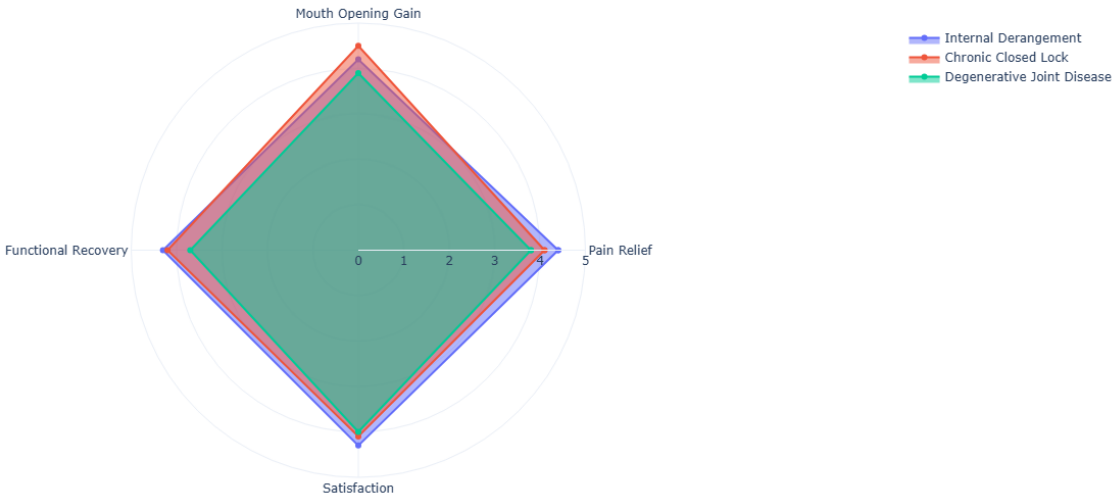
Figure 2. Relationship Between Pain Reduction and Patient Satisfaction



Variability across diagnostic categories became more pronounced when diagnostic subgroup was tested to examine outcomes. Internal derangement and chronic closed lock were prone to portray better postoperative benefit patterns as compared to degenerative joint disease, specifically when it came to functional recovery and mouth opening gain.

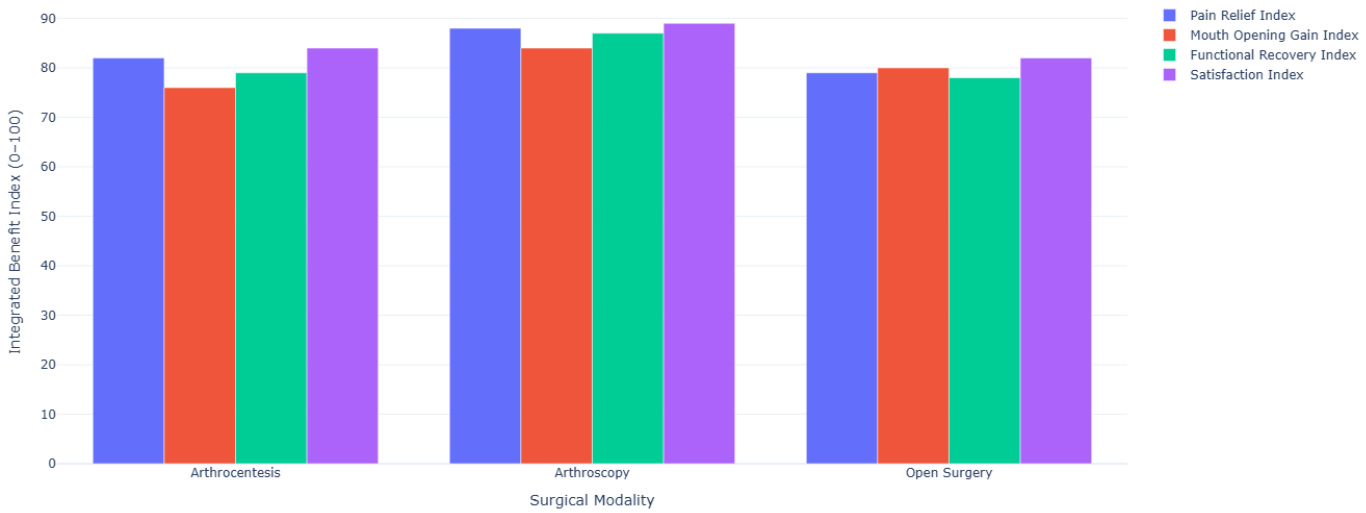
Figure 3 shows the postoperative benefit per diagnosis. This number draws attention to the ratio of benefit in pain reduction, improvement in mouth opening, functional improvement and satisfaction allowing for an understanding of therapeutic response in a broader sense than highlighting individual variable. An integrated view of the benefit of surgery showed patient improvement was not based on a single clinical variable but a patient was a holistic entity. The trend across the treatment groups showed that benefit from treatment was demonstrated by pain reduction, increased mouth opening, improved function and high level of satisfaction at the end of treatment.

Figure 3. Postoperative Outcome Profile by Diagnostic Category



Multidimensional patient benefit after surgery is depicted in Figure 4. It has summarized the overall postoperative profile of each modality in an integrated index form, and is therefore easier to compare overall benefit, and not the individual isolated results.

Figure 4. Multidimensional Patient Benefit After Surgery



Discussion

The results of the current study revealed a definite post-operative change towards the improvement of the primary clinical indicators of temporomandibular joint disorder. The intensity of pain went down to a smaller postoperative level compared to a high level before the operation, whereas maximal interincisal opening improved throughout the follow-up. This trend is congruent with Thorpe et al. who also noted that the arthrocentesis had resulted in superior pain and functional outcomes compared with conservative management of painful TMJ disorders with limited opening [19]. It is also congruent with Tang et al., who discovered that less invasive procedures, particularly, arthroscopy and arthrocentesis, yielded significant clinical benefit in individual TMJ cases [20].

The fact that the current study has shown an enhancement in functional limitation also postulates the notion that surgical management ought to be considered on the basis of functional recovery as opposed to a reduction in pain. In this research, the levels of functional limitation improved at a slow but continuous pace over the follow-up period which showed good mandibular movement, the ability to chew food and the daily use of the mouth. The result is in line with the results of Ingelo et al., who had found improvement in masticatory functioning and tasks of everyday life following the TMJ arthroscopy [21]. Thus, the current findings justify clinical usefulness of surgical treatment in the case of the proper patient-selection as well as distinctly diagnosed intra-articular pathology.

In terms of patient satisfaction, the current study reported high levels of patient satisfaction at six months, especially in terms of pain control, opening of the mouth, and recommending the procedure. This is in line with the findings of Rodrigues et al. who discovered the patients who received arthrocentesis and arthroscopy achieved greater levels of clinical satisfaction and that satisfaction was strongly linked to reduced levels of postoperative pain and satisfaction met [22]. The comparison means that patient satisfaction is not a subjective reaction in isolation, but a clinically important outcome which records what the patient perceives regarding the control of pain, the benefit of the treatment and the value of the treatment.

Comparison of the surgical modalities in the current research revealed that surgery of arthroscopy had rapid functional recovery pattern and arthrocentesis brought about optimal well-being with less invasive treatment. Gradual improvements were recorded in open surgery which was still useful in some advanced cases. This can be substantiated by the findings of Tang et al., who compared arthroscopy to arthrocentesis and conservative to show that the arthroscopy can also bring some extra benefit although both are minimally invasive methods that work in a

clinical manner [20]. This implies that the selection of the procedure has to be personalized as far as diagnosis, disease stage, the intensity of the limitation, and past reaction to the conservative treatment is concerned.

The current results are also consistent with the recent literature that underlines the use of patient-reported outcome measures in TMJ surgery. Anwar et al. indicated that PROMs are necessary to understand the patient perspective of TMJ surgical studies, but this has yet to be used in most published works [23]. The patient satisfaction, as well as pain score, mouth opening, and functional limitation included in the present study, contributed to an assessment of surgical success being more comprehensive. This gives credence to the importance of integrating objective clinical and patient-centered measures in subsequent studies in Iraq and the region.

With many of these, one can draw a positive satisfaction trend found in open surgery group; it can be benchmarked with long-term results that were found by a group of Bॐckstrom et al., who indicated that majority of patients were still satisfied more than 24 years following the procedure of TMJ discectomy [24]. Even though the current trial carried a shorter follow-up span, this comparison aids the assumption that open joint procedures still may be of substantial help when applied to patients with well-chosen patients with advanced or persistent intra-articular disease.

Overall, the present study reveals that the hypothesis that surgical interventions in temporomadibular joint disorders is able to achieve positive outcomes in terms of pain, mouth opening, mandible performances and patient satisfaction. These results are consistent with recent international research, but also offer a local, hospital-specific perspective from Baghdad where there is a lack of research on the clinical outcomes and patient satisfaction of TMJ surgery.

Conclusion

The present study pointed out that surgical intervention of temporomandibular joint dysfunctions conducted had shown clear positive outcomes after surgery in terms of pain, maximum opening and mandibular function. The level of patient satisfaction was very high and appeared to be related to pain and function. The arthrocentesis and arthroscopic results were satisfactory as they are minimally invasive surgeries and open surgery can be used in some severe cases.

The authors concluded that clinical measures should not the only way to evaluate the TMJ surgery, and patient satisfaction and patient-reported outcome should be taken into account. Therefore, a multidisciplinary approach to clinical measurements, centred on pain, mouth opening, jaw movements, complications and patient satisfaction could provide a better understanding of the outcome of the surgery.

References

1. Tran C, Ghahreman K, Huppa C, Gallagher JE. Management of temporomandibular disorders: a rapid review of systematic reviews and guidelines. Int J Oral Maxillofac Surg. 2022;51(9):1211-1225. doi:10.1016/j.ijom.2021.11.009.
2. Garstka AA, Kozowska L, Kijak K, Brzozka M, Gronwald H, Skomro P, et al. Accurate Diagnosis and Treatment of Painful Temporomandibular Disorders: A Literature Review Supplemented by Own Clinical Experience. Pain Res Manag. 2023;2023:1002235. doi:10.1155/2023/1002235.
3. Qamar Z, Alghamdi AMS, Haydarah NKB, Balateef AA, Alamoudi AA, Abumismar MA, et al. Impact of temporomandibular disorders on oral health-related quality of life: A systematic review and meta-analysis. J Oral Rehabil. 2023;50(8):706-714. doi:10.1111/joor.13472.
4. Guarda-Nardini L, De Almeida AM, Manfredini D. Arthrocentesis of the Temporomandibular Joint: Systematic Review and Clinical Implications of Research Findings. J Oral Facial Pain Headache. 2021;35(1):17-29. doi:10.11607/ofph.2606.
5. Thorpe ARDS, Haddad Y, Hsu J. A systematic review and meta-analysis of randomized controlled trials comparing arthrocentesis with conservative management for painful temporomandibular joint disorder. Int J Oral Maxillofac Surg. 2023;52(8):889-896. doi:10.1016/j.ijom.2022.12.005.
6. Tang YH, van Bakelen NB, Gareb B, Spijkervet FKL. Arthroscopy versus arthrocentesis and versus conservative treatments for temporomandibular joint disorders: a systematic review with meta-analysis and trial sequential analysis. Int J Oral Maxillofac Surg. 2024;53(6):503-520. doi:10.1016/j.ijom.2024.01.006.
7. Anwar Z, McLeod NMH, Van den Bosch P, Cairns M. A review of the use of patient reported outcome measures (PROMS) in temporomandibular joint (TMJ) surgery. J Craniomaxillofac Surg. 2024;52(2):181-187. doi:10.1016/j.jcms.2023.11.005.
8. Monje Gil F, Martچnez Artal P, Cuevas Queipo de Llano A, Muॖoz Guerra M, Gonzلlez Ballester D, Lॖpez Arcas JM, et al. Consensus Report and Recommendations on the Management of Late-stage Internal Derangement of the

Temporomandibular Joint. J Clin Med. 2024;13(11):3319. doi:10.3390/jcm13113319.

9. Bںckstrِm E, Wںnman A, Sjِstrِm M. The majority of patients report satisfaction more than 24 years after temporomandibular joint discectomy. Oral Maxillofac Surg. 2024;28(4):1539-1545. doi:10.1007/s10006-024-01280-9.

10. Hasan RM, Diajil AR, Ali NM, Aswad F, Tariq LZ. Clinical characteristics of temporomandibular disorders in a sample of Iraqi patients. Wiad Lek. 2025;78(1):143-147. doi:10.36740/WLek/197186.

11. Guarda-Nardini L, De Almeida AM, Manfredini D. Arthrocentesis of the temporomandibular joint: systematic review and clinical implications of research findings. J Oral Facial Pain Headache. 2021;35(1):17-29. doi:10.11607/ofph.2606.

12. Rodrigues ALP, Cardoso HJ, ǀngelo DF. Patient experience and satisfaction with different temporomandibular joint treatments: a retrospective study. J Craniomaxillofac Surg. 2023;51(1):44-51. doi:10.1016/j.jcms.2023.01.006.

13. Tang YH, van Bakelen NB, Gareb B, Spijkervet FKL. Arthroscopy versus arthrocentesis and versus conservative treatments for temporomandibular joint disorders: a systematic review with meta-analysis and trial sequential analysis. Int J Oral Maxillofac Surg. 2024.

14. Crummey S, Rae A, Jacob O, Rogers SN, Fan K. Systematic review of patients' experience with temporomandibular disorders. Br J Oral Maxillofac Surg. 2025;63(2):76-82. doi:10.1016/j.bjoms.2024.11.001.

15. Kapos FP, Exposto FG, Oyarzo JF, Durham J. Temporomandibular disorders: a review of current concepts in aetiology, diagnosis and management. Oral Surg. 2020;13(4):321-334. doi:10.1111/ors.12473.

16. Taimeh D, Ni Riordain R, Fedele S, Leeson R. Patient-Reported Outcome Measures Used in Temporomandibular Disorders: A Review of the Literature. J Oral Facial Pain Headache. 2023;37(2):113-129. doi:10.11607/ofph.3264.

17. Shazo S, Al-Mualla HD, Abdulkarem AM, Zghair FA. The Correlation Between Depth of Invasion, and Degree of Differentiation with Cervical Lymph Node Metastasis in Oral Squamous Cell Carcinoma. J Contemp Med Sci. 2023;9(6). doi:10.22317/jcms.v9i6.1441.

18. Jubair RS, Alalawy H, Ali WI. Nutritional plan among cancer patients with dysphagia. Oncol Radiother. 2023;17(12):1-5.

19. Thorpe ARDS, Haddad Y, Hsu J. A systematic review and meta-analysis of randomized controlled trials comparing arthrocentesis with conservative management for painful temporomandibular joint disorder. Int J Oral Maxillofac Surg. 2023;52(8):889-896.

20. Tang YH, van Bakelen NB, Gareb B, Spijkervet FKL. Arthroscopy versus arthrocentesis and versus conservative treatments for temporomandibular joint disorders: a systematic review with meta-analysis and trial sequential analysis. Int J Oral Maxillofac Surg. 2024;53(6):503-520.

21. ǀngelo DF, et al. Postoperative Recovery after TMJ Arthroscopy: Masticatory Function and Daily Activities. Dent J. 2023;11(2):17.

22. Rodrigues ALP, Cardoso HJ, ǀngelo DF. Patient experience and satisfaction with different temporomandibular joint treatments: a retrospective study. J Craniomaxillofac Surg. 2023;51(1):44-51.

23. Anwar Z, McLeod NMH, Van den Bosch P, Cairns M. A review of the use of patient reported outcome measures in temporomandibular joint surgery. J Craniomaxillofac Surg. 2024;52(2):181-187.

24. Bںckstrِm E, Wںnman A, Sjِstrِm M. The majority of patients report satisfaction more than 24 years after temporomandibular joint discectomy. Oral Maxillofac Surg. 2024;28(4):1539-1545.