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Postoperative Recovery after TMJ Arthroscopy: Masticatory Improvement and Postoperative Diet

David Faustino Ângelo [1,2,3,*], André Prior [1] and Henrique José Cardoso [2]

[1] Faculty of Medicine, Lisboa University, 1649-028 Lisboa, Portugal
[2] Instituto Português da Face, 1050-227 Lisboa, Portugal
[3] Centre for Rapid and Sustainable Product Development, Polytechnic Institute of Leiria, 2430-028 Marinha Grande, Portugal
* Correspondence: david.angelo@ipface.pt

Abstract: Background: Temporomandibular joint (TMJ) arthroscopy has become popular due to its satisfactory long-term results and few surgical complications. However, patients' postoperative recovery is poorly studied. This study evaluates the postoperative evolution of the masticatory function and the daily activities of patients who have undergone TMJ arthroscopy. Methods: A prospective study was conducted in a Portuguese orofacial pain center with patients fulfilling the criteria for TMJ arthroscopy. For the first 30 days (D) after surgery, every 3 days, patients scored: (1) discomfort in the mastication of different food textures (soft, medium, hard); (2) time for a return to normal lifestyle (work, physical activities); and (3) TMJ pain during essential functions (mastication, speech, deglutition, deep breaths). The data were compared with preoperative results using descriptive statistics, one-way ANOVA, and the Friedman test. The level of significance was set at $p < 0.05$. Results: Forty-two patients were assessed for eligibility; fifteen did not meet the inclusion criteria, and five declined participation. Twenty-two patients initially started the study, but two canceled on days 6–18, and eleven patients tested positive for SARS-CoV-2. Nine female patients with sixteen operated joints completed the study. A progressive tolerance for scaling food textures was observed. Soft and medium textures were tolerated after D15 and D21, respectively. The hard texture was not well tolerated in the 30 days after surgery. Discomfort returning to work and practicing physical exercise was significantly reduced on D15 and D21, respectively. In addition, significant improvements in TMJ pain during mastication and speech were observed over time. Conclusions: Despite the study's limitations, namely the small sample size, the non-validated questionnaire, and the non-biomechanical analysis of food texture, it was possible to observe after TMJ arthroscopy an early return to masticatory capacity with the progressive introduction of different food textures. The authors expect these results will help in future postoperative guidelines regarding postoperative recovery from TMJ arthroscopy.

Keywords: arthroscopic surgical procedure; patient satisfaction; postoperative period; temporomandibular joint

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1. Introduction

Mastication is a complex, dynamic, and rhythmic process affected by the physical characteristics of foods, such as size, hardness, toughness, and elasticity [1–5].

In addition to mastication, the temporomandibular joint (TMJ) enables functions that are essential for survival, such as speech, deglutition, yawning, and respiration (airway patency) [6–8]. Temporomandibular disorders (TMD) are a group of pathologies characterized by pain in the TMJ and/or the masticatory muscles and/or its surrounding structures, TMJ noises, deviations, or restrictions in mouth opening [9,10].

TMJ arthroscopy has become more popular in recent years and is one of the most commonly used surgical techniques to effectively address arthrogenous TMD because of its smaller

incisions, safety, long-term results, and faster recovery [11]. This technique allows direct visualization of the joint, effectively reducing pain and restoring mandibular movement [12,13]. Most studies related to TMJ arthroscopy focus mainly on two outcomes: pain and mouth opening [14–17]. Few studies evaluate TMD symptoms other than pain [18,19] and their potential effect on a patient's quality of life [20–23]. There is a lack of evidence regarding the progress of postoperative patients, particularly regarding postoperative diet and the timing involved in restarting daily activities. This creates difficulties in providing clear postoperative guidelines and managing patient expectations.

This prospective study evaluates the progress of TMJ arthroscopy postoperative recovery of masticatory function and daily activities.

2. Materials and Methods

2.1. Study Design

This prospective study was conducted in a Portuguese orofacial pain center from 1 November 2020 to 30 April 2021. The study was approved by the Ethics Committee of Centro Académico de Medicina de Lisboa (Ref N. 45/21).

All the enrolled patients were aware of its implications and gave informed, clarified, and free consent in writing and accordance with current legislation and the Declaration of Helsinki.

The inclusion criteria were: (1) age > 18 years old; (2) arthrogenous disorder with criteria for TMJ arthroscopy (Categories 2–3 of the Dimitroulis Classification); [24] (3) patients submitted to Level 2 TMJ arthroscopy; and (4) full dentition without removable prosthesis. Exclusion criteria were: (1) previous TMJ intervention; (2) pregnant or breastfeeding women; (3) patients with psychiatric diseases or impaired cognitive capacity; and (4) allergy to any medication or food involved in the study.

All patients were examined and treated by the same TMJ surgeon before treatment. The final arthrogenous diagnosis was confirmed using magnetic resonance imaging (MRI).

2.2. Study Protocol and Data Collection

Patients fulfilling the inclusion criteria were interviewed in person, even during the SARS-CoV-2 pandemic period.

In all the interviews, patients were asked to characterize discomfort and pain related to their quality of life, using a scale from 0 to 10 (<2 no or low pain/discomfort; 2–3 = mild; 4–6 = moderate; 7–9 = severe; 10 = incapacitating pain/discomfort); and in the last interview, to characterize their satisfaction with symptom relief, improvement in their masticatory function, and their preoperative expectations regarding the surgery and their recovery, on a scale from 0 to 10 (0 = no satisfaction at all; 1–3 = low satisfaction; 4–6 = moderate satisfaction; 7–9 = high satisfaction; 10 = complete satisfaction) (Appendix A Table A1).

The primary outcome evaluated was discomfort in different food textures' mastication (0–10 scale). The secondary outcomes included were: (1) TMJ pain during essential functions (deep breaths, speech, mastication, and deglutition); (2) discomfort in resuming a normal lifestyle (professional activity and moderate to high-intensity physical activities); (3) number of SOS analgesics needed; and (4) participant satisfaction (regarding symptoms relief, masticatory function, and preoperative expectations).

Three standardized textures were considered to evaluate discomfort in the mastication of different foods: soft, medium, and hard. For soft texture, the authors used: (1) boiled potato (25–35 mm size, boiled for 12 min with skin), and (2) a slice of bread loaf. For a medium texture, the authors used: (1) regular brioche bread (similar to a hamburger or hot dog bun) and (2) a "Maria" biscuit similar to a Rich Tea biscuit, comprising wheat flour, sugar, vegetable oil, and malt extract (diameter ~6 cm). An uncooked almond was used for hard texture (Appendix B, Table A2). Patients were instructed on how to prepare the foods for this study (standardizing these variables as much as possible) (Appendix B, Table A2). They were instructed not to break these foods into smaller pieces, keep them inside the mouth too long, and not force mastication. The food was all provided by the investigation

team. The food was ingested on interview days in sequence, starting with soft food, then medium and hard food. Questions about the discomfort of mastication with different food textures were applied preoperatively and until the 30th day postoperatively (Days 3, 6, 9, 12, 15, 18, 21, 24, and 30) (Appendix A, Table A1).

TMJ pain during essential functions (mastication, speech, deglutition, and deep breaths) and discomfort returning to a normal lifestyle (return to work and physical activities) were evaluated through Questions 6–11 conducted until the 30th day postoperatively (Appendix A Table A1). The number of SOS analgesics was assessed using Question 12 after finishing the drug protocol on Day 9 after surgery (Appendix A Table A1). On Day 30, patient satisfaction was evaluated according to: (1) satisfaction with treatment relief; (2) satisfaction with masticatory function; and (3) preoperative expectations (Questions 13–15).

A database was created to register the outcomes and other observations that could affect those variants.

2.3. Treatment Protocol

The TMJ arthroscopy was performed with a 1.9-mm arthroscope, including a video system (Stryker, San Jose, CA, USA), with a 2.8-mm outer protective cannula. Additional equipment included a surgical scalpel (#11 blade), an infusion tube, a three-way pipe, a 21-G needle, and Ringer solution as part of the armamentarium [25,26]. The procedures were Level 2 (double portal) TMJ arthroscopies. The authors used a classic puncture with an entry point 10 mm anterior and 2 mm below the Holmlund–Hellsing (H–H) line to perform the first portal access. Next, the arthroscope was inserted forward and upward (15–45°) into the superior joint space. A second puncture with a 21-G needle was performed 30 mm anterior and 7 mm below the H–H line to wash the joint with 250–300 mL of Ringer solution. The second portal was performed using a triangulation technique, around 30–40 mm anterior and 8–12 mm below the H–H. Then, different approaches were performed on all patients in the study: intrasynovial medication, tissue coblation with the ReFlex Ultra 45 Plasma Wand system, and capsulotomy. An antibiotic protocol (amoxicillin/clavulanic acid, or clarithromycin) and non-steroidal anti-inflammatory drugs (ibuprofen) were routinely prescribed after surgery. All patients were instructed to follow a soft diet for 3 days after the intervention and perform 5 physiotherapy sessions and 3 speech therapy sessions starting 3–5 days after the intervention.

2.4. Statistical Analysis

The variables were expressed as means (±standard deviation (SD)). A normality analysis was performed using the Shapiro–Wilk test on each occasion (from the preoperative to the day 30 evaluation) and in each analysis. A one-way ANOVA with repeated measures was performed for longitudinal analysis when the assumptions were fulfilled. When it was impossible to apply a parametric test, the Friedman test was performed. Kendall's W was used as the coefficient of concordance to determine the effect size for the Friedman test. Dunn's correction was performed for multiple comparisons relative to preoperative measures. $p < 0.05$ was considered statistically significant. The comparative tests were only considered statistically significant when $p < 0.05$ and if pain/discomfort was <2 (no or low pain). These data analyses were performed using SPSS (v26) and GraphPad Prism (v9).

3. Results

A total of 42 patients were assessed for eligibility. A total of 22 patients initially started the study but canceled on Days 6–18, and 11 patients tested positive for SARS-CoV-2 (Figure 1). Nine patients completed this study (Figure 1). All patients were female (n = 9, 100%), and their mean age was 31.67 ± 12.51 years (range 18–54 years old). The arthrogenous diagnosis was: (1) dislocated disc without reduction (DDwoR) (66.7%; n = 6 patients); (2) dislocated disc with reduction (DDwR) (33.3%; n = 3 patients). Seven (77.8%) patients were classified in the Dimitroulis 3 category, and two (22.2%) patients in category 2. Table 1 reports patients' characteristics. All the procedures were Level 2

(double portal) TMJ arthroscopies: seven patients underwent bilateral arthroscopy, and two underwent unilateral arthroscopy, for a total of sixteen joints evaluated (Table 1). The patients were followed up for 32–35 days.

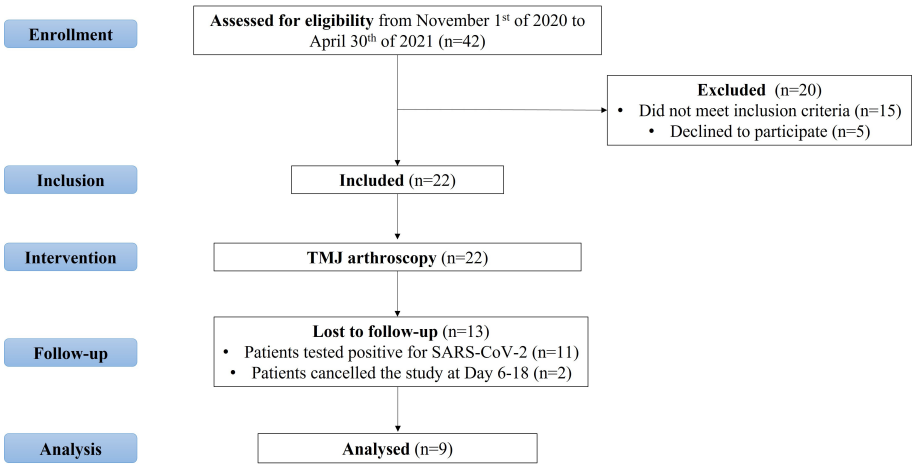

Figure 1. Flowchart of the conducted prospective study.

Table 1. Patients' characteristics. DDwR—Disc displacement with reduction. DDwoR—Disc displacement without reduction. SD—Standard deviation.

Participant (#)	Age	Profession	Principal Diagnosis	Dimitroulis Classification	TMJ Intervention
1	39	Administrative	DDwoR	3	Bilateral Arthroscopy
2	54	Security	DDwoR	3	Bilateral Arthroscopy
3	18	Student	DDwoR	3	Unilateral Arthroscopy
4	23	Student	DDwR	2	Bilateral Arthroscopy
5	31	Music Teacher	DDwoR	3	Bilateral Arthroscopy
6	36	Business	DDwoR	3	Bilateral Arthroscopy
7	43	Beauty Artist	DDwoR	3	Unilateral Arthroscopy
8	25	Administrative	DDwR	3	Bilateral Arthroscopy
9	18	Student	DDwR	2	Bilateral Arthroscopy
Mean (±SD)	31.67 (±12.51)				

In the primary outcome, it was found to have significant effects across time, including discomfort during the mastication of different types of food textures: soft texture—boiled potato and loaf bread slice; medium texture—brioche bread and "Maria" biscuit; hard texture—uncooked almond (Figure 2, Table 2; X2(9) = 32.72, 41.54, 38.26, 39.02, and 42.08, $p < 0.001$). Kendall's W was 0.52, 0.58, 0.53, 0.62, and 0.58, respectively, corresponding to moderate agreement [27]. In addition, a statistically significant reduction in comparison with preoperative discomfort was verified on different days for the textures: soft texture: day 15—boiled potato and loaf bread slice ($p = 0.013$ and $p = 0.025$); medium texture: day 21—brioche bread and "Maria" biscuit ($p = 0.022$ and $p = 0.029$); hard texture: stabilized at mild-moderate discomfort levels from day 15 to day 30.

There was a statistically significant reduction across time in TMJ pain during essential functions, speech, and mastication (Figure 3, Table 3; X2(9) = 25.85 and 39.82, $p = 0.002$ and $p< 0.001$). Kendall's W measurement was 0.479 and 0.553, respectively, corresponding to moderate agreement [27]. Pain intensity during speech and mastication was significantly

reduced on day 12 and day 15 compared with preoperative pain ($p = 0.043$ and $p = 0.018$, respectively). Because all values were null for TMJ pain during deep breaths and deglutition (Figure 3, Table 3), statistical analysis was not performed.

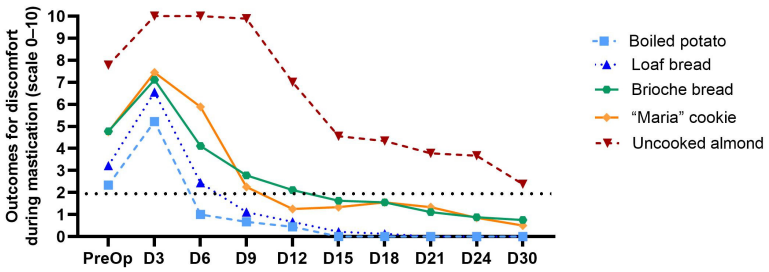

Figure 2. Discomfort means (±SD) for the mastication of different foods from preoperative to postoperative D30. D—postoperative days; scale 0–10. The dashed line represents no or low discomfort (<2).

Table 2. Discomfort means (±SD) for the mastication of different foods from preoperative to postoperative D30. D—postoperative days; SD—standard deviation; Friedman (X2(9)) test of between-subject effects; scale 0–10. * $p < 0.05$.

	Discomfort in the Mastication				
	Soft Texture		**Medium Texture**		**Hard Texture**
	Boiled Potato	**Loaf Bread Slice**	**Brioche Bread**	**"Maria" Biscuit**	**Uncooked Almond**
	(Mean ± SD)				
Preoperative	2.33 ± 1.58	3.22 ± 2.39	4.78 ± 2.53	4.75 ± 2.66	7.78 ± 2.44
D3	5.22 ± 4.49	6.56 ± 4.28	7.11 ± 3.52	7.44 ± 3.84	10.00 ± 0.00
D6	1.00 ± 1.51	2.44 ± 2.96	4.11 ± 3.10	5.89 ± 3.92	10.00 ± 0.00
D9	0.67 ± 1.12	1.11 ± 1.36	2.78 ± 2.17	2.25 ± 1.75	10.00 ± 0.00
D12	0.44 ± 0.88	0.67 ± 1.12	2.11 ± 1.69	1.25 ± 1.83	7.00 ± 3.74
D15	0.00 ± 0.00 *	0.22 ± 0.44 *	1.63 ± 1.77	1.33 ± 1.94	4.56 ± 4.07
D18	0.00 ± 0.00 *	0.13 ± 0.35 *	1.56 ± 1.94	1.56 ± 1.81	4.33 ± 3.71
D21	0.00 ± 0.00 *	0.00 ± 0.00 *	1.11 ± 1.83 *	1.33 ± 1.73 *	3.78 ± 4.02
D24	0.00 ± 0.00 *	0.00 ± 0.00 *	0.88 ± 1.25 *	0.85 ± 1.46 *	3.67 ± 4.18
D30	0.00 ± 0.00 *	0.00 ± 0.00 *	0.75 ± 1.17 *	0.50 ± 1.07 *	2.38 ± 3.78
X2(9)	32.72	41.54	38.26	39.02	42.08
p	<0.001	<0.001	<0.001	<0.001	<0.001
Kendall's W	0.52	0.58	0.53	0.62	0.58

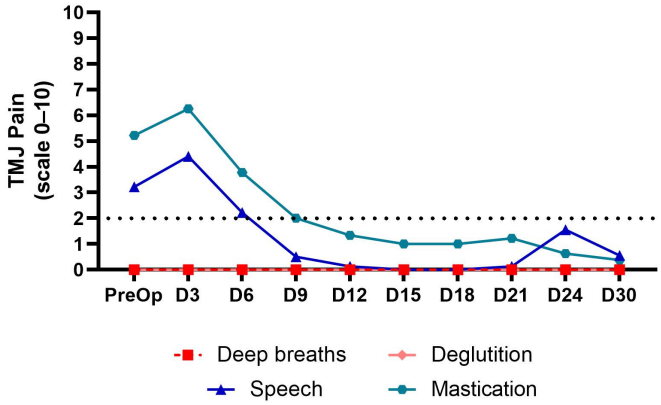

Figure 3. TMJ pain means (±SD) during essential functions from preoperative to postoperative D30. D—postoperative days; scale 0–10. The dashed line represents no or low pain (<2).

Table 3. TMJ pain means (±SD) during essential functions from preoperative to postoperative D30. D—postoperative days; SD—standard deviation; Friedman (X2(9)) test between-subject effects; scale 0–10. * $p < 0.05$ ** $p < 0.001$.

	TMJ Pain			
	During Deep Breaths	**During Speech**	**During Mastication**	**During Deglutition**
	(Mean ± SD)			
Preoperative	0.00 ± 0.00	3.22 ± 3.11	5.22 ± 2.99	0.00 ± 0.00
D3	0.00 ± 0.00	4.40 ± 2.19	4.11 ± 2.57	0.00 ± 0.00
D6	0.00 ± 0.00	2.22 ± 2.64	3.78 ± 2.77	0.00 ± 0.00
D9	0.00 ± 0.00	0.50 ± 0.76	2.00 ± 1.94	0.00 ± 0.00
D12	0.00 ± 0.00	0.13 ± 0.35 *	1.33 ± 1.32	0.00 ± 0.00
D15	0.00 ± 0.00	0.00 ± 0.00 *	1.00 ± 1.41 *	0.00 ± 0.00
D18	0.00 ± 0.00	0.00 ± 0.00 *	1.00 ± 1.32 **	0.00 ± 0.00
D21	0.00 ± 0.00	0.13 ± 0.35 *	1.22 ± 1.99 *	0.00 ± 0.00
D24	0.00 ± 0.00	1.56 ± 2.46	0.63 ± 1.19 **	0.00 ± 0.00
D30	0.00 ± 0.00	0.56 ± 0.88 *	0.38 ± 0.74 **	0.00 ± 0.00
X2(9)		25.85	39.82	
p		0.002	<0.001	
Kendall's W		0.479	0.553	

Significant effects on discomfort when resuming a normal lifestyle were found across time for restarting professional activity and practicing moderate- to high-intensity physical activities (Figure 4, Table 4; X2(8) = 28.08 and 28.38, $p < 0.001$). A moderate agreement was observed for both activities (Kendall's W = 0.44 and 0.44, respectively) [27]. There was a statistically significant decrease in discomfort during the postoperative recovery period on Days 15 and 21 as regards resuming professional activities and physical activity, respectively ($p = 0.001$ and $p = 0.003$).

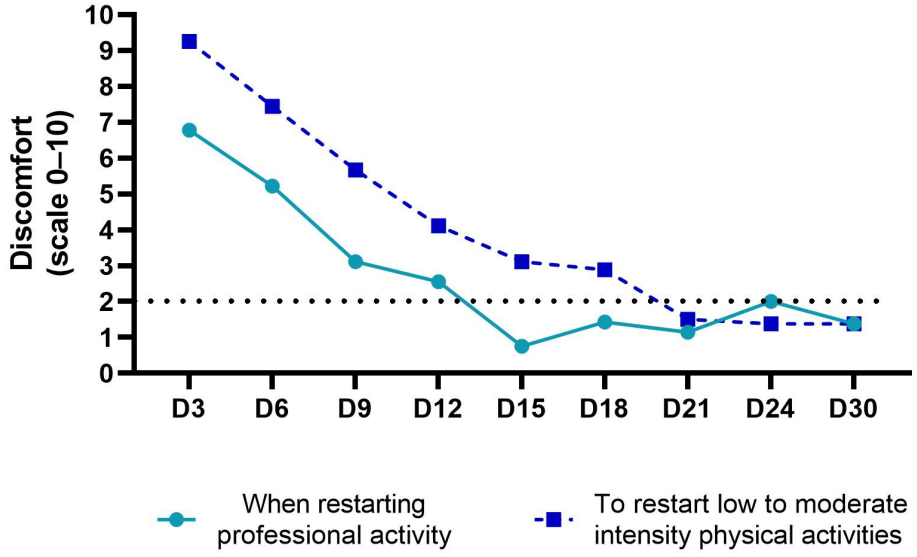

Figure 4. Discomfort means (±SD) in the resumption of normal lifestyle from postoperative D3 to D30. D-postoperative days. The dashed line represents no or low discomfort (<2).

Only residual SOS extra analgesics were needed from postoperative day 9 to day 30, after the end of the medication protocol defined by the clinician (Appendix B Table A3, Table A4) (Figure 5).

Patient satisfaction postoperatively was evaluated on day 30, and the authors differentiated three outcomes: (1) satisfaction with treatment relief (7.78/10); (2) satisfaction with masticatory function (8.88/10); and (3) preoperative expectations (8.11/10) (Figure 6).

Table 4. Discomfort means (±SD) in the resumption of normal lifestyle from postoperative D3 to D30. D-postoperative days; SD-standard deviation; Friedman (X2(9)) test of between-subject effects; scale 0–10. * $p < 0.05$ ** $p < 0.001$.

	Discomfort when Restarting Professional Activity	Discomfort when Restarting Moderate to High-Intensity Physical Activities
	Mean ± SD	
D3	6.78 ± 2.68	9.25 ± 1.49
D6	5.22 ± 3.31	7.44 ± 3.4
D9	3.11 ± 3.55	5.67 ± 3.2
D12	2.56 ± 2.40	4.11 ± 3.2
D15	0.75 ± 1.39 **	3.11 ± 3.86
D18	1.43 ± 2.3 *	2.89 ± 3.98
D21	1.14 ± 2.19 *	1.50 ± 3.46 *
D24	2.00 ± 3.70 *	1.38 ± 3.50 *
D30	1.38 ± 3.50 *	1.38 ± 3.50 *
X2(8)	28.08	28.38
p	<0.001	<0.001
Kendall's W	0.44	0.44

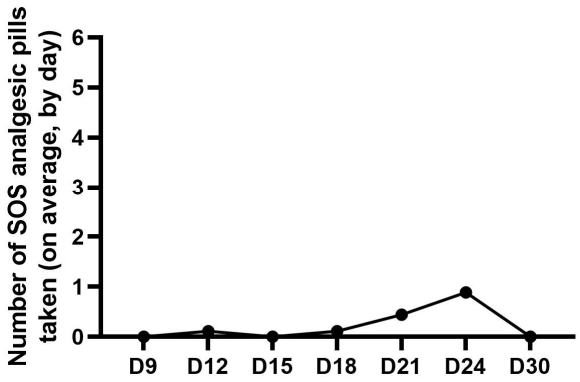

Figure 5. Number of extra analgesic pills taken in the postoperative period, on average, by day. D: postoperative days.

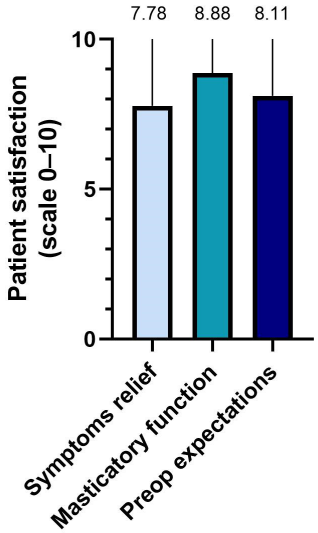

Figure 6. Patient satisfaction (symptom relief, masticatory function, and preoperative expectations) on postoperative D30, on average.

4. Discussion

The authors should discuss the results and how they can be interpreted from the perspective of previous studies and the working hypotheses. The findings and their implications should be addressed in the broadest possible context. Future research directions may also be highlighted.

Most studies evaluating postoperative recovery after TMJ arthroscopy have observed successful results. However, most focused on two outcomes: pain and mouth opening [14,15]. Few studies have evaluated functional outcomes related to mastication [18,19] or their effect on a patient's quality of life [20–22].

The ingestion of certain foods with different textures creates discomfort and pain in the TMJ and surrounding muscles [28]. Consequently, patients were instructed to rate their discomfort during the mastication of different food textures (on a scale of 0–10) as a primary outcome in this study. Postoperative local inflammation (with joint tension, stiffness, and pain) meant that patients reported increased discomfort during the mastication of the studied foods in the first three to six postoperative days, as already described in the literature [6]. A progressive tolerance to scaling food textures was observed: soft texture: day 15—boiled potato and loaf bread slice; medium texture: day 21—brioche bread and "Maria" biscuit; hard texture: discomfort when consuming one uncooked almond stabilized at mild-moderate levels from day 15 to day 30. The authors believe that patients recovering from TMJ arthroscopy would feel comfortable and safe introducing a soft texture diet around postoperative day 15 and foods with a moderate texture grade around day 21. Food with a hard texture will only be possible after the first month of recovery.

According to other research, this study found that TMJ arthroscopy effectively reduced TMJ pain [14,16]. A significant pain reduction of ~72–83% was observed after 30 days. The TMJ pain during mastication decreased significantly on day 15 and was practically null on day 30. TMJ pain during the speech was significantly reduced on day 12 but remained at residual levels in the following days. Arthroscopy did not cause pain during deep breaths or deglutition. Acceptable discomfort in resuming professional activities and exercise was verified on days 15 and 21, respectively, postoperatively. This assessment suggests the resumption of essential day-to-day activities within a maximum of 15 days, while more physical tasks may require longer recovery, up to approximately three weeks after surgery.

The postoperative medication in this study was effective, and the need for extra medication was practically null during the postoperative month. Furthermore, at the end of the follow-up period, on average, the patients indicated a high level of satisfaction regarding the relief of their preoperative symptoms, improvement in their masticatory function, and their preoperative expectations of the surgery and postoperative recovery.

Due to the SARS-CoV-2 pandemic, the authors could not gather a larger and more differentiated study sample. The results obtained should be replicated in a larger study. In addition, no biomechanical tests were performed to confirm the texture of the food. The fact that the patients answered the questionnaire directly with the interviewer may have created some bias in their answers. In future studies using a similar protocol, the authors advise using more explicit definitions for the grades of discomfort during mastication. When using this scale, some patients initially indicated increased discomfort when transitioning from a soft diet to a diet with foods of a higher size and/or higher grades of hardness. This was expected due to the increasing difficulty with the food's mastication; on average, it did not reflect an aggravation of symptoms.

According to the authors' knowledge, this is the first study evaluating the evolution of the masticatory function regarding different food textures in patients suffering from TMD during postoperative recovery from TMJ arthroscopy. The level of mastication pain seems to be directly related to food texture. These pioneering outcomes for evaluating postoperative recovery after TMJ surgery are interesting and reproducible.

5. Conclusions

This study observed an early return to masticatory capacity with the progressive introduction of different food textures after TMJ arthroscopy. This treatment effectively reduced pain and other symptoms related to the masticatory function. Masticatory capacity was normalized after the first 15 days. Patients could return to work and to practice physical exercise from D15 and D21, respectively. In addition, significant improvements in TMJ pain during mastication and speech were observed over time. Overall, the patients indicated high levels of satisfaction with this surgical technique. The authors expect these results can help with future postoperative guidelines regarding postoperative recovery from TMJ arthroscopy.

Author Contributions: Conceptualization, D.F.Â., A.P. and H.J.C.; methodology, D.F.Â., A.P. and H.J.C.; validation, D.F.Â. and A.P.; formal analysis, A.P.; investigation, D.F.Â. and A.P.; resources, D.F.Â.; data curation, H.J.C.; writing—original draft preparation, D.F.Â., A.P. and H.J.C.; writing—review and editing, D.F.Â., A.P. and H.J.C.; supervision, D.F.Â. and H.J.C.; project administration, D.F.Â. and H.J.C. All authors have read and agreed to the published version of the manuscript.

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Institutional Review Board Statement: The study was conducted in accordance with the Declaration of Helsinki and approved by the Ethics Committee of Centro Académico de Medicina de Lisboa (Ref N. 45/21, 14 July 2021).

Informed Consent Statement: Informed consent was obtained from all subjects involved in the study. Written informed consent has been obtained from the patient(s) to publish this paper.

Data Availability Statement: Not applicable.

Conflicts of Interest: The authors declare no conflict of interest.

Appendix A

Table A1. Questionnaire used in the study.

	Discomfort with the Mastication of Different Food Textures
Question 1	How would you describe your discomfort during the mastication of one cooked potato? (on the left and right sides)
Question 2	How would you describe your discomfort during the mastication of one slice of load bread? (on the left and right sides)
Question 3	How would you describe your discomfort during the mastication of one half of a brioche bread? (on the left and right sides)
Question 4	How would you describe your discomfort during the mastication of one Maria biscuit? (on the left and right sides)
Question 5	How would you describe your discomfort during the mastication of one uncooked and unpeeled almond? (on the left and right sides)
	TMJ pain during essential functions
Question 6	How would you describe your TMJ pain during deep breaths? (on the left and right sides)
Question 7	How would you describe your TMJ pain during deglutition? (on the left and right sides)
Question 8	How would you describe your TMJ pain during the speech? (on the left and right sides)
Question 9	How would you describe your TMJ pain during mastication? (on the left and right sides)
	Discomfort when resuming normal lifestyle
Question 10	How would you describe your discomfort when restarting professional activity? (on the left and right sides)
Question 11	How would you describe your discomfort when restarting moderate to high-intensity physical activities? (on the left and right sides)
	Number of SOS analgesics needed
Question 12	Please indicate the average number of SOS analgesic pills taken each day (over the previous 3 days).
	Participant satisfaction
Question 12	Are you, overall, satisfied with the relief of your symptoms?
Question 13	Are you satisfied with your masticatory improvement?
Question 15	Were we able to match your preoperative expectations? Are you satisfied with the surgery and your postoperative recovery experiences?

Appendix B

Table A2. List of foods and their preparation.

Foods	Preparation
Potato, of 25–35 mm size (A)	Boil one potato for 15 min and let it cool for another 15 min, before ingestion.
Loaf bread (Bimbo® brand) (B)	One slice of loaf bread without crust.
Brioche bread, similar to hamburger or hot dog bun (Bimbo® brand) (C)	Break one brioche bread in half.
Maria biscuit similar to the Rich Tea biscuit (Vieira® brand) (D)	1 Maria biscuit.
Uncooked almond (E)	Do not cook or peel it.
	
None of these foods should be broken into smaller pieces (than indicated above) nor be kept inside the mouth too long (softening the food), because these factors might interfere with the results.	
The food should be ingested on the days you attend an interview. If you feel any kind of discomfort during the mastication of any of the foods, stop. You should not force the mastication.	

Table A3. Medication.

Medication/Drug	Dosage	Duration
Amoxicillin + Clavulanate (875 mg + 125 mg)	1 pill → 12/12 h	8 days
Clonixin (300 mg)	1 capsule → 8/8 h	5 days
Paracetamol + Thiocolchicoside (500 mg + 2 mg)	2 pills → 8/8 h	5 days
Esomeprazole (20 mg)	1 pill → 24/24 h	5 days
Tramadol (50 mg)	1 pill → 12/12 h	SOS → If pain persists. Take Ondansetron and Tramadol together
Ondansetron (4 mg)	1 pill → 12/12 h	

Note: Substitute Clarithromycin (Dosage: 500 mg; 1 pill | Frequency: 12/12 h | Duration: 8 days) if there is a reported allergy to Amoxicillin and/or Clavulanate.

Table A4. Methylprednisolone dosage schedule.

Methylprednisolone	Breakfast	Lunch	Dinner
Postoperative D1	8 mg	8 mg	8 mg
Postoperative D2	8 mg	8 mg	4 mg
Postoperative D3	8 mg	4 mg	4 mg
Postoperative D4	4 mg	4 mg	4 mg
Postoperative D5	4 mg	4 mg	4 mg

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