PUCRS

PONTIFÍCIA UNIVERSIDADE CATÓLICA DO RIO GRANDE DO SUL
PROGRAMA DE PÓS-GRADUAÇÃO EM ODONTOLOGIA
MESTRADO EM CIRURGIA E TRAUMATOLOGIA BUCO MAXILO FACIAL

ALEXANDRE WEBER

Avaliação da qualidade de vida usando OHIP-14 em pacientes submetidos à reposição total da articulação temporomandibular: um estudo prospectivo

Porto Alegre
2017

PÓS-GRADUAÇÃO - *STRICTO SENSU*

Pontifícia Universidade Católica
do Rio Grande do Sul

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DISSERTAÇÃO DE MESTRADO

ÁREA DE CONCENTRAÇÃO: CIRURGIA E TRAUMATOLOGIA BUCOMAXILOFACIAL

ALEXANDRE WEBER

Avaliando mudanças na qualidade de vida usando OHIP-14 em pacientes submetidos à reposição total da articulação temporomandibular: um estudo prospectivo

PORTO ALEGRE
2017

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Avaliando mudanças na qualidade de vida usando OHIP-14 em pacientes submetidos à reposição total da articulação temporomandibular: um estudo prospectivo

Dissertação apresentada ao Programa de Pós-Graduação da Faculdade de Odontologia da Pontifícia Universidade Católica do Rio Grande do Sul para a obtenção do grau de Mestre em Odontologia, área de concentração em Cirurgia e Traumatologia Bucomaxilofacial

Orientador: Prof. Dr. Eduardo Martinelli Santayana de Lima

Porto Alegre
2017

Resumo Geral

Resumo

Objetivo: Comparar, em pacientes tratados com prótese total da articulação temporomandibular (ATM), a qualidade de vida relacionada à saúde bucal antes e após a cirurgia, utilizando a forma curta do perfil de impacto na saúde bucal (OHIP-14). **Material e Métodos:** Os participantes foram convidados a completar o OHIP-14 antes da cirurgia (T0) e aos 2 meses (T1), 6 meses (T2) e 1 ano após a cirurgia (T3). A intensidade da dor e a gravidade dos sintomas foram avaliadas usando uma escala visual analógica (EVA). **Resultados:** Dez pacientes tratados com prótese de ATM com acompanhamento de 1 ano foram incluídos. Entre T0 e T3, os escores médios diminuíram significativamente de 1,1 ± 1,0 para 0,1 ± 0,2 na limitação funcional, de 3,4 ± 0,6 para 0,0 ± 0,1 em dor física, de 2,9 ± 0,9 para 0,1 ± 0,2 em desconforto psicológico, de 2,2 ± 1,5 para 0,1 ± 0,3 em deficiência física e de 1,7 ± 0,9 para 0,0 ± 0,0 em deficiência psicológica ($p < 0,001$ para todas as comparações). Houve também uma diminuição significativa no escore total médio de OHIP-14 entre T0 (12,32 ± 5,18) e T3 (0,44 ± 0,65) ($p < 0,001$). Observou-se melhora significativa na dor na ATM de T0 a T3 ($p < 0,001$), com melhorias também observadas na dor de cabeça e na fadiga muscular. Conclusões: Nossos resultados sugerem que a reposição total da ATM reduz os sintomas e a dor, levando a uma melhora na qualidade de vida dos pacientes e no bem-estar psicológico.

Palavras-chave[1]: Estudos longitudinais, saúde bucal, avaliação de resultados do paciente, qualidade de vida.

1 Descritores em Ciência da Saúde (DeCS), disponível em http://decs.bvs.br. Acesso em: 30 nov. 2017.

GENERAL ABSTRACT

ABSTRACT

Objective: To compare, in patients treated with total temporomandibular joint (TMJ) prostheses, oral health-related quality of life before and after surgery using the short form of the Oral Health Impact Profile (OHIP-14). **Material and Methods**: Participants were asked to complete the OHIP-14 before surgery (T0) and at 2 months (T1), 6 months (T2), and 1 year after surgery (T3). Pain intensity and symptom severity were rated using a visual analogue scale (VAS). **Results**: Ten patients treated with TMJ prostheses completed the 1-year follow-up and were included. Between T0 and T3, mean scores decreased significantly from 1.1±1.0 to 0.1±0.2 in functional limitation, from 3.4±0.6 to 0.0±0.1 in physical pain, from 2.9±0.9 to 0.1±0.2 in psychological discomfort, from 2.2±1.5 to 0.1±0.3 in physical disability, and from 1.7±0.9 to 0.0±0.0 in psychological disability ($p < 0.001$ for all comparisons). There was also a significant decrease in the mean total OHIP-14 score between T0 (12.32±5.18) and T3 (0.44±0.65) ($p < 0.001$). Significant improvement was observed in TMJ pain from T0 to T3 ($p < 0.001$), with improvements also seen in headache and muscle fatigue. **Conclusions**: Our results suggest that total TMJ replacement reduces symptoms and pain, leading to an improvement in patients' quality of life and psychological well-being.

Keywords: longitudinal studies, oral health, patient outcome assessment, quality of life.

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LISTA DE ABREVIATURAS, SIGLAS E SÍMBOLOS

LISTA DE ABREVIATURAS

ATM	**Articulação Têmporomandibular**
CAPES	**Coordenação de Aperfeiçoamento Pessoal de Nível Superior**
CEP	**Comitê de Ética em Pesquisa**
EVA	**Escala Visual Analógica**
et al.	**e colaboradores**
F	**Female - feminino**
M	**Male - masculino**
M	**Mean – média**
n	**Número ou amostra**
OHIP	**Oral Health Impact Profile**
PUCRS	**Pontifícia Universidade Católica do Rio Grande do Sul**
SIPESQ	**Sistema de Pesquisas**
TMJ	**Tempormandibular Joint**
VAS	**Visual Analogue Scale**

SUMÁRIO

AGRADECIMENTOS:

Dedico esta obra primeiramente a meu orientador Professor Dr. Claiton Heitz, pela confiança, amizade e oportunidade de ingresso para realização de um sonho. Minha eterna gratidão a um grande amigo.

Ao Prof. Dr. Eduardo Martinelli Santayana De Lima, por me acolher e aceitar finalizar meu trabalhar com sua equipe, sua honestidade, simplicidade e clareza tornam nosso convívio agradável e próspero.

A minha esposa Luciana Almeida Pedroso Weber, por compreender e apoiar meu propósito de vida. Entendo que não é fácil a distancia na busca de meu estudo. “A verdadeira felicidade está na própria casa, entre as alegrias da família”

A meus pais Carlos Alberto Soares Weber, e Nelcinda Mara Silva de Souza e minha irmã Larissa de Souza Weber, que não pouparam esforços para minha educação, obrigado pelos valores ensinados, pela dedicação, amor e carinho. Eu amo vocês!

Ao meu amigo e eterno professor Dr. Diego Segatto Blaya, responsável pelo meu interesse e ingresso na área de Cirurgia e Trtaumatologia Buco Maxilo Facial. Agradeço pela orientação, humildade e amizade, que se confundem numa mistura em que o resultado foi sempre positivo e inspirador.

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A todos os pacientes participantes do estudo, meu sincero agradecimento pela confiança creditada e pela colaboração.

À Coordenação do Curso de Pós-Graduação em Odontologia da Faculdade de Odontologia da PUCRS, Ex. Coordenadora Profa. Dr. Ana Maria Spohr, e atual coordenadora Profa. Dra. Maria Martha Campos. Agradeço as oportunidades proporcionadas durante a realização do curso de Mestrado.

À CAPES, pelo apoio financeiro disponibilizado através da bolsa, indispensável para a realização deste curso.

À Faculdade de Odontologia da Pontifícia Universidade Católica do Rio Grande do Sul, pela excelente estrutura e qualidade de ensino proporcionada.

Artigo

O artigo a seguir intitula-se “Assessing changes in quality of life using OHIP-14 in patients undergoing total temporomandibular joint replacement: a prospective study**.” Foi formatado de acordo com as normas do periódico International Acta Odontologica Scandinavica (Anexo C).**

ANEXO A – Carta de aprovação do Comitê de Ética em Pesquisa da Faculdade de Odontologia PUCRS

SIPESQ

Sistema de Pesquisas da PUCRS

Código SIPESQ: 7895

Prezado(a) Pesquisador(a),

A Comissão Científica da FACULDADE DE ODONTOLOGIA da PUCRS apreciou e aprovou o Projeto de Pesquisa "AVALIAÇÃO DA QUALIDADE DE VIDA EM PACIENTES SUBMETIDOS À PRÓTESE DE ARTICULAÇÃO TEMPOROMANDIBULAR". Este projeto necessita da apreciação do Comitê de Ética em Pesquisa (CEP). Toda a documentação anexa deve ser idêntica à documentação enviada ao CEP, juntamente com o Documento Unificado gerado pelo SIPESQ.

Atenciosamente,

Comissão Científica da FACULDADE DE ODONTOLOGIA

ANEXO B – Comprovante de submissão de artigos para obtenção do título de Mestre em Odontologia.

Journal of Craniofacial Surgery

Juvenile nasopharyngeal angiofibroma with sphenoid sinus invasion and protrusion: Treatment approach with Le Fort I osteotomy - A case report and literature review

--Manuscript Draft--

Manuscript Number:	
Full Title:	Juvenile nasopharyngeal angiofibroma with sphenoid sinus invasion and protrusion: Treatment approach with Le Fort I osteotomy - A case report and literature review
Short Title:	Juvenile nasopharyngeal angiofibroma with sphenoid sinus invasion and protrusion: Treatment approach with Le Fort I osteotomy
Article Type:	Brief Clinical Studies
Keywords:	Keywords: Angiofibroma; Nasopharyngeal Neoplasms; Osteotomy, Le Fort
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Manuscript Region of Origin:	BRAZIL
Author Comments:	
Suggested Reviewers:	
Abstract:	Juvenile nasopharyngeal angiofibroma (JNA) is a rare benign tumor that occurs predominantly in young males. We report the case of a 22-year-old male patient who presented with a painless, exophytic tumor mass protruding through the right nostril, with anterior lateral extension associated with severe posterior involvement, erosion of the sphenoid bone to the right of the pterygoid process, and significant epistaxis. The preoperative evaluation, surgical approach, postoperative results, and a review of the literature are presented. The surgical approach with Le Fort I osteotomy was designed to facilitate surgical access to the tumor in the nasal cavity. Before down-fracture of the maxilla, plates were placed for fixation and holes were made to produce reference points for restoration of normal anatomy after tumor removal. Although the literature describes the use of nonsurgical therapies, it is well established that surgical treatment is the best option for patients with JNA. Treatment also requires preoperative embolization to avoid bleeding and ensure safety during tumor resection. Long-term imaging follow-up every 6-8 months for at least 3 years after surgery is needed for detection of residual tumor/recurrence. The modified technique used here together with preoperative embolization was essential to successful outcome.

Biological Trace Element Research

Metal concentration of saliva from orthodontic patients

–Manuscript Draft–

Manuscript Number:	
Full Title:	Metal concentration of saliva from orthodontic patients
Article Type:	Original Article
Keywords:	fixed orthodontic appliances; saliva/analysis; concentration/metal ion; orthodontic patients
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	Alexandre Weber
	Clailton Heitz
Order of Authors Secondary Information:	
Funding Information:	
Abstract:	Objective: To examine and compare levels of metal ions released from saliva of patients with and without orthodontic appliance. Materials and Methods: A total of 40 patients were included in the study. The sample was divided into two groups: group 1 - patients who were not receiving orthodontic treatment; group 2 - patients who were between the 6th and 8th month of orthodontic treatment. Saliva samples were collected from both groups and analyzed by inductively coupled plasma mass spectrometry and inductively coupled plasma optical emission spectrometry. The concentration content of nine different metal ions was verified: copper (Cu), zinc (Zn), titanium (Ti), chromium (Cr), nickel (Ni), iron (Fe), manganese (Mn), aluminum (Al), Vanadium (V) and cobalt (Co). Post-hoc pair-wise comparisons among groups of the same element were calculated using the Wilcoxon signed rank test (P<0.01). Results: The results showed an increase in the salivary concentration (µg/L) of: Ni (group 1=10.33; group 2=55.12); Al (group 1=112.29; group 2=37.03); Cr (group 1=17.33; group 2=44.15); Ti (group1=30.4; group 2=36.29); Cu (group 1=44.09; group 2=153.45); V (group 1=3.22; group 2=2.6); Zn (group 1=225.4; group 2=264.95). However, only the increase in Cr and Cu was statistically significant. Conclusion: It can be concluded that analysis of saliva metal concentration provides relevant information as to which metal ions are altered in the salivary composition upon the use of orthodontic appliances and that the placement of fixed orthodontic appliances leads to increased salivary metal ion concentrations, particularly that of chromium and copper.
Suggested Reviewers:	Hugo Oshima, PhD Pontifícia Universidade Católica do Rio Grande do Sul

Assessing changes in quality of life using OHIP-14 in patients undergoing total temporomandibular joint replacement: a prospective study

Running Head: Quality of life after TMJ replacement

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Assessing changes in quality of life using OHIP-14 in patients undergoing total temporomandibular joint replacement: a prospective study

ABSTRACT

Objective: To compare, in patients treated with total temporomandibular joint (TMJ) prostheses, oral health-related quality of life before and after surgery using the short form of the Oral Health Impact Profile (OHIP-14). **Material and Methods**: Participants were asked to complete the OHIP-14 before surgery (T0) and at 2 months (T1), 6 months (T2), and 1 year after surgery (T3). Pain intensity and symptom severity were rated using a visual analogue scale (VAS). **Results**: Ten patients treated with TMJ prostheses completed the 1-year follow-up and were included. Between T0 and T3, mean scores decreased significantly from 1.1±1.0 to 0.1±0.2 in functional limitation, from 3.4±0.6 to 0.0±0.1 in physical pain, from 2.9±0.9 to 0.1±0.2 in psychological discomfort, from 2.2±1.5 to 0.1±0.3 in physical disability, and from 1.7±0.9 to 0.0±0.0 in psychological disability ($p < 0.001$ for all comparisons). There was also a significant decrease in the mean total OHIP-14 score between T0 (12.32±5.18) and T3 (0.44±0.65) ($p < 0.001$). Significant improvement was observed in TMJ pain from T0 to T3 ($p < 0.001$), with improvements also seen in headache and muscle fatigue. **Conclusions**: Our results suggest that total TMJ replacement reduces symptoms and pain, leading to an improvement in patients' quality of life and psychological well-being.

Keywords: longitudinal studies, oral health, patient outcome assessment, quality of life.

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Conflict of Interest: The authors report no conflicts of interest.

Introduction

The temporomandibular joint (TMJ) is the most active joint of the body, moving up to 2,000 times a day during talking, chewing, swallowing, and snoring. Patients requiring prosthetic TMJ replacement show functional and clinical changes, such as difficulty chewing, dental malocclusion, and preauricular pain. In these cases, imaging tests are required for the correct diagnosis and proper selection of treatment [1].

Total TMJ prostheses have been indicated for patients with a history of at least two TMJ surgeries, regardless of whether or not previous alloplastic implants containing Proplast/Teflon, Silastic (Dow Corning Inc., Midland, MO, USA), acrylic, or bone cements have been used [2, 3]. Other indications include failed autogenous reconstruction, fibrous or bony ankylosis, trauma, absence of anatomic structures (such as fractured condyles with extensive displacement or substance loss), absence of condyles or portions of the mandibular ramus due to a previous surgery, and large tumors involving the condyle and the fossa [4, 5]. Total TMJ prostheses are also a treatment option in cases of active and progressive condylar resorption [6].

Although total TMJ replacement is recognized as an effective intervention for TMJ disorders, its advantages should be balanced against any negative impact it may have on patients' quality of life. One of the most widely used indicators of oral health-related quality of life is the short form of the Oral Health Impact Profile (OHIP-14) [7], which assesses specific oral health-related physical, psychological, and social aspects of quality of life.

The present study was therefore designed to compare, in patients treated with total TMJ prostheses, oral health-related quality of life before surgery and at 2 months, 6 months, and 1 year after surgery using the OHIP-14 and to assess the impact of treatment outcome on patients in terms of pain and symptom relief.

Materials and methods

This prospective longitudinal study was approved by the Research Ethics Committee of our institution (registration no. 70056217.4.0000.5336). A convenience sample of consecutive patients treated with total TMJ prostheses between January 2016 and December 2016 was surveyed. Participants were assured about the confidentiality of their responses. Written informed consent was obtained from all individual participants before enrollment.

Eligible participants were all patients aged ≥ 18 years with an indication for TMJ replacement and clinical manifestations such as pain and/or difficulty making mandibular movements. Computed tomography scanning and magnetic resonance imaging were performed, and patients with any of the following conditions were referred for unilateral or bilateral TMJ reconstruction with total joint prosthesis: a history of at least two TMJ surgeries with no postoperative clinical improvement; advanced idiopathic condylar atrophy with clinical signs of anterior open bite; chronic joint pain and excessive wear of the condyle; failed autogenous grafting; fibrous or bony ankylosis; trauma with substance loss where fracture reduction was not feasible; or absence of anatomic structures, such as the condyle and the fossa. Patients who did not complete 1 year of postoperative follow-up, with postoperative trauma, and who were unable to complete the OHIP-14 questionnaire in Portuguese were excluded from the study.

Participants were asked to complete the OHIP-14 before surgery (T0) and at 2 months (T1), 6 months (T2), and 1 year after surgery (T3). The OHIP-14 consists of 14 items divided into seven domains (two items per domain): functional limitation (items 1 and 2), physical pain (items 3 and 4), psychological discomfort (items 5 and 6), physical disability (items 7 and 8), psychological disability (items 9 and 10), social disability

(items 11 and 12), and handicap (items 13 and 14). Each question was rated on a 5-point Likert scale ranging from 0 (never) to 4 (very often), and scores were multiplied by the weight of each item (0.51, 0.49, 0.34, 0.66, 0.45, 0.44, 0.53, 0.48, 0.60, 0.40, 0.38, 0.62, 0.5, and 0.41 for items 1-14, respectively). Total score ranged from 0 to 28, with higher scores indicating greater negative impact of oral health on the quality of life.

A 10-cm visual analogue scale (VAS), ranging from 0 (no pain) to 10 (worst pain possible), was used to measure TMJ pain intensity and the severity of symptoms such as headache, muscle fatigue, and local pain in all patients. Measurements were also performed before surgery (T0) and at 2 months (T1), 6 months (T2), and 1 year after surgery (T3).

Statistical analysis

A domain score range of 0 to 4 was established as a criterion for statistical analysis. The Friedman test was used to compare differences in OHIP-14 scores and to assess changes in OHIP-14 scores and VAS pain scores between T0, T1, T2, and T3 for all patients, as data were not normally distributed. The significance level was set at 5%. *P*-values < 0.05 rejected the null hypothesis that there is no significant difference or relationship between pre- and postoperative results. R Core Team version 3.3.1 (R Foundation for Statistical Computing, Vienna, Austria) was used for statistical analysis.

Results

Ten patients completed the 1-year follow-up and were included in the study, four men and six women. Five patients underwent unilateral replacement (four right TMJs and one left TMJ) and five underwent bilateral replacement. Mean patient age at surgery was 37.3 years (range: 18 to 55 years). Patients were diagnosed with

rheumatoid arthritis (n = 1), ankylosing spondylitis (n = 1), history of trauma (n = 5), and idiopathic condylar atrophy (n = 3). Fifteen TMJ total joint prosthesis systems (five unilateral and five bilateral) were surgically placed: seven customized devices (including virtual surgical planning, medical modeling and simulation, physical biomodel, cutting guide, and customization of the prosthesis; Engimplan®) and eight prefabricated devices (stock products; Lawrence®). Two patients had undergone at least one failed surgery before receiving a total TMJ prosthesis. The demographic characteristics of the patients are shown in Table 1.

The mean total OHIP-14 score and mean OHIP-14 scores per domain at each assessment time point are shown in Table 2. There was a statistically significant reduction in the mean total OHIP-14 score from T0 (12.32±5.18) to T2 (2.53±2.01) and T3 (0.44±0.65) ($p < 0.001$ for both comparisons), indicating a reduction in the negative impact of oral health on patients' quality of life after surgery. The overall comparison of OHIP-14 domain scores before surgery (T0) and after surgery (T1, T2, and T3) showed a significant decrease in functional limitation domain scores between T0 and T3 ($p < 0.001$). Physical pain domain scores decreased significantly from T0 to T2, T0 to T3, and T1 to T3 ($p < 0.001$ for all comparisons). There was also a significant decrease in mean scores in the psychological discomfort, physical disability, and psychological disability domains from T0 to T2 and T0 to T3 ($p < 0.001$ for all comparisons). There was no significant change in social disability and handicap domain scores between any time points ($p = 0.1207$ and $p = 0.1196$, respectively, for all comparisons) (Table 2).

There was a significant improvement in TMJ pain from T0 (7.04±1.85) to T2 (2.53±2.01) and T3 (0.44±0.65), and from T1 (5.71±3.24) to T3 (0.44±0.65) ($p < 0.001$ for all comparisons). Improvements were also observed in headache and muscle fatigue (data not shown).

Discussion

The present study investigated the impact of total TMJ replacement on patients' quality of life. The results showed a significant reduction in total OHIP-14 score and in scores in functional limitation and in all physical and psychological domains over 1-year follow-up, indicating an improvement in patients' oral health-related quality of life after TMJ surgery.

Patients also reported high satisfaction in terms of reduced physical pain. This improvement was observed at 6 months after surgery both by the OHIP-14 and VAS. Symptoms such as headache, muscle fatigue, and joint pain improved after TMJ replacement as measured by the VAS. Although at 2 months symptoms of pain persisted, a significant improvement was observed at both the 6-month and 1-year time points. These results are consistent with OHIP-14 scores, which showed a progressive improvement in quality of life from 6 months to 1 year after surgery. Psychological discomfort, which involves patients' stress and concern with problems affecting the TMJ, also improved with total TMJ replacement from 6 months to 1 year after surgery. This may be associated with the recovery of mandibular movements, which are often impaired by trauma or diseases that cause a degenerative process in the TMJ, affecting patients' quality of life [2, 3].

Several studies have assessed the impact of maxillofacial surgical treatments on quality of life, with a growing interest in TMJ surgery over the last decades through the use of patient-centered scales [8-11]. The OHIP-14 evaluates patients' perceptions of the impact of oral health on their quality of life and is also considered a useful tool to assess the need for surgery, including its effectiveness and efficacy, in evidence-based practice [12-14] In this respect, subjective measures that include patients' perceptions of their oral condition have been used to obtain a more accurate diagnosis [15]. Also,

sociodental indicators based on self-perception and dental impact provide important advantages to planning dental services [16]. In the present study, all patients received an indication for TMJ reconstruction with total joint prosthesis after not responding to previous conservative treatment (nonsteroidal anti-inflammatory drugs, physiotherapy, discopexy, and arthroscopy). The clinical assessment of patients using the OHIP-14 was an important factor to refer them for additional imaging, which confirmed severe TMJ impairment and the need for prosthetic replacement. Therefore, only patients truly requiring total TMJ replacement due to absence of anatomic structures were referred for surgery.

The present study showed that TMJ prostheses satisfactorily meet the aim of joint reconstruction, improving the quality of life of patients undergoing this treatment [14]. These results are highly relevant, as they show progressive clinical improvement that usually starts at the sixth month after surgery. This improvement may be explained by the evolution of prosthetic devices. With the implementation of prototypical prosthetic systems, there is minimal bone wear at implantation and customized systems can be designed by virtual surgical planning, providing greater predictability and safety for the surgical procedure [17].

Postoperative complications are minimal and rare. Of 10 patients treated with total TMJ prostheses, none had postoperative complications, and all surgical incisions healed with no edema or significant scars. Although headache was still reported by some patients at the second month, all patients showed improvements in pain and quality of life at the sixth month after surgery. On 1-year radiographic evaluation, there was no loose fixation system or other complications associated with this system, and patients showed no clinical signs of complications associated with the surgical procedure [18].

Conclusion

Our results suggest that total TMJ replacement reduces symptoms and pain-related outcomes, leading to long-term improvement in patients' quality of life and psychological well-being. These findings also demonstrate the importance of studies with long-term follow-up in assessing the outcomes of total TMJ replacement with prosthetic systems, and highlight the need for further studies comparing this surgical procedure with other methods used in the treatment of severe joint disorders.

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Table 1. Patients' characteristics (*n* = 10).

Patient no.	Previous surgery	Etiology	Side	Sex	Age	Type of prosthesis
1	No	Trauma (ankylosis)	Both	F	55	Standard
2	No	Trauma (ankylosis)	Both	M	50	Standard
3	No	Ankylosing spondylitis	Both	F	46	Customized
4	No	Idiopathic condylar atrophy	Both	F	42	Customized
5	No	Trauma (ankylosis)	Left	M	18	Customized
6	No	Idiopathic condylar atrophy	Right	F	30	Customized
7	Fracture reduction	Trauma (ankylosis)	Right	M	34	Standard
8	Discopexy	Rheumatoid arthritis	Both	F	34	Standard
9	No	Idiopathic condylar atrophy	Right	F	31	Customized
10	No	Trauma (ankylosis)	Right	M	33	Standard

Table 2. Means and standard deviations for Oral Health Impact Profile-14 (OHIP-14) domains at each assessment time point.

Domain	T0	T1	T2	T3
Functional limitation*	1.1 (1.02)	0.55 (0.60)	0.25 (0.35)	0.1 (0.21)
Physical pain†	3.4 (0.61)	1.55 (0.50)	0.55 (0.44)	0.05 (0.16)
Psychological discomfort‡	2.9 (0.91)	1.3 (0.92)	0.8 (0.59)	0.1 (0.21)
Physical disability§	2.2 (1.48)	0.9 (0.94)	0.4 (0.52)	0.15 (0.34)
Psychological disability‖	1.75 (0.95)	0.65 (0.67)	0.2 (0.35)	0 (0)
Social disability	0.65 (0.78)	0.4 (0.46)	0.2 (0.35)	0.05 (0.16)
Handicap	0.3 (0.67)	0.25 (0.54)	0.1 (0.21)	0 (0)
Total OHIP-14¶	12.32 (5.18)	5.71 (3.24)	2.53 (2.01)	0.44 (0.65)

T0, before surgery; T1, at 2 months; T2, at 6 months; T3, at 1 year.

* Significantly different at T0 vs T3 ($p < 0.001$).

† Significantly different at T0 vs T2, T0 vs T3, and T1 vs T3 ($p < 0.001$ for all comparisons).

‡ Significantly different at T0 vs T2 and T0 vs T3 ($p < 0.001$ for all comparisons).

§ Significantly different at T0 vs T2 and T0 vs T3 ($p < 0.001$ for all comparisons).

‖ Significantly different at T0 vs T2 and T0 vs T3 ($p < 0.001$ for all comparisons).

¶ Significantly different at T0 vs T2, T0 vs T3, and T1 vs T3 ($p < 0.001$ for all comparisons).

ANEXO C – Normas para publicação – periódico International Acta Odontologica Scandinavica

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Updated January 2017

ANEXO D – Questionário OHIP-14.

OHIP-14	T1	T2	T3	T4
1. Você teve algum problema para pronunciar alguma palavra por causa de problema com sua boca ou articulação?				
2.Sentiu que seu paladar mudou por causa dos problemas em sua boca ou articulação?				
3.Você sentiu dores em sua boca ou articulação?				
4.Você se sentiu desconfortável em mastigar algum alimento por causa de problemas em sua boca ou articulação?				
5.Você ficou preocupado por causa de problemas em sua boca ou articulação?				
6. Você ficou estressado por causa de problemas em sua boca ou articulação?				
7.Sua alimentação ficou prejudicada por causa de problemas em sua boca ou articulação?				
8.Você teve que parar sua refeição por causa de problemas em sua boca ou articulação?				
9.Você encontrou dificuldades em relaxar por causa de problemas em sua boca ou articulação?				
10.Você sentiu-se envergonhado por causa de problemas em sua boca ou articulação?				
11. Você ficou irritado com outras pessoas por causa de problemas em sua boca ou articulação?				
12. Você teve dificuldades e, realizar suas atividades diárias por causa de problemas em sua boca ou articulação?				
13. Você sentiu que a vida em geral ficou pior por causa de problemas em sua boca ou articulação?				
14.Você ficou totalmente incapaz de realizar suas atividades normais por causa de problemas em sua boca ou articulação?				

0=Nunca/Não sei;1=Dificilmente;2=Ás vezes; 3=Frequentemente; 4=muito frequente.

ANEXO E – Escala Visual Analógica

Escala Visual Analógica Pré Operatória (T0):

Sem Dor 0 10 Dor Intensa

Escala Visual Analógica segundo mês de Pós-Operatório (T1) :

Sem Dor 0 10 Dor Intensa

Escala Visual Analógica seis meses de Pós-Operatório: (T2)

Sem Dor 0 10 Dor Intensa

Escala Visual Analógica um ano de Pós-Operatóri: (T3)

Sem Dor 0 10 Dor Intensa

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