

Temporomandibular joint multidisciplinary team clinic

Nabeela Ahmed, Tim Poate, Cristina Nacher-Garcia, Nicola Pugh, Helen Cowgill,
Lisa Page^{*}, N. Shaun Matthews

Department of Oral and Maxillofacial Surgery, King's College Hospital, London. Denmark Hill, London SE5 9RS, UK

Accepted 28 July 2014

Available online 29 August 2014

Abstract

Patients with dysfunction of the temporomandibular joint (TMJ) commonly present to oral and maxillofacial departments and are increasingly being managed by a subspecialist group of surgeons. We review the outcomes of patients attending a specialist TMJ multidisciplinary team (MDT) clinic. All patients are simultaneously reviewed by a consultant oral and maxillofacial surgeon, consultant in oral medicine, specialist physiotherapist, and maxillofacial prosthetist, and they can also see a consultant liaison psychiatrist. They are referred from primary, secondary, and tertiary care when medical and surgical treatment in the routine TMJ clinic has failed, and are triaged by the attending maxillofacial surgeon. On discharge they are returned to the care of the referring practitioner. We review the outcomes of patients attending this clinic over a 2-year period and show improvements in pain scores and maximal incisal opening, as well as quality of life outcome measures. All units in the UK with an interest in the management of diseases of the TMJ should consider establishing this type of clinic and should use available resources and expertise to maximise outcomes.

© 2014 The British Association of Oral and Maxillofacial Surgeons. Published by Elsevier Ltd. All rights reserved.

Keywords: TMJ; MDT

Introduction

Dysfunction of the temporomandibular joint (TMJ) is common, and an increasing number of patients are being referred to secondary care for advice. Reported prevalence varies from 20% to 75%, although the incidence is increasing given the rising profile of this group of disorders,¹ and most patients are female.² Management varies between centres, but after initial conservative treatment, it can be medical, surgical, or both.³ Non-surgical treatment has been reported to have a success rate of up to 88%.⁴ There is no consensus about how to manage diseases of the TMJ, although guidelines are being prepared by a subgroup of the Clinical Effectiveness Committee of the British Association of Oral and Maxillofacial

Surgeons. Whilst the placebo effect in this group of patients is well documented, the work was undertaken over 40 years ago, and our understanding of dysfunction and pain in the TMJ has changed.⁵

Our TMJ MDT clinic was established in October 2009 and is managed by a consultant oral and maxillofacial surgeon with an interest in disorders of the joint. The value of MDT clinics is widely recognised in orthognathic surgery and medical specialties⁶ although most do not include all specialties because of constraints on time and cost. However, those that treat disorders of the TMJ are new in the UK.

Increasingly, patients with disorders of the joint are being treated by subspecialists with an interest in the area, but treatment remains controversial given the lack of evidence to support any particular method. As with other joint diseases, initial management is largely medical,⁷ and surgical treatment is used only if symptoms fail to improve. TMJ arthroscopy and arthrocentesis have revolutionised primary

E-mail address: shaun.matthews@nhs.net (N.S. Matthews).

^{*} King's College Hospital, London and Sussex Partnership NHS Foundation Trust

management of pain and restricted opening,⁸ and there has been an associated reduction in the number of open joint procedures, but these procedures are not appropriate in all cases.⁹

Background

Our TMJ MDT clinic is attended by a consultant oral and maxillofacial surgeon, a consultant in oral medicine, a consultant maxillofacial prosthetist, and a specialist physiotherapist. Patients can also see a consultant liaison psychiatrist. Each patient is assessed collectively by all the specialists and management is by a combined approach. The clinic was modelled on one in Vienna, Austria, in which clinicians discussed management as a group; however, ours differs, as the patient is examined by all members of the team and is present during their discussions.

The clinic is held monthly and 4 patients are seen at each session, each with a 45 minute appointment. When it was initially established, any patient who had failed to improve with medical or surgical management was seen, including those being reviewed and considered for unilateral or bilateral total joint replacement. This was quickly refined in the initial 6 months to maximise the number of patients seen. The lead oral and maxillofacial consultant surgeon triages all patients referred to the clinic, which expedites treatment.

Methods

We retrospectively analysed data on 53 patients reviewed at the clinic in its first 2 years between October 2009 and October 2011. Completed data were available for 50, as 3 failed to attend for review. Patients' characteristics, maximal incisal opening, and pain scores using a 10 cm visual analogue scale (VAS), were recorded.

Brief Pain Inventory (BPI) questionnaires were introduced halfway through the first year, as well as a validated assessment tool used by our physiotherapists, the Patient Specific Functional Scale (PSFS). They were given to patients to complete before they entered the clinic and again at all subsequent reviews.

Maximal incisal opening was recorded before and after attendance at the clinic. Outcomes following attendance were recorded, as were the treatments used. Data were collated using an Excel spreadsheet and analysed with the help of SPSS Statistics for Windows, Version 20.0 (IBM Corp). Student's *t*-tests were used to assess improvements in mouth opening and pain.

Results

Table 1 shows mean maximal incisal opening and pain scores (using a 10 cm VAS) before and after attendance at the clinic.

Table 1

Improvement in maximal incisal opening and pain scores after attendance at the multidisciplinary clinic. Data are mean (range).

	Before	After
Pain score (1-10 VAS)	7 (0-10)	3 (0-8)
Maximal incisal opening (mm)	29 (17-50)	35 (22-50)

Significant improvements in mouth opening and pain scores were seen at review ($p < 0.0005$).

The improvement in mouth opening ranged from 0 to 100% (Fig. 1). Some patients had pain on normal opening. Improvements in pain ranged from 33%-100%, but all patients had a minimum improvement of 33% (Fig. 2). Four patients (8%) were kept under review for consideration and subsequent total joint replacement, and 4 (8%) required referral for further medical treatment, referral to a formal pain clinic, or further support from a psychotherapist.

A total of 42 (84%) were discharged back to the care of their general dental practitioner, 36 (72%) after the first review and a further 6 (12%) after a second review (including one patient who required arthrocentesis). Actual outcomes following attendance at the clinic are shown in Table 2.

A total of 47 (94%) reported improved quality of life scores after attending the clinic (BPI and PSFS measures). Excluding patients who had TMJ replacement, 42 (91%) were successfully discharged back to the referring clinician.

Treatment

Of the 50 patients, 38 (76%) required physiotherapy and acupuncture and 30 (60%) help with a prosthetic appliance (all these patients were reviewed at the clinic). All patients' drugs were reviewed and 10 (20%) had their medical treatment modified. This largely involved the use of baclofen and nortriptyline after full discussion with the patients. Two patients (4%) required input from the consultant liaison psychiatrist. They had a formal psychological appraisal but did not need cognitive behavioural therapy.

More than one method of treatment was used in 28 patients (56%), which gives credibility to the need for a MDT approach.

Table 2

Outcomes after attendance at the multidisciplinary clinic.

Outcome	No. of patients (n=53)
Total joint replacement	4
Arthrocentesis followed by discharge	1
Referral to pain team	1
Referral to liaison psychiatry team	2
Discharged	42
Excluded from analysis because of failure to attend follow-up	3

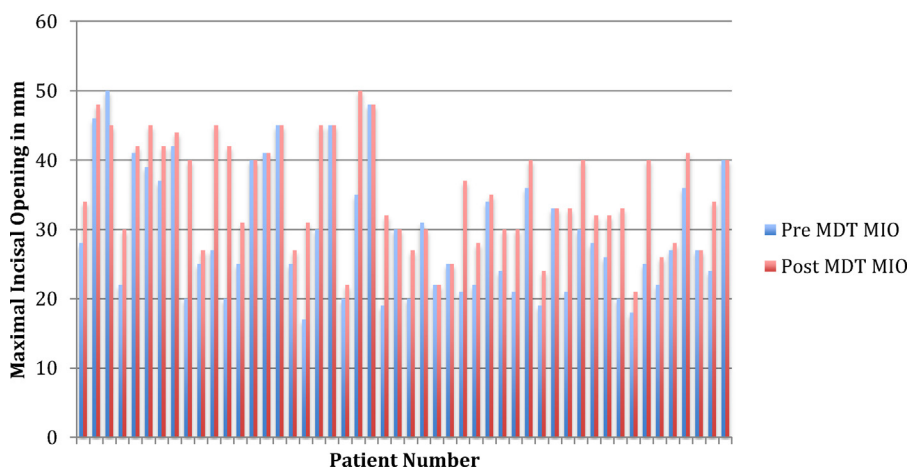


Fig. 1. Maximal incisal opening before and after attendance at the temporomandibular joint multidisciplinary clinic.

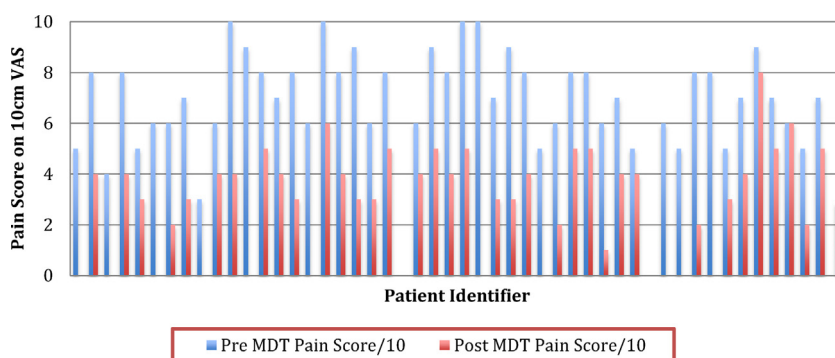


Fig. 2. Change in pain score after attendance at the temporomandibular joint multidisciplinary clinic.

Discussion

Until recently, we know of little published validated data on improvements in mouth opening and pain in disorders of the TMJ.⁹ In our group, physiotherapy (both muscle strengthening and acupuncture) was the most commonly used and effective treatment, and it is increasingly being offered to patients.^{10,11} To date, studies that support its use for TMJ dysfunction syndrome have been flawed, and a systematic review suggested cautious interpretation of the outcomes.¹² Good results are evident from arthroscopy and arthrocentesis, but they are not always necessary.¹³

All patients being considered for TMJ replacement were evaluated at the clinic when it was initially established, but this was abandoned when it became apparent that further non-surgical measures were largely ineffective and operation remained the procedure of choice.¹⁴

The clinic is funded by the Dental Institute, and the Department of Physiotherapy contributes with the provision of its staff. The tariff payable for attendance is higher than at a general clinic, which reflects the expertise available, but as 91% of patients are discharged after treatment it is considered cost-effective.

Our results show that outcomes are good. Other units with an interest in TMJ disorders should consider establishing

a similar clinic, and the corresponding author would be delighted to provide further information to interested parties.

Conflict of Interest

We have no conflicts of interest.

References

1. Von Korff M, Dworkin SF, Le Resche L, Kruger A. An epidemiologic comparison of pain complaints. *Pain* 1988;**32**:173–83.
2. Scrivani SJ, Keith DA, Kaban LB. Temporomandibular disorders. *N Engl J Med* 2008;**359**:2693–705.
3. Sidebottom AJ. Current thinking in temporomandibular joint management. *Br J Oral Maxillofac Surg* 2009;**47**:91–4.
4. Randolph CS, Greene CS, Moretti R, Forbes D, Perry HT. Conservative management of temporomandibular disorders: a posttreatment comparison between patients from a university clinic and from private practice. *Am J Orthod Dentofacial Orthop* 1990;**98**:77–82.
5. Rugh JD, Solberg WK. Psychological implications in temporomandibular pain and dysfunction. *Oral Sci Rev* 1976;**7**:3–30.
6. Monaghan J, Channell K, McDowell D, Sharma AK. Improving patient and carer communication, multidisciplinary team working and goal-setting in stroke rehabilitation. *Clin Rehabil* 2005;**19**:194–9.

7. Lin J, Zhang W, Jones A, Doherty M. Efficacy of topical non-steroidal anti-inflammatory drugs in the treatment of osteoarthritis: meta-analysis of randomised controlled trials. *BMJ* 2004;**329**:324.
8. Ohnishi M. Arthroscopy and arthroscopic surgery of the temporomandibular joint (TMJ). *Rev Stomatol Chir Maxillofac* 1990;**91**:143–50.
9. Ahmed N, Sidebottom A, O'Connor M, Kerr HL. Prospective outcome assessment of the therapeutic benefits of arthroscopy and arthrocentesis of the temporomandibular joint. *Br J Oral Maxillofac Surg* 2012;**50**:745–8.
10. Rashid A, Matthews NS, Cowgill H. Physiotherapy in the management of disorders of the temporomandibular joint-perceived effectiveness and access to services: a national United Kingdom survey. *Br J Oral Maxillofac Surg* 2013;**51**:52–7.
11. Furto ES, Cleland JA, Whitman JM, Olson KA. Manual physical therapy interventions and exercise for patients with temporomandibular disorders. *Cranio* 2006;**24**:283–91.
12. McNeely ML, Armijo Olivo S, Magee DJ. A systematic review of the effectiveness of physical therapy interventions for temporomandibular disorders. *Phys Ther* 2006;**86**:710–25.
13. Thomas SM, Matthews NS. Current status of temporomandibular joint arthroscopy in the United Kingdom. *Br J Oral Maxillofac Surg* 2012;**50**:642–5.
14. Sidebottom AJ. UK TMJ replacement surgeons; British Association of Oral and Maxillofacial Surgeons. Guidelines for the replacement of temporomandibular joints in the United Kingdom. *Br J Oral Maxillofac Surg* 2008;**46**:146–7.