



BASH NEWSLETTER

Editorial Commentary

Welcome to the autumn / winter edition of the BASH Newsletter. We hope you enjoy it and if you do pass on a copy to your colleagues.

Articles in this edition

Is the temporo-mandibular joint (TMJ) the most commonly written about joint in the human body? Well, not quite according to Google but at over 19 million hits and mostly about the joint 'TMJ' dysfunction is certainly a very popular subject. But how common are headaches due to TMJ dysfunction? How do you recognize and treat them? Read Patrick Grossmann's detailed article in this edition. A dental surgeon specializing in temporo-mandibular disorders Patrick highlights the importance of excluding problems in this area as a cause of headache.

Are you doing nerve blocks for treating headache? Should you? It seems that greater occipital nerve (GON) blocks are becoming a more fashionable and talked about line of treatment. Do you add steroid to the anaesthetic? If so are you just wasting money? An Exeter medical school student, Amy Fisher, gives an impressive overview of the evidence to support this treatment for intractable headache. Reading it might alter your practice!

Flunarizine is an effective migraine prophylactic drug unlicensed in the UK but it is obtainable. It is said to be particularly good for hemiplegic migraine. Shouldn't we try and use it more frequently? It seems availability is highly variable across the UK. Russ Lane and Paul Davies try to stir up more interest in this drug. If you don't use it can they persuade you to try and do so? Can BASH do anything to support this drug's use. Read on!

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Obituary

It is with great sadness that we inform you of the death of Dr Chris Fursdon Davis. Chris died at the end of November after a long illness.

He was particularly known for his views on the role the neck may play in headache production and promotion. Chris founded the annual Oxford Symposium on Headache which is now into its 13th year. He will be sadly missed

Editorial Commentary cont.

An Update on BASH Council

Following the annual general meeting a number of changes have taken place in BASH council. Alok Tyagi, a consultant neurologist in Glasgow takes over as chair and Callum Duncan, consultant neurologist in Edinburgh is our new secretary. We wait to see whether Scotland will declare an independent BASH! The Council is published below:

Chair	Alok Tyagi
Past Chair	Peter Goadsby
Vice Chair	Stuart Weatherby
Secretary	Callum Duncan
Treasurer	Wendy Thomas
Education Officer	Fayyaz Ahmed
Newsletter Officer	Paul Davies
	David Watson
	Peter Miller
	Brendan Davies
	Louise Rusk
	Kathryn Medcalf
	Leen Mewasingh
	Zameel Cader
	Philip Holland
Co-opted	Nick Silver
Co-opted	David Kernick

Upcoming Educational Events

- March 2016- Liverpool - Nick Silver
- April 15th and 16th 2016 –
14th Oxford Symposium on Headache -
Paul Davies and Ben Wakerley
- June 2016 Stoke - Brendan Davies
- September 2016 - Study day at EHMTIC
- January 2017 - Hull - Fayyaz Ahmed
- April 2017 - Birmingham - Alex Sinclair

Further details to follow.

The New BASH Headache Management Guidelines are coming out!

Next year also sees the publication of the long-awaited BASH headache guidelines and possibly a revision of the BASH Oxford care manual Headache, a Practical Manual.

Do send us your comments and criticisms on this newsletter. We welcome news and ideas for future editions. We want a “high impact factor”!

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Paul Davies paul.davies22@nhs.net

Our newsletter is now available to all those interested in headache and not necessarily members of BASH so if you know anyone who would be interested in receiving it please let Paul Astwood know on pastwood@migrainetrust.org

ARTICLES

TEMPOROMANDIBULAR DISORDERS (TMD) AND HEADACHES

The musculoskeletal and orthopaedic connection

By Patrick Grossmann BDS LDS RCS DOrth.RCS

TMD is defined as 'a group of musculoskeletal conditions involving the TM joints, masticatory muscles and all associated tissues'.

An area of medicine and dentistry which is all too often overlooked is the associated between TMD and head, neck and facial pain.

The reasons for this are unclear but I am of the opinion that too little attention is given to this subject at undergraduate level and moreover there is no formal postgraduate training pathway in the UK for those interested in pursuing a dedicated course in orofacial pain. The TM joint connects the mandible with the cranium and dysfunction of this articulation can result in a myriad of seemingly unrelated symptoms which straddle the disciplines of medicine, neurology, ENT medicine, physical medicine, dentistry and even psychiatry. It is therefore not surprising that TMD cannot be pigeon-holed into any category, either dental/medical or surgical.

For that reason, it is not uncommon for patients with TMD to consult numerous healthcare professionals, often ten or more, only to be told they just have to 'learn to live with it' for the rest of their life.

The major symptoms of TMD include :

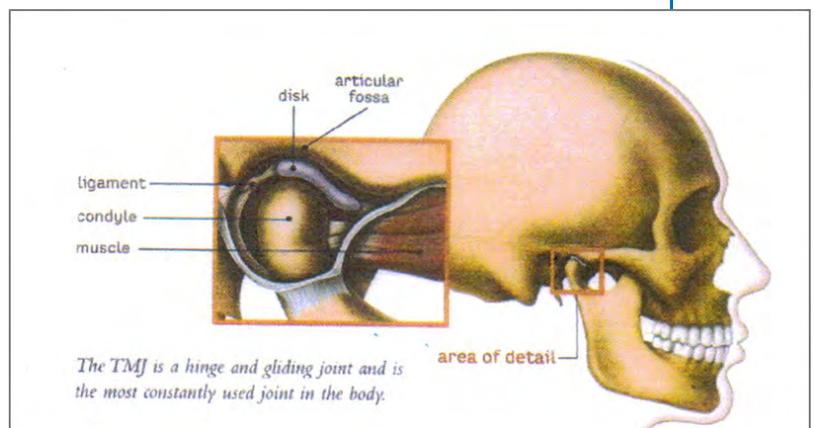
- HEAD PAIN - predominantly in the forehead, temples and occipital regions; this occurs in young children as well as adults
- RETRO-ORBITAL PAIN
- VERTIGO/DIZZINESS
- TOOTH PAIN
- NECK PAIN/STIFFNESS
- LIMITED MOUTH OPENING WITH CLICKING/ LOCKING OR CREPITUS

To appreciate the cause and effect of TMD, a brief description of functional joint anatomy and neurology is included.

The TMJ is unique in that the 2 joints have an upper and lower compartment separated by the articular disc. This allows both rotational and translational movements to occur but more importantly, they must act synchronously and in harmony with the dentition. Any disturbance within the joint(s) and/or dentition can lead to dysfunction and symptoms.

Fortunately our knowledge has increased to the point where it is clear that in many cases, a patient's symptoms are caused by dysfunction in the joint/muscle/tooth complex.

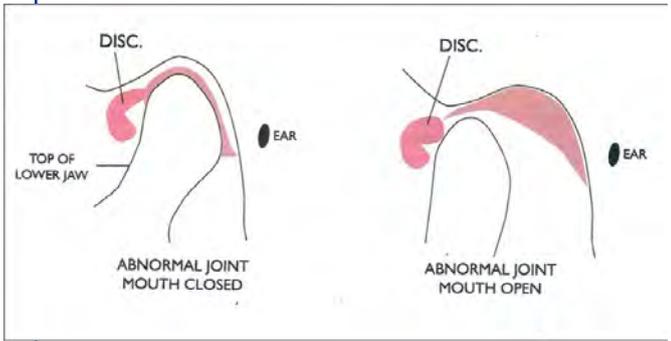
Treatment is directed at eliminating the dysfunction and associated inflammation, relieving muscle pain and restoring the components of the joint to their normal anatomical position. Such treatment has become the primary responsibility of the dental profession. The diagram below illustrates a healthy and fully functional joint. (Fig a)



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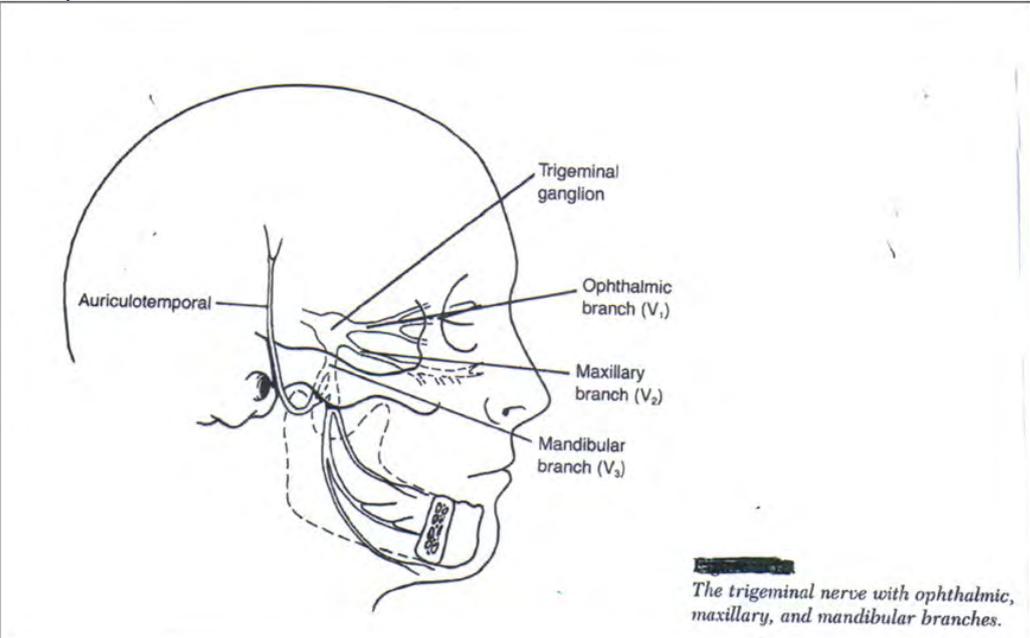
TEMPOROMANDIBULAR DISORDERS (TMD) AND HEADACHES

The musculoskeletal and orthopaedic connection (cont)



The diagram left (Fig b) shows **chronic disc displacement** referred to as an **internal derangement**. This is often the result of macrotrauma such as whiplash, sporting accidents, wisdom tooth extraction and anaesthetic intubation.

The effect of DISC DISPLACEMENT leads to neurovascular dysfunction, pain, muscle spasm and within six months many patients report feeling depressed. This sets up a cycle in which feeling tense and uptight increases muscle spasm and increases pain.



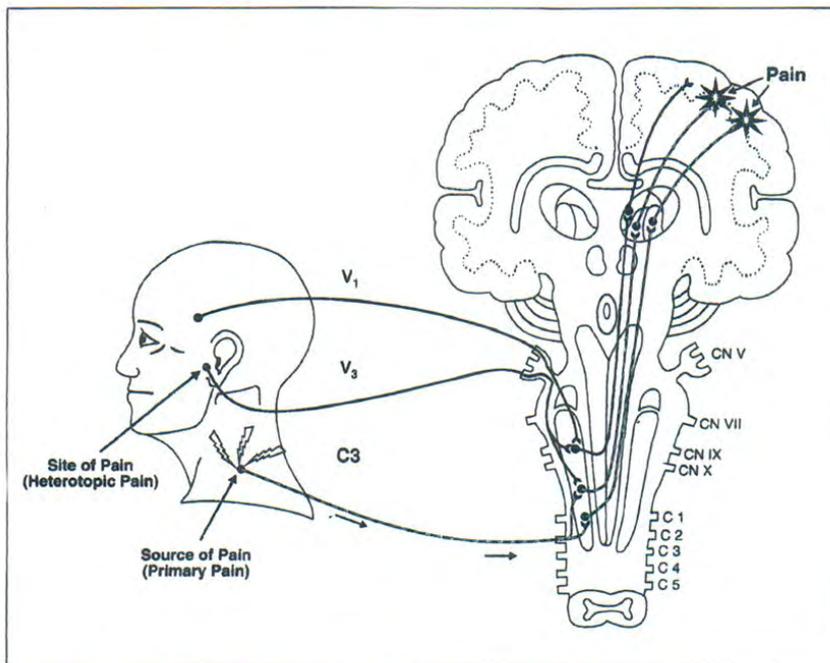
HEAD, NECK and FACIAL pain due to TMD is mediated via the trigeminal nerve which has three principal branches and the auriculo-temporal branch of the mandibular branch innervates the TMJ (Fig.c)

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The trigeminal nerve with ophthalmic, maxillary, and mandibular branches.

TEMPOROMANDIBULAR DISORDERS (TMD) AND HEADACHES

The musculoskeletal and orthopaedic connection (cont)



Graphic illustration of the convergent effect of nociceptive input on the trigeminal spinal tract nucleus. In this example C3 input converges on the trigeminal neuron, creating nociceptive input ascending onto the higher centers. This input is perceived in the cortex as pain in the cervical and TMJ regions, even though input is only originating in the cervical region. (From Okeson JP. Bell's Orofacial Pains, 5th ed. Chicago: Quintessence, 1995:66.)

The complexity of the trigeminal nerve and its numerous connections is illustrated in (Fig d) left

There are numerous connections between all three branches of the nerve in the brainstem as well as connections with C1-C3 spinal nerves, the so-called trigemino-cervical complex. GOADSBY,2003 (Current pain and headache reports).

The challenge for the clinician therefore is to differentiate between the site and the source of the pain. This can often be made easier by use of diagnostic block injections.

Treatment can only be carried out once all relevant information has been recorded and a diagnosis of internal derangement has been made.

It involves wearing an intra-oral splint (orthotic) designed to correct the condyle/disc derangement (sometimes requiring a surgical procedure as well). By repositioning the condyles, the surrounding muscles are allowed to return to their resting length thereby reducing muscle spasm and pain.

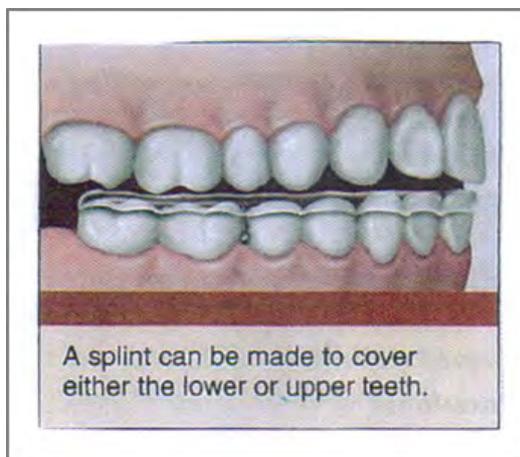
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TEMPOROMANDIBULAR DISORDERS (TMD) AND HEADACHES

The musculoskeletal and orthopaedic connection (cont)

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This treatment known as anterior repositioning appliance therapy has been well documented by SIMMONS, GIBBS. (Jour. Craniomand.Pract 2005)



The intra-oral splint is a hard acrylic mouthpiece (Fig e)

The splint is worn 24/7 except for cleaning after meals and functions by unloading the joints, creating superior joint space for the displaced disc. In a study by SIMMONS (Jour.Craniomand.Pract 2005) of 48 consecutive patients the most common symptom was occipital cephalgia – 94%. Overall, splint treatment resulted in absence or improvement of 95% of symptoms present before treatment.

Many studies have supported that headache is a common complaint of the craniofacial pain patient. In fact it appears that TMD may be responsible for up to 26% of all headache pain and headaches associated with TMD are predominantly tension-type headaches.

A study by Magnusson, Carlsson in 1978, Swedish Dent Jour and another by Andresik, Headache 1979 found recurrent headache to occur in as many as 70% of TMD patients. There is also a high prevalence in children reporting headpain by the age of 15. Jour Oral Rehab. 1975 (Hansson, Nilner)

Interestingly, migraine has also been associated with TMD (Tepper et al 2001, Neurologist) published a paper on the pathophysiology of migraine in which they attribute the 3rd division of C.N.V as a possible contributing factor. "In a large percentage of migraine sufferers, the motor rootis hyperactive". The result is excessive jaw muscle activity during sleep with noxious information going back to the sensory nucleus, sensitising it and making the patient more susceptible to migraine attacks.

In addition, when there is inflammation within the TMJ, vasoactive substances such as substance P are released into the regional blood supply; this substance is elevated in the CNS blood supply in many types of vascular headaches.

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TEMPOROMANDIBULAR DISORDERS (TMD) AND HEADACHES

The musculoskeletal and orthopaedic connection (cont)

The following case treated by the author highlights many of the points discussed in the article.

A 30-year-old female presented with the following symptoms :

- daily headaches for 14 years needing to spend three days/week in bed
- right temporomandibular joint (TMJ) crepitus
- left and right ear pain
- loss of balance
- left and right preauricular pain
- right retroorbital pain
- right lower jaw pain
- loss of weight due to difficulty in eating
- neck pain

Prior to her visit, this patient had been seen by her general medical practitioner, general practitioner, neurologist, maxillofacial surgeons, otolaryngologist (ENT) and pain management consultants. All physical/neurological and ENT findings were negative.

Their diagnosis was atypical facial pain with abnormal illness behaviour/tension headaches and she was prescribed the following :

- Amytryptiline
- Paracetamol
- Prozac
- Codeine
- Valium
- Baclofen
- Solpadol
- Tegretol
- Sanomigran
- Propranolol
- Voltarol
- Tylex

Transcutaneous electrical nerve stimulation (TENS), trigger point therapy, osteopathy, chiropractics, right TMJ arthroscopy, right TMJ steroid injection. All of the above were of little benefit.

My clinical examination revealed :

- ⇒ There were 29 head/neck/facial muscles sensitive to moderate palpation
- ⇒ Maximum opening 30mm (normal 48-52mm)
- ⇒ Lateral movements, 5mm left and right (normal value 12-15mm)

The history and clinical examination suggested a diagnosis of bilateral internal derangement of the TMJ, which was confirmed by MRI scans. The report stated laterally displaced disc on the right with possible perforation of the disc.

Treatment for all patients with internal derangement should, in my opinion, be therapeutic and directed towards establishing a functional disc/condyle assembly.

The patient was fitted with a hard, lower, flat plane splint with a vertical dimension determined by the swallow technique (Stack,2008). She was instructed to wear the splint 24/7, only to remove it for cleaning.

Within 10 weeks of splint treatment her mouth opening had increased to 52mm. Although her range of motion had improved considerably, many of her original symptoms persisted due to the underlying pathology, that is to say the right non-reducing TMJ disc.

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TEMPOROMANDIBULAR DISORDERS (TMD) AND HEADACHES

The musculoskeletal and orthopaedic connection (cont)

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She agreed to a right disc plication procedure and within 4 weeks of surgery reported a significant improvement in all her symptoms.

Full time splint wear continued for 9 months post-operatively, following which stabilisation of the corrected maxillo-mandibular relationship was achieved with orthodontic treatment using fixed appliances according to the protocol described by Stack (2008).

As part of an ongoing audit within the practice, patients are sent regular questionnaires on completion of treatment.

Six years post-operatively the patient reported :

- Intractable bilateral ear pain decreased by 100%
- Daily headaches decreased by 100%
- Neck pain decreased by 100%
- Right TMJ crepitus decreased by 100%

This spring's BASH newsletter stated that 30% of neurology referrals are for headache and it is suggested that significant savings could be made by redesign of headache pathways.

Given the amount of evidence showing the relation between TMD and headache, is it not time for the medical and dental professions to collaborate so as to improve the care and management of patients?

I believe that time has come and would welcome any opportunity of forging closer ties with our medical colleagues.