Temporalmandibular Disorder from Basic to Beyond

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The management of temporomandibular disorders (TMD) is a complex problem in dentistry. TMD is defined as not only problems related to temporomandibular joints but includes all disturbance with the function of the masticatory system.

A telephone survey by The University of Hong Kong in 2001. Jaw pain was reported by 33% of the population and one percent of the Hong Kong Chinese population had moderate or severe intensity and occurred frequently. In order to effectively manage TMD, the clinician must be able to recognize these disorders so that correct therapy can be selected. For all types of disorder there are 2 major symptoms, pain and dysfunction. It can be pain on joint and the muscles.

Masticatory muscle pain can be due to local muscle soreness, protective co-contraction (muscle splinting), myofascial (trigger point) and myospasm. Local muscle soreness is the most common type of acute muscle pain in dental office, it is a primary noninflammatory myogenous pain disorder, first response of muscle tissue to prolonged co-contraction. Pain in the joint (arthralgia) can due to elongation of the ligaments or compression of the tissues.

Dysfunction is the decrease in the range of mandibular movement and is common with functional disorders of the TMJ. Usually it presents as a disruption of the normal condyle-disc movement, with the production of joint sounds. The joint sounds may present as single click or reciprocal click. Crepitation is a multiple, rough, gravel-like sound. Dysfunction may also present as catching sensations when patient open mouth, sometimes the jaw can lock. Acute malocclusion is another type of dysfunction refers to any sudden change in occlusal condition. It may result from a sudden change in the resting length of a muscle that controls jaw position.

In normal condition when the mouth opens, the condyle moves forward, the disc rotates posteriorly on the condyle and the condyle-disc complex translate out of the fossa. However, when the morphology of the disc is altered or ligament become elongated, the disc is then permitted to slide across the articulate surface of the condyle to a more forward position on the condyle (not happen in healthy joint). This is called the functional disc displacement or internal derangement. Clicking is when the condyle translates across the disc to some degree when movement begins. Reciprocal click is the 2nd stage of derangement. The disc is positioned more forward, the 2nd click represents the condyle moving across the posterior border of the disc to its normal position. When the disc is trapped in the forward position, and the full translation of the condyle is inhibited, the patient then feels the joint being locked in a limited closed position-closed lock.

The importance of taking a thorough history cannot be overemphasized. With pain disorders, as much as 70 – 80 % of the information needed to make the diagnosis will come from the history. As pain becomes more chronic, psychological factors become more predominant and may need to be managed by a multidisciplinary approach.
Clinical examination involves the palpation of the muscles and examination of the TM joints. A widely accepted method of determining muscle tenderness and pain is by digital palpation. A routine muscle examination includes palpation of temporalis, masseter, sternocleidomastoid, posterior cervical, while medial and lateral pterygoids need to evaluate by functional manipulations.

The TM joints are examined for any pain or tenderness by digital palpation. Joint sounds can be perceived by placing fingers over the lateral surfaces of the joints. However, the absence of sounds, does not always mean normal disc position. The dynamic movement of the mandible are observed for any irregularities or restriction. Any mandibular movement that either restricted or have unusual pathway characteristics is recorded.

Various type of imaging techniques can be used to gain additional insight regarding the health and function of the TM joints. Radiographs of TM joints are complicated by several anatomic and technical circumstances that hinder clear and unobstructed visualisation of the joints. Panoramic view can provide screening of the condyles; however, the lateral pole of the condyle becomes superimposed over the condylar head. Lateral transcranial and transpharyngeal view are more sophisticated techniques that provides good visualization of both the condyle and fossa. Computed tomography can reconstruct the three-dimensional images. Magnetic resonance imaging has become the gold standard for evaluating the soft tissue of the TMJ, especially disc position. The presence of displaced disc in an MRI does not constitute a pathologic finding. It has been demonstrated that between 26% – 38% of normal, asymptomatic subjects are found to have disc position abnormality on MRI.

Treatments of TMD include a great spectrum of modalities from self-management, education, medication, physiotherapy to surgical procedure. The educational approach aims to explain the nature, aetiology, and prognosis of the condition, including the notion that parafunctional activity and psychosocial factors play a role in the pathogenesis of musculoskeletal pain. Clicking and disc derangement may persist for several years up to decades without progression or complication. Because the signs and symptoms of TMDs can be transient and self-limiting, initial treatments should be limited to simple and reversible and nonaggressive measures. Surgical treatments, such as arthroscopy and open joint surgeries, may be considered, but only after reasonable nonsurgical efforts have failed and the patient’s quality of life is affected significantly.

Reduction of pain and dysfunction is the aim of treatment. The most commonly used are pharmacologic therapy and physical therapy. Medication in conjunction with appropriate therapy and definitive treatments can offer the more complete approach to many problems. The most common classes of pharmacologic agents used are analgesics, anti-inflammatory, muscle relaxant, anxiolytics, antidepressants and anticonvulsives. They should be prescribed at regular intervals for a specific period.

The reasonable goal of definitive therapy for disc displacements and disc dislocations with reduction is to reduce pain, not to recapture the disc. The patient should be informed and educated the mechanics of the disorder and the adaptive process that is essential for successful treatment. Patient must be encouraged to decrease loading of the joint whenever possible. Occlusal appliance is directed toward altering the mandibular position. The exact mandibular position and occlusion will depend on the aetiology of the disorder. When parafunctional activity is to be treated, an occlusal contact pattern has to be established in harmony with the optimal condyle-disc -fossa relationship, a musculoskeletally stable position. At the same time the teeth are contacting evenly and simultaneously with canine disocclusion of the posterior teeth during eccentric movement. This is to eliminate any orthopaedic instability between the occlusal position and the joint position and thus help to minimize forces to damaged tissue and permit more efficient healing.

Referred pain is a type of orofacial pain that the sensations are felt not in the involved nerve, but in other branches of that nerve or even in an entirely different nerve, classic example...
is cardiac pain refer to jaw. Nonodontogenic toothache is toothache of non-dental origin, it can come from muscular, vascular, neural, sinus and even cardiac. The most common of these is muscular. Temporalis, masseter and digastric muscle can refer pain to teeth, and all have specific referral pattern. Temporalis usually refers pain to maxillary teeth. Masseter to posterior teeth, while anterior belly of digastric refers pain to mandibular anterior teeth only.

Temporomandibular joint and masticatory system is extremely complex, and breakdown may occur. An appreciation of the various type of treatment is essential for effective management of the symptoms. Treatment selection must be based on an accurate diagnosis and thorough understanding of the disorder.

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Clear Aligner Treatment - Problems and Pitfalls

Ms Oonagh Toner, Partner Dentolegal Team, Howse Williams

Clear aligner orthodontic treatment is growing rapidly in popularity in Hong Kong, due to a patient perception that it offers similar efficacy to traditional fixed appliances at a far lower cost, and dentists’ adoption of the treatment as a means of expanding their practices.

Unfortunately, patients and dentists may be unaware of the inherent risks and limitations of this treatment, and of the potential for adverse outcomes. We have dealt with multiple claims involving relatively significant complications, with multiple teeth being compromised and even becoming non-vital. We have also experienced cases involving extremely lengthy treatment times, with patients ultimately having to convert to a fixed appliance to achieve the desired result after several years of failed treatment.

This article focuses upon dentist-led clear aligner treatment, rather than the companies offering patient-led treatment, in which patients essentially treat themselves with little or no significant input from a dentist.

In dentist-led aligner treatment, either dental impressions or 3-D scans are taken by the dentist, from which a series of clear aligners are manufactured to produce the desired outcome.

“Elective Treatment”

In our experience of medical and dental complaints and legal claims there are higher levels of dissatisfaction, and therefore more complaints and claims, in regard to elective, cosmetic treatment. The analogy in medicine is the administration of Botox and fillers, and other more invasive plastic surgical treatments.

Patients undergoing elective cosmetic procedures such as clear aligner orthodontic treatment often have unrealistic expectations as to the expected outcome. We have also encountered cases where there was a lack of clarity over what was covered in the treatment, e.g. how many adjustments would be included in the original fee. Managing patient expectations regarding the possible outcome and the scope of the treatment provided is, therefore, critical.

“Patient Compliance”

Patient compliance is essential to successful outcome - at least 22 hours daily wear of the clear aligners is required, and good oral hygiene is very important. Often, patients either do not comply with the required hours of daily wear, thus compromising their outcome, for which they blame the treating dentist; or they do not ensure that their oral hygiene is good enough to compensate for the fact that while the aligners are worn there is no saliva washing the teeth, thus compromising their oral health.

Unfortunately, there is no way for a dentist defending a claim to ascertain or prove the number of hours for which the patient actually wore the aligners.

Emphasising the importance of compliance in daily wear and maintaining good oral hygiene to patients is, therefore, extremely important.
**“Expertise”**

It unfortunately appears that sometimes there is an abrogation of clinical responsibility by the treating dentist to the clear aligner manufacturer, rather than the dentist exercising his or her own clinical judgment in evaluating and advising the patient. A sufficient level of knowledge and understanding of orthodontic treatment is required for proper assessment and treatment planning. Relying solely upon a clear aligner manufacturer’s treatment plan is not acceptable.

Dentists often play a passive role during treatment, relying on the clear aligner manufacturer’s treatment plan. As a consequence, in the event of an unsatisfactory result or complications arising, dentists can only try to formulate a rescue plan with the use of auxiliary devices such as fixed appliances, or referral to a specialist, requiring significant additional treatment time.

In some cases, the patient’s desired outcome may not be possible to achieve using clear aligners. One example which has resulted in several claims is patients attending with bimaxillary protrusion and requesting clear aligners. These patients should be referred to a specialist orthodontist.

A further feature which frequently arises in problem cases and which shows a lack of the required expertise is excessive interproximal reduction, and/or failure to smooth the interproximal surface after reduction, giving rise to compromised oral health. Another is failure to monitor and/or assess treatment progress - in one case, there was no monitoring of the patient at all over a period of eighteen months; and in other cases, when complications have arisen which the dentist either did not recognise or could not resolve, there has been a failure to refer.

**“Consent”**

Of course consent, as with any treatment, is important, and it must be remembered that a specific request for clear aligners does not protect the dentist. The recent *Montgomery* judgment in the UK says that risks and possible adverse outcomes must be explained and clearly understood by the patient, with specific reference to his or her own dentition.

As in every case, it is very important to document the treatment and advice provided in the patient records, including a detailed note of the consent process. Consent should address alternative treatments, including the option of no treatment at all, as well as the possibility of a referral if appropriate, and/or the use of a fixed appliance.

**“Covering”**

In some claims that we have encountered it appears that a dental nurse, rather than the dentist, conducted all the preliminary investigations for the clinical assessment of the patient and for the manufacture of the clear aligners. The Hong Kong Dental Association does not consider this acceptable, and the Dental Council may consider it covering, i.e. the improper delegation of duties or functions in connection with dental treatment to a person who is not a dental practitioner. In addition to the possibility of disciplinary action by the Dental Council, this may also give rise to a finding of negligence by the Courts.

We also understand that it is common practice for dental nurses or DSAs to deliver aligners to patients, without the patient being seen by the treating dentist for monitoring of treatment progress and ongoing assessment. In some cases that we have encountered, the patients have been given all of their aligners at one time by a dental nurse or DSA, because the practice did not want to store them. These practices are indefensible.
The key Dental Council judgment on this area of practice was handed down on 26 October 2018, and is available on the Dental Council website. The crucial paragraphs are 40 and 41, which make the Dental Council’s position clear, as follows:

"Orthodontics, like other dental treatment modalities, requires clear understanding of the science and the possession of the necessary skills involved in delivering safe and useful treatment outcomes.

In Hong Kong, agreeing to be listed as a preferred provider by a clear aligner manufacturer may be considered by the Dental Council to constitute advertising or canvassing for patients. Similarly, for patient-led products, the manufacturer may provide a list of "partners", some of whom may be dentists, who will perform initial scanning and/ or take dental casts. Once again, this may well be considered to constitute advertising or canvassing. It should also be remembered that, if a patient has a problem with his or her self-administered treatment, a dentist who had taken initial scans may be considered to owe a duty of care to that patient, and may be vulnerable to a finding of negligence. Agreeing to this sort of partnership, therefore, is high risk.

Advances in technology and development in concepts in biomechanics cannot free the practitioner from the responsibility in accurate diagnosis, treatment plan prescriptions and the subsequent treatment delivery, continuous assessment, monitoring and maintenance care. Clear plastic sequential orthodontic aligner could be an effective treatment tool only if used by trained, competent and responsible dentists. The Council takes strong position against any form of neglect of duties to patients."

This article contains general observations, based upon our experience of complaints and claims relating to clear aligner treatment in the dento-legal team at Howse Williams. For advice and assistance with specific cases, please consult a lawyer.

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Gazette of the Code of Practice for Day Procedure Centres

Dear Doctor / Dentist,

The Private Healthcare Facilities Ordinance (the Ordinance) was gazetted on 30 November 2018 introducing a new regulatory regime for hospitals, day procedure centres, clinics and health services establishments. Under the Ordinance, day procedure centres (DPCs) refer to premises that are used, or intended to be used, for carrying out scheduled medical procedures on patients without lodging.

Pursuant to section 102 of the Ordinance, the Code of Practice for Day Procedure Centres (CoP) is issued by the Director of Health to provide standards for all DPCs licensed under the Ordinance. The CoP sets out the licensing standards in respect of the governance, staffing, facilities and equipment, service delivery, quality and safety of care, infection control, and other matters related to the operation of a DPC.

The CoP is drawn up with reference to the sets of core and procedure-specific standards developed by the Project Steering Committee on Standards for Ambulatory Facilities (PSC) formed by the Department of Health and the Hong Kong Academy of Medicine, taken into account the legislation and regulatory standards of overseas jurisdictions with adaptation to local practice environment.

The CoP can be accessed on the Department of Health website at www.orphf.gov.hk.

For enquiries, please contact the Office for Regulation of Private Healthcare Facilities, Department of Health at 3107 8451. Thank you very much.

Hormone Replacement Therapy (HRT): Further Information on the Known Increased Risk of Breast Cancer with HRT and Its Persistence after Stopping

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Briefings on the Private Healthcare Facilities Ordinance (Cap 633)

The Private Healthcare Facilities Ordinance ("the Ordinance"), passed in November 2018, provides for a new regulatory regime for private healthcare facilities.

Under the Ordinance, all premises where registered medical practitioners and/or dentists practise are required to have either a licence or a letter of exemption from the Department of Health (DH).

DH is organising a series of briefing sessions on the Ordinance with interactive discussions in various venues on the Hong Kong Island, Kowloon, and the New Territories, starting August 2019.

Sents are limited. Please register early.

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<tr>
<th>Date</th>
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<tr>
<td>12 Nov (Tue)</td>
<td>2:30pm Registration 3:00-5:00pm Briefing &amp; QA</td>
<td>Leighton Hill Community Hall 133 Wong Nai Chung Road, Happy Valley</td>
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<tr>
<td>21 Nov (Thu)</td>
<td>1:30pm Registration 2:00-4:00pm Briefing &amp; QA</td>
<td>Yau Tong Community Hall 38 Ko Chiu Road, Yau Tong</td>
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All briefing sessions will be conducted in Cantonese. No food or drinks will be served at the briefing sessions. CME and CPD applications are in progress. For enquiry and registration, please contact us at (+852) 3107 2939

Organised by Department of Health

For details on the briefings and on the new regulatory regime, please visit us at: www.orphf.gov.hk