CASE REPORT

Myofascial pain syndrome: A diagnostic challenge for dental practitioners

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Abstract

This case report describes the unusual presentation of chronic temporomandibular joint (TMJ) dysfunction in a young girl and highlights the effectiveness of a multidisciplinary approach in managing her condition. A 15-year-old female presented to the dental clinics at the Aga Khan University Hospital with a one-year history of restricted mouth opening, severe bilateral preauricular pain, and audible TMJ clicking. The pain, initially dull had progressed to spontaneous, sharp, and radiating discomfort unresponsive to conventional analgesics. A significant psychosocial stressor was identified as the precipitating factor. Clinical examination revealed marked tenderness across multiple craniofacial and cervical muscles, with features consistent of myofascial pain syndrome. A comprehensive management plan was implemented, involving pharmacologic therapy (anti-inflammatories and muscle relaxants), non-pharmacologic strategies (TENS, moist heat, cervical manipulation), and psychological support. A bilaminar occlusal splint was fabricated and adjusted periodically. Over 15 sessions, her VAS pain score improved from 8/10 to 5/10, followed by complete resolution of symptoms and improved mouth opening to 45 mm within six weeks.

Keywords: Myofascial pain syndrome, Trigger points, Referred pain, Temporomandibular disorders.

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Introduction

Myofascial pain syndrome (MPS) presents as a diagnostic challenge because there is a gap in understanding among dental practitioners about this chronic condition. The diagnosis, however, is very straightforward as the classic presentation is the presence of trigger points within stretched muscles that are painful on palpation, causing referred pain.[1] This contrasts with localised myalgia and muscle spasm, which present as pain only on the site of palpation and generalised stiffness of the involved muscle, respectively.[2] Diagnosis may sometimes become difficult because of the complex presentation, as most cases are in conjunction with fibromyalgia and temporomandibular joint disorders (TMJD).[3] Likewise, it may present as a positive test on biting or sensitivity to percussion mimicking odontogenic origin, thus leading to misdiagnosis.[1]

Presented below is the case of a young girl with an unusual presentation of myofascial pain syndrome.

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Case Report

A 15-year-old girl, with no known co-morbidity presented to the dental clinics of Aga Khan University Hospital (AKUH), in December 2021, with the complaint of restricted mouth opening and severe pain in the right and left preauricular regions associated with bilateral audible clicks for the past year.

Initially dull, the pain aggravated on chewing and was relieved after hours of activity. Over a few days, it became spontaneous with occasional episodes of sharp pain radiating to the temple and entire orofacial region. She was regularly taking painkillers for relief, but the pain was non-responsive.

The patient's history revealed that she was doing well until January 2021, when one morning immediately after waking she noticed that her mouth opening was restricted along with severe pain in the orofacial region. Upon further inquiry, she was able to recall that she had been under stress for the past few days because of the death of a close family member as well as some conflicts running in the family.

She consulted an oral and maxillofacial surgeon back then, and arthrocentesis was done on the right TMJ after which mouth opening was slightly improved, but the pain was never relieved. She experienced a similar episode of limited mouth opening in October 2021, consulted the same surgeon, and again, arthrocentesis was recommended. She was in so much pain and distress that she did not return to the primary surgeon and thus, no intervention was done.

After a few months, she presented to AKUH for a second opinion. At the time of presentation, she showed an aggressive and impatient behaviour characteristic of type-A personality. Moreover, she was on a semi-solid to liquid diet for the past year due to restricted mouth opening.

Extraoral examination revealed bilateral facial symmetry,

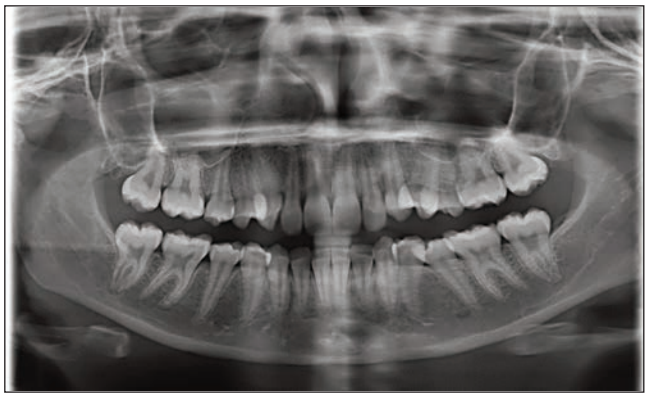

Figure: Dental Orthopantomograph (OPG) of the patient showing no significant dental pathology.

limited mouth opening (25mm) with no deviation, normal mandibular movements (protrusion and lateral excursion), and reciprocal click along with tenderness at the right and left temporomandibular region. On inspection, she had a squarish facial appearance with extensively hypertrophic bilateral masseter muscles. On palpation, severe pain on trigger points of the anterior, middle, and posterior temporalis, superficial masseter, lateral pterygoid, the upper belly of sternocleidomastoid, and trapezius, as well as posterior cervical muscles, was noted. Likewise, the patient's symptoms of severe pain radiating to the head and cervical muscles including the occipitofrontalis and splenius capitis muscles, could be replicated on palpation.

Intraoral clinical examination revealed satisfactory oral hygiene and class I malocclusion with an overjet of 3mm. A full mouth radiograph (Orthopantomograph) was done to rule out any dental pathology that could be ascribed to the patient's existing signs and symptoms (Figure). The patient was also screened for fibromyalgia but the findings were non-significant. Cervical screening of the patient revealed normal overall body posture with moderate forward head postural disharmony. She was also screened for Active Range Of Motion (AROM) of the head musculature which revealed non-restricted hypermobility during flexion, extension, right and left rotation, and bends. The patient was also evaluated for headache, and she reported a dull constant pain extending to the right and left temporal regions.

Thus, based on a thorough history and examination, a provisional diagnosis of disc displacement with reduction and tender musculature secondary to chronic myofascial pain was made. A multi-professional approach involving an endodontist, physiotherapist, and psychologist was adopted to manage this patient.

As a first step towards pain management, an anti-inflammatory drug and a muscle relaxant (Tizanidine) were prescribed. Alongside, she was sent to a physiotherapist for the management of taut bands, where a combination of moist heat, dry needling, and transcutaneous electrical nerve stimulation (TENS) was provided to relieve the symptoms.

On each visit, the taut bands were stretched, and the cervical muscular trigger points were released with gentle manipulation. Dry needling was performed on the cervical muscles just once during the entire course of treatment; however, it did not prove to be effective and resulted in increased muscle spasms. Nevertheless, TENS was quite effective in this case. She was given TENS at three consecutive visits with increasing frequencies for 15 minutes per session. Alongside, she was encouraged to continue doing gentle stretching exercises at home. She underwent a total of 15 physiotherapy sessions and, over a few days, her Visual Analog Scale (VAS) pain score 4 drastically improved from 8/10 on the initial visit to 5/10 on subsequent visits.

Considering her extremely anxious personality, she was referred to a psychologist for character modification. Meanwhile, a bilaminar splint was fabricated and the patient was advised to use it continuously throughout day and night. At subsequent dental visits, necessary occlusal adjustments were made until the patient was fully comfortable. She was also counselled to curb screen time and posture correction was advised.

Over six weeks, her pain symptoms completely resolved along with a significant improvement in mouth opening (45mm). This had a considerable impact on her sleep pattern as well as the overall quality of life.

Discussion

Masticatory myofascial pain syndrome defined as pain of musculoligamentous origin comes under the umbrella term of temporomandibular disorders (TMDs).[5] It often presents as a diagnostic dilemma for dental practitioners as they are most frequently approached in cases of painful orofacial conditions. The general prevalence of the condition ranges from 25-85% with a gender predilection for women in the age range of 30 to 50 years.[1] Having said that, we were quite skeptical as the patient was just in her early teens.

The patient's condition was initially somewhat misjudged by the primary surgeon as restricted mouth opening was attributed to some intra-articular cause and arthrocentesis was done to relieve her symptoms, but there was no improvement. When she presented to this hospital, she had combined symptoms involving clicking sound from TMJ as well as extremely tender craniofacial musculature;

however, the mandibular movements (protrusion and lateral excursions) were non-restricted and there was no deviation on mouth opening. Had there been an intra-articular cause of the patient's condition, the mandibular movements must have been restricted in all directions. Perhaps, she had extremely tender craniofacial musculature with pain radiating from trigger points to involve the entire head and neck region, reflecting the classic presentation of myofascial pain syndrome. So, to manage her symptoms, a conservative multidisciplinary approach including pharmacologic, non-pharmacologic, and behaviour management therapies was employed.[6] This had a significant impact as the patient herself was able to feel the change after six weeks.

The case highlights the importance of comprehensive history taking and examination to reach a clear-cut diagnosis. With the increasing prevalence of temporomandibular disorders in children and adolescents, it is prudent that dental care professionals be cognizant of the classic presentation and accompanying signs and symptoms.[7] For the diagnosis of MMPS, different aids are available like algometry, magnetic resonance elastography, and ultrasonography; however, palpation remains the mainstay of diagnosis as it enables the physician to identify trigger points and to accurately track referred pain to its target.[1]

Stress factors, either social or external, are considered to be the primary aetiological factors in the development of TMDs in this age group, thus a complete psychological assessment, as well as counselling, is of paramount importance when dealing with such patients.[7] Likewise, the increased prevalence can also be attributed to the craniofacial development during the growth phase which may affect the temporomandibular joints as well as musculature leading to signs and symptoms of TMDs.[8] Thus, an early diagnosis of the condition is important for effective management as it reduces the patient's misery, thereby improving the quality of life.

Furthermore, the role of physiotherapy in such cases should not be underestimated. Manual therapy to inactivate the muscular trigger points has a long history of use and is a non-invasive approach. It implies the use of different modalities either alone or in combination, like deep pressure massage, stretch therapies, and heat application. A systematic review by Lew et al. on the effectiveness of dry needling and trigger point manual therapy in myofascial pain syndrome concluded that manual therapy was as effective as dry needling in improving pain in the short and medium term.[9]

Likewise, transcutaneous electrical nerve stimulation (TENS) is used as an adjunct to manual therapy to relieve myofascial pain. Various studies have investigated the effectiveness of TENS in reducing pain in the short term, however, to date, there is no conclusive evidence for using it as monotherapy.[10]

There is strong evidence regarding the association of parafunctional habits with chronic myofascial pain. Likewise, literature advocates the use of occlusal splint therapy to reduce pain in TMDs; however, there is moderate-quality evidence supporting the idea.[1] Moreover, postural disharmony, especially the forward head inclination, as well as several personality traits may also predispose the individual to MPS.[11] Thus, it is prudent that all etiological factors must be kept into consideration and a holistic management strategy should be adopted in such cases.

Furthermore, since the structures in this region tend to adapt and the rate of progression of the condition is benign, invasive procedures should be considered only when attempts at conservative management have failed. Similarly, considering the complications of surgical procedures, like haematoma formation or perforation, these procedures should be recommended with caution as the first line of treatment.[8]

Conclusion

Myofascial pain may occur alone or in combination with other temporomandibular disorders. Thus, a detailed history and comprehensive examination are pivotal in reaching an appropriate diagnosis, as misdiagnosis leads to patient agony and compromised quality of life.

Consent: Consent to publish the case report was obtained in writing from the parents of the patient.

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RG & NN: Concept, design, data acquisition, analysis, interpretation, drafting, revision, final approval and agreement to be accountable for all aspects of the work.