

ASSOCIATED FEATURES OF TEMPOROMANDIBULAR PAIN DYSFUNCTION SYNDROME

Mohammad Ishfaq* Tanweer Hussain Bangash, Abdul Munim

Department of Oral and Maxillofacial Surgery and Department of Prosthodontics

* Sardar Begum Dental College and Hospital Peshawar, and
Khyber College of Dentistry Peshawar, Pakistan

ABSTRACT

Objective: To know the associated features of temporomandibular pain dysfunction syndrome (TMPD) in order to prepare a preliminary report about patterns of TMPDS in our population.

Material and Methods: In this prospective observational study, fifty patients of TMPDS were interviewed and examined in Sardar Begum Dental College Peshawar and authors' private clinic from Jul 2005 to Dec 2006. Diagnosis of TMPD was established by history and clinical examination as the presence of pain, tenderness in muscle of mastications, limitation of jaw movements and by exclusion of other dental or TMJ pathological conditions

Results: Most of the patients were in their third decade of life and mostly they were students (34%). Female gender was more common (74%) and most of the female patients were unmarried. Parafunctional habits like bruxism, daytime clenching of the teeth, nail biting were noted in 22 (44%) patients, difficult extractions in 3(6%) patients and orthodontic treatment in 3(6%) patients while in 17 (34%) cases associated features were unknown. Pain was the presenting complaint of all the patients (100%) followed by clicking sounds in 56% and trismus in 44% of the cases.

Conclusion: Parafunctional habits, difficult extractions and orthodontic treatment were related with TMPD in this study and nearly all of these factors reflect the stress affecting the TMJ.

Key Words: Temporomandibular joint, Temporomandibular Pain Dysfunction Syndrome, Stress.

INTRODUCTION

Temporomandibular joint pain is one of the most common problems affecting a large proportion of population. Growing awareness in oral health has also increased the demand for the proper management of this problem. A large number of studies have been carried out for the proportion and distribution of these problems in different communities.¹⁻³ The results of these studies vary considerably among different populations. Epidemiological studies suggest that between 5 to 75 % of the population have signs and symptoms of the TMPDS in their lives.⁴ Unfortunately no local data is available in Pakistan on this subject. The symptoms and signs, which are characteristic of TMJ pain dysfunction syndrome, are clicking of the joint, periodic inability to open the jaw (locking), and pain and tenderness over the joint and its associated musculature. Myofascial pain and dysfunction

generally present with diffuse pain that is cyclic and found in several sites in the head and neck, particularly the muscles of mastication. Pain is frequently worse in the morning, and the patient often reports sore teeth from clenching. There is often a history of stress and difficulty in sleeping.⁵ Females are said to be affected three times as frequently as males and, although patients as young as 11 and as old as 70 have been reported, the majority are between 15 and 40 years of age.^{6,7} The etiology and pathogenesis of TMPDS is controversial although it is considered to be multifactorial. One of the widely believed factors is parafunctional habits that are secondary to stress and anxiety.^{8,9} TMPDS may also arise secondary to internal joint problems. There are reports linking these symptoms to adverse life events, stress or lack of emotional support.¹⁰ Many recent studies demonstrated the presence of biological active substance such as tissue necrosis factor (TNF),

AGE AND SEX DISTRIBUTION OF THE PATIENTS

Sex of the patients	Age (years)					Total
	10-19	20-29	30-39	40-49	50 and above	
Males	2	5	4	2	0	13 (26%)
Females	2	15	12	5	3	37 (74%)
Total	4	20	16	7	3	50 (100%)

Table 1

DISTRIBUTION OF THE COMMON PRESENTING COMPLAINTS

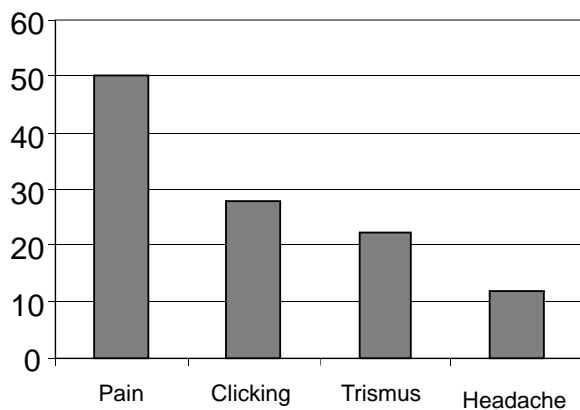


Fig. 1

substance P and other inflammatory and pain mediators such as cytokines and interleukins in the synovial fluid of the joint compartments. ¹¹

The aim of this work is to appreciate the associated features of temporomandibular pain dysfunction syndrome in order to prepare a preliminary report about patterns of TMPDS in our setup.

MATERIAL AND METHODS

Data was collected from fifty patients who were interviewed and examined by the authors in the department of oral and maxillofacial surgery Sardar Begum Dental College Peshawar and authors' private clinic from Jul 2005 to Dec 2006. A comprehensive history of the presenting complaints, duration of symptoms and history of trauma, past medical and surgical history was recorded. Social and family history including the marital status and history of various parafunctional habits was explored during the visits. All patients were subjected to direct manual palpation of TMJs and muscle of mastication. Further more masticatory system was functionally evaluated by measuring mouth opening, deviation of the jaw on opening and closing of mouth, range of mandibular movements and presence of joint sounds. A thorough clinical oral examination and orthopantomogram (OPG) were utilized to exclude dental and other pathological conditions. Diagnosis

of TMJ pain dysfunction syndrome was established by history and clinical examination as the presence of pain, tenderness in muscle of mastications, limitation of jaw movements and by exclusion of the other dental or TMJ pathological conditions.

RESULTS

Females constituted more than two third of the studied subjects (37/50 patients). The age of the patients ranged from 14 to 55 years. The maximum patients were in between 20 to 29 years of age (Table-1). The most common (100%) presenting complaint was pain which was the main reason for seeking medical advice in all patients (100%). Other more common associated features were clicking sounds in 56% and trismus (difficulty of mouth opening) in 44% of the cases (Graph-1). Regarding marital status of the patients the disease was more obviously noted among female patients. Being single was the most common reported status among female patients (Table-2). Students were the most affected population in this study (38%), followed by housewives (22%). Teachers and nurses (6% each) were more vulnerable professionals where as unemployed (12%) was another major category (Graph-2).

Different parafunctional habits like bruxism, daytime clenching of the teeth, nail biting were reported in 44% of the cases while in 17 patients (34%) no causative factor was

PROFESSIONAL DISTRIBUTION OF THE PATIENTS

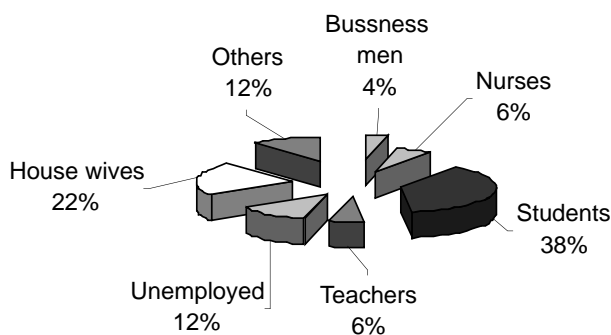


Fig. 2

MARITAL CHARACTERISTICS

Marital status	Gender		Total
	Males	Females	
Single	8	18	26 (52%)
Married	5	9	16 (32%)
Separated	0	5	5 (10%)
Widow/Widower	0	3	3 (6%)
Total	13	37	50

Table 2

attributed (Table-3).

DISCUSSION

Etiology of Temporomandibular pain dysfunction syndrome has been remained a commonly debated subject in the literature. Psychological and behavioral processes have been related to TMJ pain in number of studies.^{5,9,10,12-17}

Role of Parafunctional habits, secondary to psychological stress, like night time bruxism, day time clenching, nail biting or pencil chewing etc can produce micro trauma to TMJ, leading to pain in the joint. In our study, 44% of the patients having the history of these habits clearly show the psychological stress. Patients suffering from TMPDS tend to have more life changes than those with other illnesses. Examples of these life events include marriage, divorce, death of close family member and change in residence. Moody et al¹² gave a number of explanations for this phenomenon. One explanation was that if the numbers of life changes, being experienced by a patient are increased, the psychological stress also increases. This stress may be considered as an etiological factor for TMPDS. Another explanation was that as the life changes increases, the patient's ability to cope with the existing symptoms decreases. In either case the symptoms are accentuated and the patient seeks professional help. These facts are clearly obvious in our patients as the students, house wives and unemployed individuals consisted of more than two thirds of the patients. Some studies support our results¹²⁻¹⁴ but some studies show a weak link between stress and TMPD.¹⁵⁻¹⁷ It was possible for the author to observe the correlation of the pain and other social and psychological complaints. Moreover, the failed treatment and the recurrent pain episodes contributed to life stress with pattern of frustration, hopelessness and even depression.

Another important point that was noted in this study was the female predominance. Number of other studies also shows that female has larger proportion in this disorder. This can be explained by the fact that females confront much more social problems in our society and are much vulnerable to stress than males. However, in the western

HISTORY OF PREDISPOSING FACTORS

Predisposing Factors	Gender		Total
	Males	Females	
Parafunctional Habits	5	17	22 (44%)
Difficult extractions	1	2	3 (6%)
Orthodontic treatment	0	3	3 (6%)
Hits and Blows	1	1	2 (4%)
RTA	2	0	2 (4%)
Fall	0	1	1 (2%)
Unknown	4	13	17 (34%)
Total	13	37	50

Table 3

countries, where females have equal opportunities, the results do not differ from our study. Females' susceptibility for TMPDS may be sex linked molecular biological nature of TMPDS.¹⁷ Pain is known as an important feature of TMPDS because it is the most important reason for seeking treatment, the results of this investigation revealed that nearly all of the subjects showed clinically detectable pain from the Temporomandibular joint. Most of the studies in the developed world show that pain is not the only symptom for the patients to seek treatment.^{18,19} The reason for this is poor socioeconomic conditions and lack of public health awareness in our country. Joint click and limited mandibular movement were other important features of this disorder. Many other studies also show that clicking sounds in the effected TMJ and limited function of the joint are the main clinically diagnostic features of this disorder.^{19,20} Because the etiology and pathogenesis of TMPDS are not fully understood, casual therapy is not feasible. Further more no sufficient data is available to warrant prophylactic intervention for the management of TMPDS, nor is there data providing clear evidence that orthodontic treatment prevents, predispose to or causes TMPDS. As in other TMJ disorders we used wide range of reversible therapeutic interventions that include; assurance and education of the nature, pathogenesis, elimination of certain behaviors perceived to be harmful such as clenching and grinding of the teeth and providing rest to the masticatory apparatus and dietary modifications in additions to the pharmacological pain control through non steroidal anti-inflammatory drugs and low dose anti depressants drug. Surgical therapy was considered only after reasonable non-surgical efforts have failed and when patient's quality is being significantly affected. It is therefore suggested that each patient of this disorder should be evaluated thoroughly to rule out any stress related psychological problems. These patients should be managed professionally and always considered for referral to psychologist.

CONCLUSION

It is concluded from this study that females of the ages 21 to 40 years are most commonly affected with this disorder. Parafunctional habits, difficult extractions and orthodontic treatment were related with TMPD. Stress factors like unmarried, separated or engaged, divorced, other social problems usually effect females and are related with Parafunctional habits leading to TMPDS.

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Address for Correspondence:

Dr. Mohammad Ishfaq
Sardar Begum Dental College & Hospital,
Jamal-u-din afghani road,
University Town,
Peshawar – Pakistan.
Email: mrjatta@hotmail.com.