THE INCIDENCE OF TEMPOROMANDIBULAR JOINT DISORDERS AMONG DENTAL STUDENTS IN AIN SHAMS UNIVERSITY

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CONTENTS

LIST OF FIGURES

LIST OF TABLES

INTRODUCTION

The temporomandibular joint disorders (TMD) and other orofacial pain conditions represent significant important health problems. They include a number of clinical conditions that involve the temporomandibular joint, the masticatory musculature and associated structures or both. Internal derangement, osteoarthritis, chronic recurrent dislocation, ankylosis, neoplasia, and infection represent the causes of the temporomandibular joint pain or dysfunction [37].

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The study of epidemiology of TMJ disorders is an important issue to evaluate the prevalence and incidence of TMJ disorders by the use of clinical evaluation and radiographic examination and correlation between them. It is done in regard of sex, age, social level, behavior of the individual, life stresses, parafunctional habits and dental problems to display the relevant risk factors, the real need for radiographic examination as well as the best means of treatment.

Epidemiological surveys reported that 50 - 70 % of the population have signs of temporomandibular joint disorders at some degree during their life, whereas an estimated 20 – 25 % of the population have symptoms of temopormandibular disorders. The same studies reported that those who seek treatment represents approximately 20 % of the reported cases who exhibited symptoms of TMD[37].

Based on the studies in non-patient population, the clinical examination consistently detected more signs of TMD than does

patient self-report. In fact, the clinical examination estimates the frequency of TMD almost twice as often as the patient self-reports of symptoms of TMD- given these facts, in the absence of patient complaint, it is important to document signs of TMD but proceed cautiously with treatment of the condition itself [87].

Signs and symptoms of TMD observed in childhood increase in frequency and severity beginning in the second or third decade of life, results that have been reported in both cross-sectional and longitudinal studies. The prevalence of non-specific measures of the overall symptom level (e.g., Helkimo incidence)[37] in non-patient survey of adults was almost equal in men and women and younger populations. In contrast, when individual symptoms were evaluated separately, women where found to have more headache, TMJ clicking, TMJ tenderness, and muscle tenderness than men. TMDs are often remitting, self limiting, or fluctuating over time, as suggested by recent patient studies [98].

Finally, there is still needs for more and more researches to eastimate the incidence of TMD in different populations, social categories, age groups and occupations.

REVIEW OF LITERATURE

The causes of the Temporomandibular joint (TMJ) pain or dysfunction include internal derangement, rheumatoid arthritis, chronic recurrent dislocation, ankylosis, neoplasia, and infection[37, 80].

Internal derangement is one of the most common forms of temporomandibular disorders (TMD), which denotes abnormal positional relationship of the articular disk to the mandibular condyle and the articular emimence. The clinical findings associated with this disorder are pain, joint sound, and irregular or deviating jaw function[7]. The internal derangement is caused by acute trauma to the mandible, micro trauma accompanying to myofacial pain dysfunction (MPD), bruxism, abnormal occlusion and forceable hyperextension of the mandibular. There are two types of the internal derangement, which are anterior disc displacement with reduction and the anterior disc displacement without reduction[85].

Anterior disc displacement with reduction is called reciprocal clicking.of the joint. In this condtion, during opening of the mouth, the condyle moves over the posterior band of the disc and eventually returns to the normal condyle –disc relationship resting on the thin intermediate zone. During closing of the mouth, the condyle then slips posteriorly and rests on retrodiskal tissue with the disk returning to the anteriormedial displaced position. Patients with this condition suffer from joint tenderness, muscle tenderness, crepitus, and joint noise, which commonly heard with mouth opening and closing (reciprocal clicking). Anterior disk displacement without reduction

is called locked jaw. In this condition the disk is displaced without reduction as the disk is trapped between the condyle and articular eminence and act as a mechanical lock, thus the condyle is unable to translate to its full anterior extent. This condition prevents the maximal opening and causes deviation of the mandible to the affected side. The patients suffer form no clicking, restriction of the mouth opening, limitation in the lateral excursions to the contralateral side, deviation to the affected side and tenderness and pain of TMJ[80,85].

Myofacial pain dysfunction syndrome (MPD) is the most common cause of masticatory pain and limited fuction for which patients seek consultation and treatment. The etioilogy of MPD is attributed to two the theories, which are occlusal disharmony, and psychological stresses. The incidence of MPD is more in female than male and the age of occurance ranges from 15 to 60 years [80,85].

Osteoarthritis is inflammatory reversible disease involving the joint. It involves some anatomical findings including irregular, perforated, or severely damaged disks in association with articular surface abnormalities. It is caused by micro or macro trauma, MPD and anterior disk displacement without reduction. It is a disease of middle old age. It may appear in the second decade of life with the peak of incidence after 40 years of age [80,85].

Dislocation of TMJ occurs frequently and is caused by mandibular hyper mobility. It is displacement of the condyle outside the glenoid fossa where it is held anterior and superior to the summit of the articular eminence. It may be unilateral or bilateral. It occurs

due to wide opening of the mandible, yawing, eating, and dental procedure including wide opening of the mouth for long period, extraction of the lower molars without adequate support of the mandible. It associated with muscle spasm. Subluxation is self–reduction of incomplete dislocated mandibular Condyle. This condition may be known as loose joint[80,85].

Diagnosis of TMJ disorders depends on careful history, thorough physical examination, radiographic interpretation and psychological evaluation[10]. The history and clinical examination are the most important methods in diagnosis of TMJ disorders. The history may be the most important part of the evaluation. It furnishes clues for diagnosis. It begins with chief complain, statement of reasons for seeking the treatment. It should be comprehensive, including accurate description of symptoms, chronology of the symptoms, description of how the problems affect the patients and information about any previous treatment [80].

On the other hand, the physical examination includes the evaluation of the entire masticatory system, inspection of head and neck for soft tissue asymmetry or evidence of muscular hypertrophy, observation of patient for sign of jaw clenching or bruxism, or other habits, systematic muscles examination, muscles palpation for presence of tenderness or fasciculation or spasm, trigger zone, TMJ examination for tenderness and noise. Mandibular range of motion is determined. The dental evaluation is important including elimination of odontogenic sources of pain [80].

Some signs and symptoms (such as bruxism, TMJ sound, TMJ pain, deep bite, oral parafunction,……..) might predict TMD signs and symptoms in a long-term perspective. However, it cannot be concluded whether these symptoms recorded in childhood--oral parafunction, tooth wear, TMJ clicking, and deep bite--can be used for predicting manifested TMD in adult age[12]. The identification and recognition of factors, such as malocclusions and parafunctions, are considered fundamental to early diagnosis of TMJ problems. It is the most useful way to avoid a dysfunctional state of the stomatognathic system [23].

There are some association between occlusal factors and parafunctional habits and TMD. Such association is not considered unique in defining subjects with TMD in the population [13]. Bruxism was not a direct risk factor in TMD, and the clenching habit found to be more harmful than bruxism [14]. Patients with TMD associated with bruxism may present many other additional oral jaw habits leading to increase of masticatory muscle activity. Thus, signs and symptoms of TMD are exaggerated. However, the factors responsible for the increasing of oral jaw habits associated with bruxism remain unknown [73]. Bruxism is considered to be a parafunctional disorder requiring treatment. It is viewed as a risk factor for the development of temporomandibular disorders[69].

In the general adult population there is a complex connection among bruxism, craniofacial pain and symptoms of masticatory disturbances. Furthermore, they suggest that the most direct relationship of bruxism may be with difficulties in mouth