Prevalence of Orofacial Manifestations of Multiple Sclerosis in Patients Admitted Hospital in Sulaimani – Iraq

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Abstract

Objective: Multiple sclerosis (MS) is a confirmed autoimmune disease that begins most commonly in young adult years with pathological involvement of many areas of the central nervous system (CNS). This pathology reflects an abnormality in the orofacial area; this study intends to elaborate manifestations at the orofacial area.

Methods: This cross-sectional study that was done in Shar hospital in Sulaimanyah-Iraq, which included one hundred patients previously diagnosed with multiple sclerosis who were interviewed regarding manifestations of multiple sclerosis. A specially designed questionnaire developed for data, data entered and analysis by (SPSS software 24thedition). Chi-square test was used for analyzing variables.

Results: Females were predominant 68%. At the time of diagnosis 86% of patients were below the age of 40 years. The predominant symptom was eye involvement (50%) with no sex difference(P=0.73), but age-dependent(p=0.04). Other manifestations were numbness of tongue (46%), numbness of face (40%), facial palsy(25%), dysphagia (12%), they were no statistically significant. No patients reported trigeminal neuralgia at the beginning of the disease.

Conclusions: Based on this study dentists and physicians could participate in the diagnosis of multiple sclerosis by doing a proper referral.

Keywords: *Multiple sclerosis, Facial palsy, Dysarthria, Numbness.*

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Introduction

Multiple sclerosis (MS) is a confirmed autoimmune disease that begins most commonly in young adult between 20 and 30 years with pathological involvement of many areas of the central nervous system (CNS): white matter inflammation, demyelination and glial scarring (sclerosis)[1]. The symptoms and manifestations of the MS are the favorites of the pathological process observed in CNS, literally demyelination and a moderate degree of axonal loss[2]. A demyelinating condition in which the usual myelin is disrupted includes autoimmune, infectious, toxic, metabolic, and vascular performance[2]. The hallmark of MS is a chain of neurological deficits distributed in time and space not explained by any other cause[3]. Up to 35% of cases are subclinical, clinical feature relies on the area of CNS affected and may include weakness, dizziness, numbness, fatigue or paralysis in a limp, brief pain, tingling or electric –shock sensation, shaking, lack of coordination or unsteady gait, visual disturbances causing diplopia, or a moving field of vision and pain on eye movement(optic neuritis), urinary incontinence, constipation and sexual dysfunction, cognitive changes (memory loss and impaired concentration), nystagmus, ataxia, jerky (scanning) speech, tremors and loss of muscular coordination develop as a result of cerebellar involvement[2,3]. There are four subtypes of the disease which are; relapsing-remitting, primary progressive, secondary progressive and progressive releasing type[4]. In the United States, 400000 people are influenced by MS, and this inflammatory disease affects 2.5 million personals worldwide, the prevalence of MS varying hugely with geographic variations[4]. The age of attack follows unimodal distributions (most of them between second to third decades of life). In a woman, the incidence of MS is 1.4 to 3.1 times higher than man[1]. Multiple sclerosis (MS) is the frequent illness of young adults, especially woman[5]. MS has difficulty in diagnosis, although many patients who consult a neurologist can be diagnosed clinically without any doubt on the first visit, other situations are more difficult, especially when a patient has minor complains that show no findings or abnormalities on examination or has symptoms such as numbness that also is common in many other conditions[1]. Symptoms in the orofacial area may be the first manifestations, among which stands out trigeminal neuralgia, trigeminal sensory neuropathy and facial paralysis[6-9].

The aim of this study intended to elaborate orofacial manifestations.

Patients and methods

This cross-sectional study was done at Shar hospital (Neurology department- multiple sclerosis clinics). From 1st October 2017 to 31 March 2018. The study included one hundred patients diagnosed with MS according to MacDonald criteria 2012[10]. This research was submitted to and approved by Research Ethics Committee of the Kurdistan Board of Medical Specialties.

All patients randomly selected and each of them gave informed consent verbally to participate in the research. Data collection were collected using a specifically designed questionnaire which included age, gender, and clinical history of onset of the disease. Inclusion criteria included all patients with known multiple sclerosis (new and previously diagnosed). Exclusion criteria included any patient with concomitant medical systemic diseases besides MS, including hypertension, diabetes mellitus, and seizure. Data entered, and statistical analysis was performed using (SPSS software 24th edition), the chi-square test was used for analyzing variables.

Results

Out of one hundred patients examined, 68 (68%) were female, and 32 (32%) were male. Table 1 showed that the majority of the participant patients were diagnosed before reaching 40 years of age, while the remaining were diagnosed after 40. The most frequent finding of the manifestation was eye problems (50%) with no sex differences (p=0.73). However, it was age dependent (p=0.04). The second finding was numbness of tongue (46%), followed by facial numbness (40%), of which (95%) of the cases were unilateral. Another finding was facial palsy (25%), the least common manifestation was dysphagia (12%). There was no statistically significant relationship between age and gender with the manifestations. The only significant statistical finding was eye involvements with age (P = 0.04) (Table 2).

Table 1: Frequency and percentages of age and gender.

Variables		Freq.	percent	Total
Age	≤ 40	86	86	100
	>40	14	14	
Gender	male	32	32	100
	female	68	68	

Table 2: Manifestations of MS in relations to age and gender groups.

Problems	Presence	Sex		P value	Age group		P value
		Male	Female		<=40	>40	
Eye involvements (n=50)	Yes	17	33	0.73	43	7	0.04
	No	33	17				
Facial palsy(n=25)	Yes	11	14	0.14	20	5	0.31
	No	14	11				
Numbness of tongue(n=46)	Yes	18	28	0.15	41	5	0.4
	No	28	18				
Numbness of the face(n=40)	Yes	13	27	0.93	37	3	0.1
	No	27	13				
Dysphagia(n=12)	Yes	5	7	0.44	11	1	0.5
	No	7	5				

Discussion

In this cross-sectional study, one hundred patients with multiple sclerosis were interviewed and examined. The sample was characterized by the predominance of female(68%), and more than three-quarter of the sample was under 40 years of age. This supports the fact that this disease affects mainly female and young age[11,12]. This study was similar to the finding of Cardoso et al., as they found females were (80.2%), the prevailing percentage of the patients from the second decade of life was (90.9%)[13].

In the present study half of the manifestations revealed eye problems, this result matches the initial symptoms of MS that written in a medical textbook in which eyes problems were 53%[14]. On the other hand, one-quarter of the manifestation was facial palsy in which (14 were female, 11 were male), nearly similar finding was reported as facial palsy occurred in 21 patients (19.6%) of Japanese patients[15]. Numbness of the face or trigeminal sensory neuropathy can be progressive bilateral and irreversible[16]. In this study, 40% of the patients revealed facial numbness (mostly unilateral) at the manifestation of the course of the disease. In the present study near half of the patients reported a change of speech from the history, this was consistent with the studies done by (Hartelius L et al. and Darley FL et al.) as they demarcated dysarthria to be 51% and 45% respectively[17,18].

Dysphagia in the present study was 12%, depended on clinical history. While meta-analysis calculated the overall prevalence of dysphagia in MS patients showed the prevalence of dysphagia varied with diagnostic methods; further studies were warranted for a better understanding of the worldwide epidemiology of dysphagia in MS[19]. In the present study revealed other manifestations of MS which were outside the scope of this research, but this study emphasis on manifestations of the orofacial area, by collecting the above finding of (eyes problems, facial palsy, and numbness of face, dysarthria, and dysphagia). Chemaly et al. reported two cases with three orofacial manifestations were trigeminal Neuralgia (tic douloureux), sensory neuropathy of the Trigeminal nerve (paresthesia) and facial palsy[20]. In the present study, no reported of trigeminal neuralgia was found at the manifestations symptoms.

Conclusions

This study revealed that dentists and oral and maxillofacial surgeons/or physician could involve in a diagnosis of MS, by at least in the referral process, because patients in a clinical setting may give a history of unexplained orofacial complaints giving a hint on the possible systemic background of the symptoms.

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