Headache in Parkinson's Disease

G. Meco, M. Frascarelli, L. Pratesi, I. Linfante, L. Rocchi, R. Formisano

SYNOPSIS

The presence of headache in Parkinson's disease has been recently reported in the literature. We studied 9 cephalalgic parkinsonian patients compared to 8 parkinsonian patients taken as controls, both with clinical rating scales and with EMG recordings of neck muscles. The presence of psychiatric disturbances was investigated by means of several rating scales. Cephalalgic parkinsonian patients showed greater muscular activity and a higher degree of anxiety and depression compared to the control group. We suggest the possibility that such factors can account for the cephalalgic condition in these patients.

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INTRODUCTION

Many authors from Charcot[1] to more recently Snider, Koller and others,[2,3,4] report a high incidence of spontaneous pain and sensory symptoms in Parkinson's disease, though offering differing views on their origin. Among these symptoms recently some authors[5,6] emphasized the presence of headache and they tried to evaluate possible relationships between its incidence and the degree of nuchal rigidity.

In our study we examined a group of cephalalgic parkinsonian patients assessing the degree of rigidity both with clinical rating scales and with an electromyographic analysis of neck muscles. Moreover, in view of the importance of the relations between emotional factors and pain, we searched for the presence of anxiety and/or depression in these patients.

MATERIALS AND METHOD

We studied 9 patients with headache compared to 8 patients without headache, both groups with Parkinson's disease. Cephalalgic patients complained of recurrent headache and their pain was always referred to as "constrictive", never as "throbbing".

Extrapyramidal symptomatology was evaluated using: Webster Rating Scale (W.R.S.), Columbia University Rating Scale (C.U.R.S.) and Hoehn and Yahr's staging.

The EMG recordings were performed at rest, during maximal voluntary contraction, during activation induced by a time restricted performance test (Pegboard test) and finally during emotional stress induced by an arithmetic test. The muscular activity was measured with plaque type Beckmann electrodes applied on the upper third of the trapezius muscle. Muscular activity was displayed with a Medelec MS-7 electromyograph and then it was analyzed using a spectral analysis program with the application of Fast Furier Transformer, using a Nicolet Med 80 computer.

The recording was performed for periods of 806 msec. on 1024 digitalized memory points, in the range of frequencies from 0 to 200 Hz.

To study pain tolerance in the two groups, we adopted these simple tests:[7,8]

(1) Post ischaemic venous stasis. After 2 minutes of ischaemia produced by the cuffs of two sphygmomanometers around arms inflated at 200 mmHg, pressure was abruptly decreased to 80 mmHg, so as to produce venous stasis. The time was taken at which subjects began to feel pain or they reached maximum tolerance.

(2) Calf constraint was obtained by the cuffs of two sphygmomanometers around legs, progressively inflated to 300 mm Hg. The time was taken of onset of pain or of maximum tolerance sustained by the patients.

The evaluation of depressive symptomatology was performed utilizing Hamilton Rating Scale for Depression (H.R.S.), Zung Self Rating Scale (Zung R.S.) and Geriatric Depression Scale (G.D.S.), while State-Trait Anxiety Inventory (STAI X-1) was used to evaluate anxiety symptoms.

The Mini Mental State (M.M.S.) was performed in every patient to evaluate the presence of mental impairment.

All the results were statistically analyzed by means of the two-tailed Mann Whitney U test.

RESULTS

The two groups were similar in terms of age, therapy and extrapyramidal symptomatology (Tables 1 and 2). Pain tolerance testing did not disclose any remarkable difference between the two groups excepting one test (Table 3). As regards EMG recordings, (Table 4) basal activity of cephalalgic patients was higher than controls.

Reprint requests to: Department of Neurological Sciences — University "La Sapienza," Viale dell' Universita 30, 00185 Rome.

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