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Cervical dystonia in Parkinson's disease: frequency of occurrence and subtypes

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To the Editors

Cervical dystonia (CD) is one of the most common focal dystonias, being well known for example as a symptom in atypical Parkinson's syndrome (PS) [1]. In Parkinson's Disease (PD) CD is also known, but there is a lack of descriptive studies [2]. In PD it is mostly referred to as a consequence of the disease progress and/or as a consequence of dopaminergic medication [3]. There is a lack of systematic clinical studies analysing the frequency of the occurrence of CD in patients with PD and the subtypes in particular.

Our goal in this study was to examine whether CD appears more frequently in patients with PD than is generally assumed. During the first six months of 2021 we examined all newly admitted inpatients to see whether they had CD or not. Patients with atypical PS were excluded from the onset. We evaluated all patients in the 'on' state. The influence of motor fluctuations on the frequency of CD was not considered. 532 patients (342 males, 190 females) with the diagnosis of PD (according to MDS criteria) were included in the analysis. The average age was 71.4 years (range: 37–93; standard deviation 9.6). Trained neurologists analysed the CD subtypes by clinical examination using the col-cap concept [4]. The patient's age, the duration of PD and the Hoehn & Yahr stage were recorded.

In 181 (34%) out of 532 patients, CD could be diagnosed. The frequencies of the different subtypes differ significantly from the frequencies in those patients having CD without PD [5]. Laterocollis (n = 41) and antecollis (n = 42) occurred most frequently, followed by laterocaput (n = 34). Thus lateral shift, which is a combination of laterocollis and contralateral laterocaput, could be diagnosed in 35 patients. Anterior shift, a combination of anterocollis and retrocaput, was diagnosed in 19 patients.

In 12.1% of patients (22/181) in the CD group, we diagnosed a combination of different subtypes. Analysing these combinations, the form of CD first mentioned, was regarded as the main CD subtype. Combinations mainly occurred in laterocollis (7/41) and laterocaput (7/34), followed by lateral shift (5/35) and antecollis (3/42).

Laterocollis co-occurred with antecollis (3/41 = 7%) and anterior shift (3/41 = 7%). Laterocaput co-occurred with laterocollis (2/34 = 6%) and torticaput (2/34 = 6%). Lateralshift, which is a combination in itself, co-occurred with antecollis (2/35 = 6%) and torticaput (2/35 = 6%).

In antecollis combinations were rarely found. Two patients had a combination with laterocollis (2/42 = 5%) and one patient had an additional lateral shift (1/42 = 2%).

In 36.3% (29/80) CD could already be diagnosed during the first two years from the onset of PD. This could lend support to the conclusion that the duration of PD does not have a relevant influence on the development of CD, as the percentage varied from 28% to 41% in patients with a disease duration of 1–15 years. A further study with more longitudinal data is required to find out if there is a correlation between the duration of the disease and the occurrence of CD and to find out if CD does worsen over the years.

In our rather small single-centre study we saw a correlation between the Hoehn & Yahr stage and the occurrence of CD — CD appeared more frequently in higher Hoehn & Yahr stages. In Hoehn and Yahr stage I, 25% (1/4) of patients had a CD. In Stage II we diagnosed a CD in 27.8% (10/36),

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in stage III (97/291) and in stage IV (51/152) we diagnosed about 33%, whereas in stage V 46.8% of our patients (22/47) could be diagnosed with a CD.

Our findings suggest that CD is a frequent symptom in PD. In our study it was diagnosed more often than we expected. It was diagnosed in the first two years after the initial diagnosis of PD, but there was no rise of frequency in the following years. The occurrence of CD increased in correlation with the Hoehn & Yahr stage. In our population, treatment with botulinum toxin [6] was rarely necessary. Further research is required to evaluate the occurrence and frequency of CD in PD in more detail. A standardised framework for diagnosis, such as the col-cap concept, should be used for the classification of the subtypes of CD.

As our next step we will carry out a controlled, international study called 'CD in PD' confirmed by the local ethics committee. The following centres will participate: Mayo Clinic Florida, USA; Medical University of Gdańsk, Poland; Govind Ballabh Pant Institute of Postgraduate Medical Education and Research, New Delhi, India; and Parkinson Klinik Ortenau, Wolfach, Germany.

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