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Letter to the Editor

Assessing the Relationship Between Carpal Tunnel Syndrome and Migraine Lateralization

Karpal Tünel Sendromu ve Migren Lateralizasyonu Arasındaki İlişkinin Değerlendirilmesi

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Dear Editor,

I have read with great interest the article titled "Carpal Tunnel Syndrome and Migraine Lateralization" by Mr. Koyuncu, published in the 34th volume, issue 4, of your journal on August 2024 (1). I believe this study is significant as it explores the potential relationship between carpal tunnel syndrome (CTS) and migraine. However, I have noted some deficiencies and aspects that require further attention:

Importance of the Study: Migraine and CTS are two distinct conditions commonly seen in the population, both negatively affecting quality of life. In conditions like CTS, which involves peripheral nerve injuries, and in migraines, both non-pharmacological and pharmacological treatment options are available. These approaches aim to alleviate symptoms, improve quality of life, and address underlying pathophysiological mechanisms (2-5). This study suggests that there may be a common pathophysiological mechanism underlying migraine lateralization and CTS by examining the relationship between these two conditions. The study found that migraine pain was more frequently on the same side as CTS, supporting the idea that these two conditions might coexist.

Deficiencies and Points for Discussion:

1. Patient Selection and Inclusion Criteria:

In this study, 500 patients diagnosed with CTS were evaluated. After excluding patients with incomplete data, 413 patients remained. These remaining 413 patients were then assessed for a diagnosis of migraine.

According to the study's methodology, it appears that all these patients were evaluated for both CTS and migraine. However, this wording may give the impression that all 413 patients were diagnosed with migraine, which could confuse them.

If only patients diagnosed with migraine were included in the study, then it should have been clearly stated how many CTS patients were excluded because they did not have a migraine diagnosis. However, if indeed all 413 CTS patients were diagnosed with migraine, this is quite a noteworthy finding and would need to be explained, especially when compared with the literature.

The patient selection process according to the inclusion criteria should be expressed more clearly in the study (6). This will enhance the methodological integrity of the research.

2. Interpretation of Table 2:

Table 2 attempts to demonstrate the relationship between CTS and migraine lateralization. However, the results shown in the table do not indicate a statistically significant relationship between these two conditions ($p = 0.060$). Table 2 examines the relationship between whether CTS is on the right, left, or bilateral and whether the migraine is on the right, left, or bilateral. Evaluating the data in the table:

▪Among patients diagnosed with CTS on the right side, 40% have right-sided migraine, 23.6% have left-sided migraine, and 36.4% have bilateral migraine.

▪Among patients diagnosed with CTS on the left side, 22.9% have right-sided migraine, 35.4% have left-sided migraine, and 41.7% have bilateral migraine.

▪Among patients diagnosed with bilateral CTS, 23.8% have right-sided migraine, 25.4% have left-sided

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migraine, and 50.7% have bilateral migraine.

The purpose of the study is to investigate whether there is a significant relationship between CTS and migraine lateralization. However, the results in Table 2 indicate that there is no statistically significant relationship. In other words, no significant connection was found between which hand had CTS and which side the migraine was on. This finding suggests that the study's hypothesis (that there is a relationship between CTS and migraine lateralization) is not supported. (e.g. in patients diagnosed with left CTS, migraine lateralization was most commonly observed bilaterally.)

This finding should be taken into account when interpreting the study's results. The authors may have attempted to present findings supporting the study's hypothesis, but the statistical analyses do not confirm this hypothesis. Therefore, the study's findings are not sufficient to claim that there is a significant relationship between CTS and migraine lateralization.

It would be more accurate to state that there is no statistically significant relationship between CTS and migraine lateralization. The study's findings do not support this hypothesis, and the results should be interpreted more carefully.

3. Data Inconsistency:

The study states that a total of 413 patients were included. However, when examining Table 3, the total number of patients appears to be 412. Such an error may suggest that a patient was mistakenly excluded during data analysis, which could affect the accuracy and reliability of the results (7).

If indeed one patient was mistakenly excluded from the analysis, this could impact the statistical results. Especially in small sample sizes, the influence of each patient on the results can be quite significant (8). It appears that the missing patient was diagnosed with CTS and showed moderate involvement in both hands. This omission could potentially mislead the study's conclusions. This discrepancy might be a typographical error; however, even typographical errors can raise concerns about the reliability of a scientific study. If the discrepancy is not a typographical error and a patient was indeed excluded from the analysis, the reasons should be clearly stated. In such a case, it should be discussed why the patient was excluded from the analysis and how this might have affected the overall findings of the study.

Sincerely.

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