Background

Tension type headache is the most common type of headache in the general population, with a prevalence of 30-80% [5]. While the exact pathophysiology of tension types headaches is unknown, it is believed that increased muscle tension plays a significant role [5]. It is well known that there are myodural bridges in the upper cervical spine and that the dura inserts at S2 onto the sacrum [4]. These myodural bridges provide passive and active anchoring of the spinal cord and likely can distribute muscle tension directly to the CNS, which in turn can cause tension headaches.

Osteopathic physicians have long felt that somatic dysfunctions (SD) created by muscle tension, postural and kinetic chain imbalances can significantly contribute to tension headaches. With the understanding that somatic dysfunctions can contribute to the pathophysiology of tension headaches, treatment with osteopathic manipulative treatment (OMT) could be a benefit to this patient population.

There are several osteopathic studies that have looked at the effect of OMT on patients with tension headaches. We hope that knowledge of regional and specific SD prevalence can then be used as a guide for future clinical trials to develop causation or guide treatment protocols of OMT in patients with tension headaches.

Methods

A retrospective chart review from July 1, 2014 to October 31, 2019 was conducted at a single outpatient multidisciplinary osteopathic musculoskeletal clinic where patients are seen with tension headaches. The office EHR was searched electronically using the following ICD-10 codes:

- G44.2: Tension-type headache
- G44.20: Tension-type headache, unspecified
- G44.21: Episodic tension-type headache
- G44.22: Chronic tension-type headache
- G44.201: Tension-type headache, unspecified, intractable
- G44.209: Tension-type headache, unspecified
- G44.21: Episodic tension-type headache, intractable
- G44.219: Episodic tension-type headache
- G44.22: Chronic tension-type headache
- G44.221: Chronic tension-type headache, unspecified
- G44.229: Chronic tension-type headache

The EHR search found 89 patients and 309 office encounters that met all of the study’s criteria. The number of encounters per patient varied from 1 encounter per individual to 76. The average number of encounters per patient was 3.47. Please see Figure 2 for the distribution of encounters per patient. These 309 encounters were from 23 different providers.

These providers consisted of 4 ONMM specialists, 1 PMR physician, 2 primary care sports medicine physicians, 1 family medicine physician, 5 ONMM residents, and 15 family medicine residents. 234 encounters were provided by attending physicians and 75 encounters were provided by residents, 47 of which were from the ONMM residents.

After evaluating for SD prevalence collectively, SDs were found in all 10 body regions (Figure 3). The most prevalent to least prevalent were found to be: cervical in 295 (95.5%) of encounters, while 265 (85.5 %) in head, 229 (74.1%) thoracic, 227 (73.5%) lumbar, 211 (68.2%) pelvis, 210 (67.9%) sacrum, 209 (67.6%) rib, 86 (27.8%) lower extremity, 74 (23.9%) upper extremity, and 38 (12.3%) abdomen diagnoses. The most common recurring specific SDs were cervical ESR (230, 41.2%) and cervical ESI (191, 34.2%).

Conclusions

In this retrospective review, we documented 309 patient encounters from 89 patients to one outpatient musculoskeletal clinic. We further detailed the region of the body with the most common SDs and the most common specific SDs within many of these regions. As a retrospective study, we were limited by the level of information provided by the responsible physician at the time that care was provided.

We found that each body region was accounted for among the 309 patient encounters and the cervical region had the highest number of documented SDs. Further, we summarized regional somatic dysfunction prevalence and specific regional SD tendencies.

Limitations include using a single clinic for data, a small population sample, a highly variable number of encounters per patient, the use of multiple providers at different stages of training, and the use of an EMR which is not well suited to streamlining specific SD documentation between providers.

Notwithstanding the above limitations, it is our hope that this knowledge will assist osteopathic physicians with evaluation of tension headache and serve as a template for the development of future prospective osteopathic research protocols.

References

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