

## Introduction

- Pain in Parkinson's Disease (PD) can be classified as musculoskeletal (MSK), chronic body pain as central or visceral, fluctuation-related, nocturnal, orofacial, swelling, or radicular/neuropathic (Tai, Clin Park Relat Disord, 2019).
- Dopaminergic and non-dopaminergic drugs, botulinum toxin, deep brain stimulation and exercises may be limiting for some patients (Yu, Front Neurol, 2019)
- Chinese scalp acupuncture (CSA) is a promising therapy integrating a neurophysiologic understanding of the sensory motor cortex and traditional acupuncture methods (Zhao, Neural Plastics 2021)

## Chinese Scalp Acupuncture Method (CSA)

1. Needle placement:
  - 1) GV20 (Fig 1)
  - 2) Bilateral upper 1/5 motor and sensory cortex with contralateral sensory reinforcement (Fig 2)
  - 3) Bilateral Foot Motor Sensory Areas
2. Once inserted, apply manual stimulation using rapid in and out movements for 2 minutes.
3. Provide electrical stimulation at 15Hz was then applied for 15 minutes

### To locate the motor and sensory areas (Fig 2):

1. find the midpoint of the midline (STAR), and mark 0.5cm posterior.
2. mark a second line from the midpoint of the eyebrow to the occipital protuberance.
3. From the intersection of the eyebrow-occiput line with the hairline, draw a line obliquely up to the 0.5 cm point behind the midline. This is the motor area. The motor area can be divided into five sections.
4. The sensory area is just posterior to the motor area.

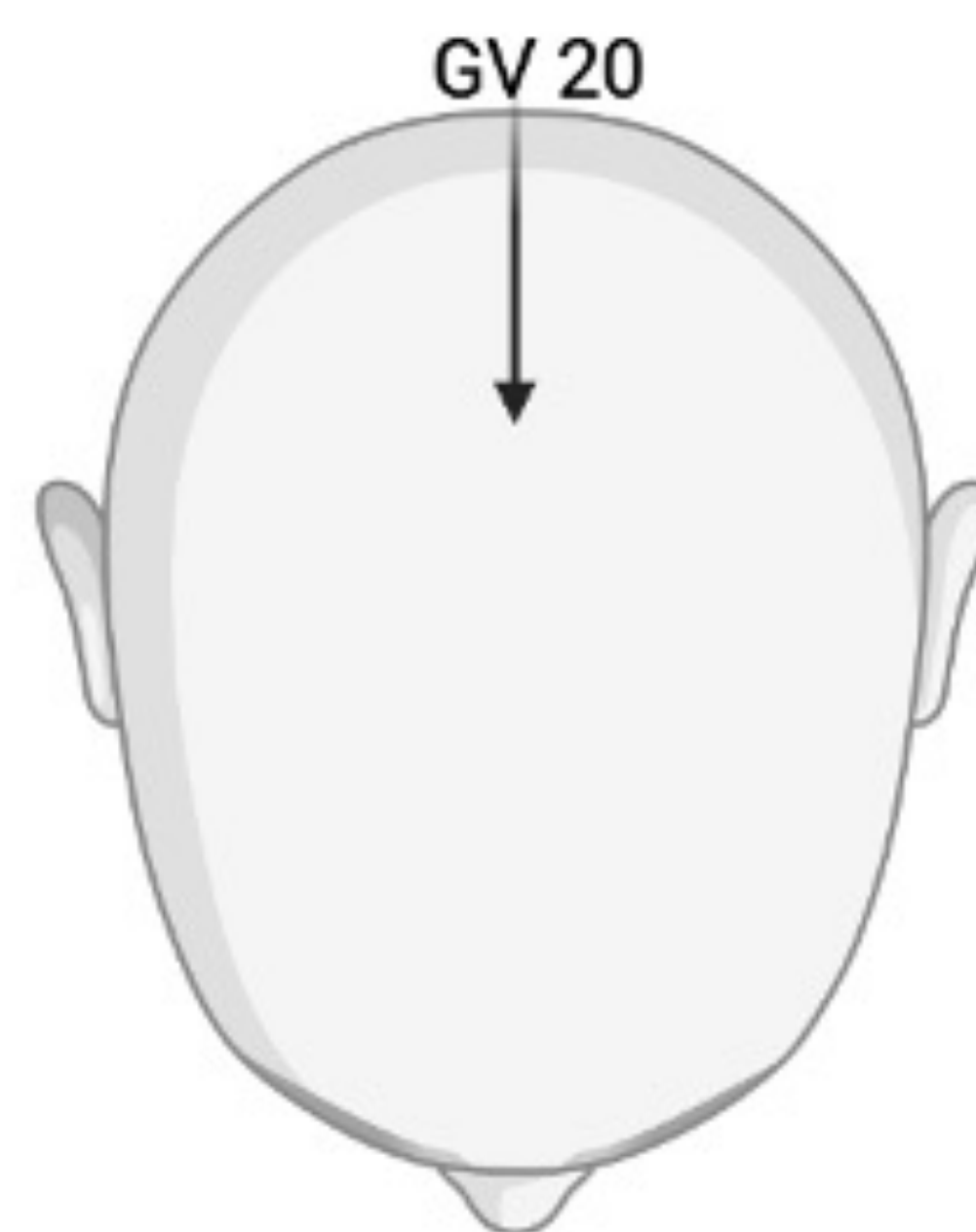


Figure 1. Locating GV20.

## Case Summary

- 65-year-old male with Parkinson's disease presented to pain management clinic with debilitating MSK pain in the paraspinal cervical region associated with tremors
- Previously failed conservative treatment of his pain with optimizing Levodopa/carbidopa, ibuprofen that patient stopped taking due to worsening GERD symptoms, gabapentin, diclofenac gel, lidocaine patch, physical therapy, occupational therapy.
- Received corticosteroids injection 5 months ago without relief
- **Initial visit:** rated his current and average pain a **8 on Visual Analog Scale (VAS)**
  - quality "dull" and "intermittent" worsened with tremors
- Patient was agreeable to trying acupuncture, CSA was performed
- **Immediately post-treatment:** reported pain to be a **0** and reported dramatic decrease in tremors
  - At the same visit, he was initiated on Tylenol 650 mg every 6 hours as needed for multimodal pain control
- **2 week follow up:** reported his pain to be a **1**, and that the CSA controlled his pain at the level of a 0 or 1 post-treatment. Tremors returned to baseline after 1 week.
  - Plan for repeat acupuncture treatment in 2 weeks
  - Maintained Tylenol dose

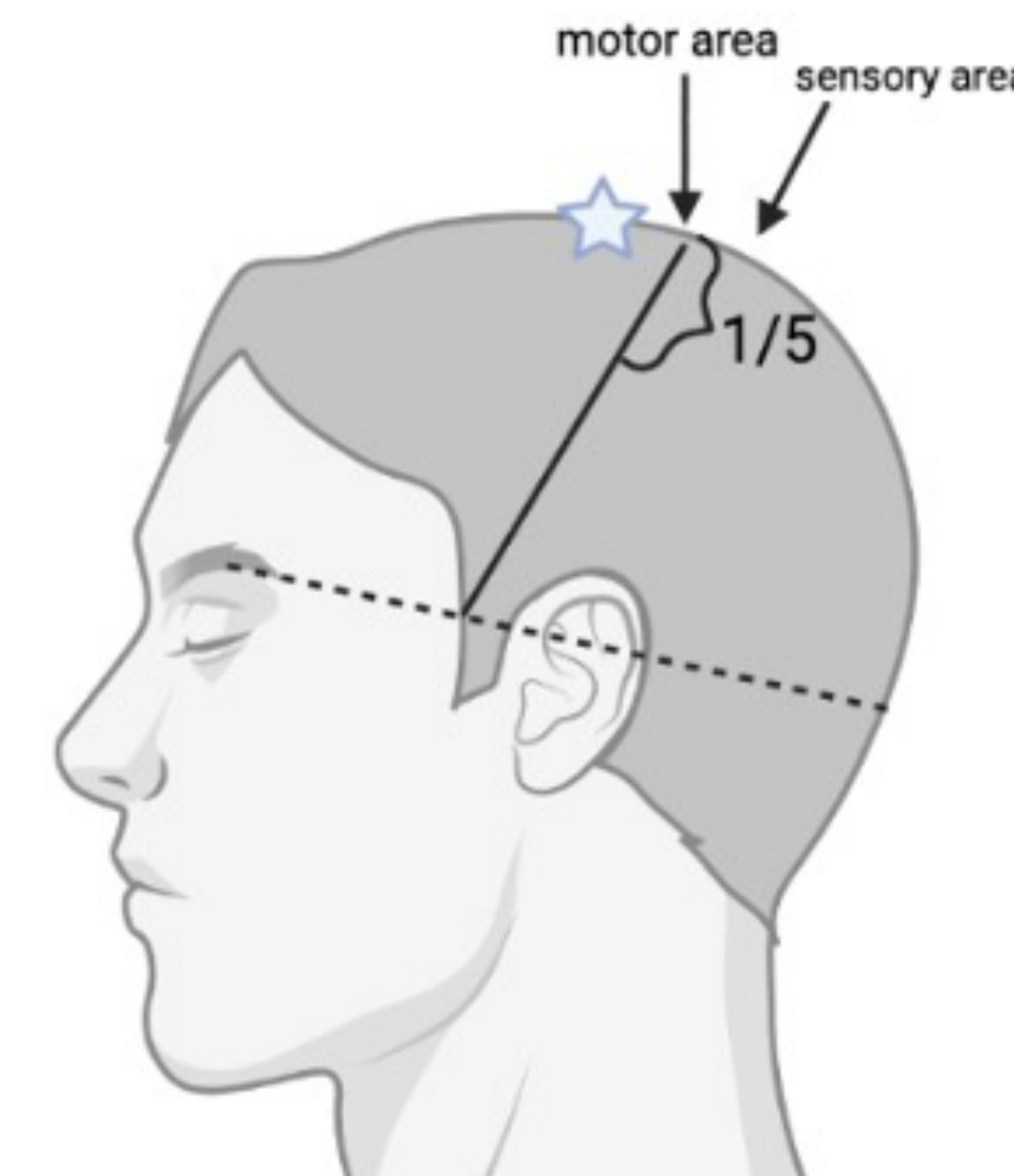


Figure 2. Locating the motor area.

## Discussion

- Pain related to PD is a particularly challenging chronic pain condition due to its high prevalence, progressive nature related to PD, and profound impact on quality of life. Several therapies have been developed; however, they are accompanied by some adverse effects (Edinoff, Neurol Int, 2020)
- Chinese Scalp Acupuncture and traditional acupuncture may provide significant relief as acupuncture may protect dopaminergic neurons from degeneration via anti-oxidative stress, anti-inflammatory, and anti-apoptotic pathways as well as modulating neurotransmitter balance in the basal ganglia circuit (Lee, Chin J Integr Med, 2013)
- This case report identifies an example of successful implementation of CSA as a minimally invasive adjunct treatment for pain in PD, resulting in significant pain reduction and avoidance of opioid medications.
- As an efficient, cost-effective and low risk therapeutic option, CSA warrants further study with larger samples and randomized control trials to better understand the role it should play in multimodal treatment regimens.

## References

- 1) Tai YC, Lin CH. An overview of pain in Parkinson's disease. Clin Park Relat Disord. 2019 Nov 28;2:1-8. doi: 10.1016/j.prdoa.2019.11.004. PMID: 34316612; PMCID: PMC8302194.
- 2) Yu SW, Lin SH, Tsai CC, Chaudhuri KR, Huang YC, Chen YS, Yeh BY, Wu YR, Wang JJ. Acupuncture Effect and Mechanism for Treating Pain in Patients With Parkinson's Disease. Front Neurol. 2019 Oct 22;10:1114. doi: 10.3389/fneur.2019.01114. PMID: 31695670; PMCID: PMC6817566.
- 3) Zhao Y, Zhang Z, Qin S, Fan W, Li W, Liu J, Wang S, Xu Z, Zhao M. Acupuncture for Parkinson's Disease: Efficacy Evaluation and Mechanisms in the Dopaminergic Neural Circuit. Neural Plast. 2021 Jun 15;2021:9926445. doi: 10.1155/2021/9926445. PMID: 34221005; PMCID: PMC8221898.
- 4) Edinoff A, Sathivadivel N, McBride T, Parker A, Okeagu C, Kaye AD, Kaye AM, Kaye JS, Kaye RJ, M Sheth M, Viswanath O, Urits I. Chronic Pain Treatment Strategies in Parkinson's Disease. Neurol Int. 2020 Nov 18;12(3):61-76. doi: 10.3390/neurolint12030014. PMID: 33218135; PMCID: PMC7768530.
- 5) Lee HS, Park HL, Lee SJ, Shin BC, Choi JY, Lee MS. Scalp acupuncture for Parkinson's disease: a systematic review of randomized controlled trials. Chin J Integr Med. 2013 Apr;19(4):297-306. doi: 10.1007/s11655-013-1431-9. Epub 2013 Apr 2. PMID: 23546633.