Burning mouth syndrome represents a chronic condition characterized by an extremely painful burning sensation in the oral mucosa [1]. The disease has no known definitive etiology and is thought to be of multi-factorial origin with a predisposition in middle-aged females [1]. Traditional therapeutic strategies are aimed at symptomatic relief with oral medications that are often insufficient [2]. With the lack of definitive treatment regimens, the use of localized interventional approaches should be utilized to provide pain relief.

We present the case of a 71-year-old female who suffered from burning mouth syndrome for many years. The patient localized the pain to the left lateral region of the oral mucosa, non-radiating with associated burning, tingling, and dysgeusia. The patient’s pain was intractable, interfering with sleep and her overall quality of life. The patient trialed and failed multiple pharmacologic agents including gabapentin, nortriptyline, pregabalin, duloxetine, paroxetine, oxcarbazepine, oxycodone, alprazolam, clonazepam, and viscous lidocaine. Prior to being seen by our service, the patient underwent a left infraorbital nerve block with no reduction in her pain. We decided to proceed with a therapeutic injection of the mandibular division of the left trigeminal nerve.

Under fluoroscopic guidance in the lateral view, the left coronoid notch was identified by asking the patient to open and to close her mouth. A 22-gauge 3.5-in. spinal needle was inserted just below the zygomatic arch directly in the middle of the coronoid notch. The needle
was advanced in a plane perpendicular to the skull until contact was made with the pterygoid plate (Fig. 1a). Using an anterior–posterior view, the needle was then redirected posteriorly and advanced a few millimeters medially and cephalad to target the mandibular nerve (Fig. 1b). A total of 0.5 ml contrast was injected under real-time fluoroscopy to rule out intravascular spread. After negative aspiration, a 2-ml mixture of 2% preservative free lidocaine and 10 mg/ml dexamethasone was slowly injected, and the needle subsequently withdrawn. The patient tolerated the procedure well without complication. Upon follow-up, the patient reported 100% relief in pain during the immediate anesthetic phase and 70% relief 1 month postoperatively.

Burning mouth syndrome is a debilitating disease process that requires a multimodal treatment approach. When refractory to conventional therapy, the use of a trigeminal nerve block in the distribution of the pain may prove to be beneficial in a subset of patients. Few case reports have described successful injections; most notably one done by McMillan et al. but required intervention bilaterally and attempted to target larger nerve distributions [3]. Further large observational studies should be done to guide treatment directions that may be aimed at more long-term relief and determine overall safety.

ACKNOWLEDGEMENTS

Funding. No funding or sponsorship was received for this study or publication of this article.

Authorship. All named authors meet the International Committee of Medical Journal Editors (ICMJE) criteria for authorship for this article, take responsibility for the integrity of the work as a whole, and have given their approval for this version to be published.

Authorship Contributions. Hisham Kassem: interpretation of data, drafting, and revision of article. Lucien Alexandre: interpretation of data, drafting, critical revision of article. Ivan Urits: interpretation of data, drafting, and revision of article. Omar Viswanath: interpretation of data, drafting, critical revision of article. Alan D. Kaye: interpretation of data, drafting, critical revision of article.
Disclosures. Hisham Kassem, Lucien Alexandre, Ivan Urits, Alan D. Kaye and Omar Viswanath have nothing to disclose.

Compliance with Ethics Guidelines. The patient provided their informed consent to publish the article and all procedures were conducted as part of standard care/treatment.

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REFERENCES

1. Aravindhan R, Vidyalakshmi S, Kumar M, Satheesh C, Balasubramaniam A, Prasad V. Burning mouth syndrome: a review on its diagnostic and therapeutic approach. J Pharm Bioallied Sci. 2014;6(5):21. https://doi.org/10.4103/0975-7406.137255.

2. Mcmillan R, Forssell H, Buchanan JA, Glenny A-M, Weldon JC, Zakrzewska JM. Interventions for treating burning mouth syndrome. Cochrane Database Syst Rev. 2016. https://doi.org/10.1002/14651858.cd002779.pub3.

3. Walega D, Smith C, Epstein J. Bilateral stellate ganglion blockade for recalcitrant oral pain from burning mouth syndrome: a case report. J Oral Facial Pain Headache. 2014;28(2):171–5. https://doi.org/10.11607/ofph.1165.