



# Burning Mouth Syndrome



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## Case Presentation

Burning mouth syndrome (BMS) is an altered (oral) sensation that includes a burning sensation of the oral mucosa in the absence of clinically evident abnormalities [1]. BMS is sometimes associated with xerostomia (dry mouth) and dysgeusia. The location of pain is not pathognomonic. Patients with BMS may complain of burning sensations in other areas (such as anogenital regions) [2]. Women, especially those who are post-menopausal, more commonly than other patients who report burning mouth conditions [3]. Diagnosing a patient with BMS becomes particularly complex, because the etiology of it is still, as of yet, unknown [1]. BMS is actually a diagnosis of exclusion [4]. Exclusion of systemic and local factors should be evaluated, and they commonly include hyposalivation, medications, nutritional deficiencies, fungal infection(s), endocrine disorders, and psychological factors [5]. Therefore, treating BMS is (can be) particularly difficult for clinicians to face (to treat) due to several exclusion trials as well as varied/varying responses to medications among patients.

This article reports a 56 year-old woman experiencing burning mouth and burning vagina. She was initially treated for lichen planus due to the burning presence in both her tongue and her vagina. Additionally, she was treated for a fungal infection (as those may occur in both the mouth and vagina). Several analyses revealed she did not have lichen planus, fungal infection, or dry mouth. Subsequent to treatment utilizing several medications, it was concluded the patient truly suffered from burning mouth syndrome.

## Challenge in Diagnosis

The following case covers a 56 year-old woman suffering from burning tongue, and burning vagina, for one year. The patient stressed that one symptom/occurrence appears to cause the other; and, within dialogue, she stressed (particularly) their interrelationship. The burning sensation was on the tip of the tongue, and it was limited to the anterior 2/3 of the dorsum of her tongue; additionally, she stated the burning sensation occurs every day throughout the entire day. Though she stated her pain is lowest during (the) morning hours, she admitted (the) burning was stimulated by (in response to) specific chemical smells and sweet foods.

An extraoral exam exposed no lesions; however, para-functional tongue movement was noted. The intraoral exam revealed pronounced bilateral mandibular and maxillary tori, as well as fissured tongue with bilateral linear hyperkeratosis. A slight erythematous area was seen in the dorsum of the tongue, and the patient admitted to clenching and rubbing her tongue against her dentures.

The symptoms led clinicians to originally believe she may have lichen planus, oral burning, and/or tongue para-function. Burning mouth may be caused by several different factors such as oral dryness, fungal infection, para-functional activity, hematinic deficiency, and certain medications. Consequently, dryness, fungal infection, and lichen planus may also occur in the vagina. The erythematous appearance of the posterior dorsal surface of the tongue may be due to erythematous lichen planus or fungal infection. It was also originally thought that the para-functional tongue movement might be caused from the burning sensation. Therefore, Clobetasol gel 0.05% was prescribed, which is a topical steroid for lichen planus [6]. Dexamethasone 0.5mg/5mL mouthwash was also prescribed, because its corticosteroid component distributes anti-inflammatory effects directly on the oral mucosa [7]. Additionally anti-fungal agent clotrimazole 10 mg troche was prescribed in case of a fungal infection [8]. Patient was scheduled for a follow up in two weeks.

Patient returned with a slight improvement of her tongue burning after starting the clotrimazole troches. However, she stopped using dexamethasone after two days because her tongue continued to burn and turned white. A diagnostic procedure was done where neurogel was placed on the anterior tip of the tongue, and the patient stated that, after 10 minutes, her tongue was numb. Not only was her tongue pain free, but the burning sensation in her vagina also vanished. Alpha-lipoic acid 400 mg twice a day was prescribed, because it is an antioxidant with the ability to participate in nerve repair [9]. The patient was also instructed to finish the remaining clotrimazole troches.

Two weeks later, the patient informed clinicians the clotrimazole troches improved her pain, and she stated that she recently had her gall bladder removed. Following the surgery, she

was pain free for two days, and then her pain gradually returned to her tongue and vagina. Her intraoral exam demonstrated the same original findings of bilateral linea alba, bilateral mandibular and maxillary tori, and fissured tongue with bilateral linear hyperkeratosis. The patient was assessed to have burning mouth disorder and was prescribed gabapentin 100 mg, starting with 1 every day, tapering up every 3 days, if no side effects, up to 400 mg. Gabapentin is a medication usually used to treat neuropathic pain, and it was therefore prescribed to the patient to determine if the patient has true burning mouth syndrome [10].

Weeks later, the patient stated she experienced headaches and nausea from the gabapentin; therefore, she was prescribed Klonopin 0.5mg to take at night. Klonopin (also known as Clonazepam) possesses inhibitory effects on the central nervous system, which therefore may relieve the patient from pain [9].

At her follow she discontinued using gabapentin at 400mg/day, as she experienced headaches and nausea. She also stopped using Klonopin after 10 days, because she experienced headaches, drowsiness, and nausea. The alpha-lipoic acid trial demonstrated no improvement. Patient was assessed to have hyposalivation and/or burning tongue-Glossodynia. She was prescribed Nuerogel in PLO (%5 Tegretol, 2% Elavil, 5% Lidocaine) and instructed to place on tongue after drying it.

The patient returned, after four weeks, with the same chief complaint of intense burning sensation on her 2/3 dorsum of tongue and vagina. She also revealed that when previously taking gabapentin, she went directly to taking 400mg (instead of 100mg and gradually increasing the dosage). Therefore, gabapentin 100mg was prescribed again, with directive to increase 1 pill, every 3 days, up to 400mg.

One month later, the patient stated she has been getting worse and could not take gabapentin because of the headaches. A fungal swab was taken of the patient's tongue and dentures. Since she was experiencing headaches with gabapentin, she was prescribed amitriptyline 10mg: starting at 10mg and gradually increasing to 50 mg/day with 10mg increments every 3 days. Amitriptyline is a tricyclic antidepressant which studies have shown to be useful when treating BMS [11].

Fungal swab tested negative, and the patient stated the amitriptyline has been helping—waking up with minimal pain, and most the day she is pain free. However, she explained she has an increased burning at night until she goes to bed. Since the patient finally felt relief from burning in both her mouth and vagina, when taking amitriptyline, she was assessed to have burning mouth disorder. The patient was instructed to slowly increase the amitriptyline dose to 40 mg. Neurogel was also prescribed for the patient to apply at night, in order to bridge the gap, until amitriptyline takes effect.

A month later, the patient expressed a concern that she was gaining weight due to the amitriptyline. Because the patient was discontented with the side effects of the medication, she

was switched to nortriptyline 10mg which is another tricyclic antidepressant.

The patient was seen a month later, and she explained she suffered from headaches, night sweats, and GI disturbances from nortriptyline. Although she was getting relief from nortriptyline, the medication was not controlling her pain as well as amitriptyline. She further clarified that she continues to have pain triggered (or increased) by smells and lights, and that neurogel gives her pain relief for about 2 hours. Because the patient was experiencing undesirable side effects, she was taken off nortriptyline. She was prescribed Topamax 25 mg and directed to increase 100mg/day in 2 divided doses—increasing 25mg every 3 days if no side effects are experienced. Topamax (Topiramate) acts on different neural transmission levels, and it has been used in certain situations including painful sensations on the tongue [12].

### Discussion

Diagnosing a patient with BMS is a timely process due to its exclusion aspect, and connecting its relation with the female's vagina is, to this day, unheard of. As our case study demonstrated, choosing the ideal medication was an extensive process in within determining treatment.

Trial and error resulted, finally, in amitriptyline working most effectively for the patient's pain and discomfort. However, due to unfavorable side effects, the patient discontinued the medication for nortriptyline which did not treat the pain as well as amitriptyline. Because of scheduling difficulties with the patient, results have not been collected on Topamax's effectiveness in treating her BMS. This was a challenging case, because, although the treatment was established, the patient's diagnosis was not completed. Further tests have not have been done, because the patient has not returned to clinic.

Looking into the medication that relieved her of the pain, amitriptyline, it is shown that an antidepressant was the solution to treating this patient's BMS and burning vagina. The manner in which antidepressants work in the human body leads us to think that there was probably a neurological mishap. More examinations are needed in order to reveal what may have been connecting her anterior 2/3 of the tongue to her vagina.

Due to the patient dealing with ongoing depression, this may have been the origin of giving her the perception of burning mouth and burning vagina. Thus the antidepressants may have been treating her initial problem, depression, and as a secondary effect dealing with her BMS in her tongue and vagina.

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