Burning mouth syndrome is characterised by discomfort or pain of the tongue, roof of the mouth, gums and the back of the mouth or throat. The tongue is the most affected, followed by the lips, palate and cheeks. There is no known medical or dental cause. The syndrome may affect up to one third of post-menopausal women and up to 15% of adults overall.

Other terms used to describe the condition include stomatodynia, glossodynia, oral dysesthesia or scalded mouth syndrome.

**Symptoms**

As the name suggests, burning mouth syndrome is characterised by a burning or tingling sensation in the mouth and tongue. The appearance of the mouth and tongue is normal.

Common complaints include:
- Burning sensation
- Tingling or numb sensation
- Mouth pain that worsens as the day progresses
- Dry mouth sensation (xerostomia)
- Taste alterations (dysgeusia), including bitter or metallic taste

The burning sensation may be felt on the tongue, hard palate and mucosa of the lower lip. This pain or sensation is often compared to the transient pain experienced after too hot food or drinks. Tingling or a numb sensation may occur throughout the mouth and tongue, especially the tip and anterior two-thirds. Facial skin is not usually affected.

Taste alterations may lead to persistent complaints of a bitter or metallic taste. Tongue thrusting and bruxism (teeth grinding) may also be evident.

Most patients with burning mouth syndrome suffer from subclinical neuropathic pain. In more than half of the patients, the onset of pain is spontaneous, with no identifiable precipitating factor. In some people the onset is related to a dental procedure, a recent disease or the use of certain medications.

Typically, the symptoms occur during the day and into the evening. Burning mouth pain is often absent during the night, but people may complain it interferes with their ability to fall asleep. The pain resembles toothache in intensity but differs in description. Once the burning pain starts, it often persists for many years. The pain may be relieved by food consumption.

Perhaps due to sleep disturbances, patients often have mood changes, including irritability, anxiety and depression.

**Causes**

Conditions associated with burning mouth syndrome include:
- Chronic anxiety or depression
- Various nutritional deficiencies
- Type 2 diabetes mellitus
- Hypothyroidism
- Gastro-oesophageal reflux disease (GORD)
- Changes in salivary function

Nutritional deficiencies include vitamins B1, B2 and B6, folate, iron and zinc.

Hormonal changes associated with menopause in women are a common factor with burning mouth syndrome. Dry mouth and the sensation of burning mouth are common in menopausal women. The mouth and salivary glands contain oestrogen receptors so, variations in hormone levels associated with menopause affect the oral cavity. Symptoms can appear up to 3 years before menopause and persist for up to 12 years. There is conflicting evidence that hormone therapy significantly improves symptoms. The effect is highly individual so some women with menopause-related symptoms benefit from hormone therapy while others do not.

Some medications have been linked to burning mouth symptoms including:
- ACE inhibitors (captopril, enalapril, fosinopril, lisinopril, perindopril, quinapril, ramipril, trandolapril)

The onset of symptoms is related to the time of...
commencement of the medication. Once these medications are reduced or ceased, oral burning often reverses within several weeks.

Symptoms of burning mouth can also be caused by infections (especially oral candida or thrush), allergies, hypersensitivity reactions, vitamin deficiencies, and ill-fitting dentures. These are distinct from burning mouth syndrome.

Management
A medical and dental history is important in identifying burning mouth syndrome. Other potential causes should be ruled out. Spontaneous remission, at least partially, in about 50% of people with burning mouth syndrome may occur within 6 to 7 years.

Some simple measures such as eliminating mouthwash, chewing gum, smoking, very acidic drinks (certain fruit juices, soft drinks, coffee) and spicy foods may help. Avoiding these products for 2 weeks is suggested to see if there is any improvement. Trying different brands of toothpaste and avoiding mint flavours may also help.

Cognitive behavioural therapy (CBT) may improve symptom intensity. It may reduce the intensity of pain for as long as 6 months. Group psychotherapy and electroconvulsive therapy (ECT) may also help.

Medications
The management of burning mouth syndrome is directed at its symptoms and is often the same treatment as for neuropathic pain.

Low doses of benzodiazepines (e.g. clonazepam), tricyclic antidepressants (e.g. amitriptyline), or anticonvulsants (e.g. gabapentin, pregabalin, topiramate) may be effective in some patients. Clonazepam (Rivotril, Paxam) can either be taken orally or topically (swish and expectorate).

The data suggests that amisulpride, SSRIs (especially paroxetine, sertraline) and duloxetine (Cymbalta) may be effective treatments for burning mouth syndrome.

Amisulpride (Amipride, Solian Tablets and Solution, Sulprix) in a dose of 50mg daily has been shown to produce a significant reduction in pain after 8 weeks use. Amisulpride is only approved for use in Australia for acute, chronic schizophrenia with prominent positive and/or negative symptoms.

Treatment with the antioxidant alpha-lipoic acid (Lipoec 200) in a dose of 200mg three times daily for 2 months has been shown to significantly improve symptoms.

Benzymidine hydrochloride (Diffam lozenges, solution, mouth gel), or hormone therapy in post-menopausal women can also improve symptoms of burning mouth. Topical capsaicin has been used with benefit in some patients.

Parkinson’s disease
Burning mouth is a frequent symptom in people with Parkinson’s disease. Patients develop burning mouth symptoms after the diagnosis of Parkinson’s disease and are frequently taking only levodopa (Madopar, Sinement, Kinson, Duodopa).

Dopamine agonists such as pramipexole (Sifrol) prescribed for the treatment of Parkinson’s disease, have led to full remission of burning mouth symptoms after 4 weeks use.

Summary
Burning mouth syndrome causes bilateral pain and discomfort of the tongue and mouth, often increasing through the day and relieved by eating. Burning mouth syndrome is most prevalent in post-menopausal women and can significantly reduce the quality of life. People with the condition often have high levels of stress, anxiety and depression. No single treatment has proven successful for all people with burning mouth syndrome.

References
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