

# OROFACIAL DISORDERS IN POST MENOPAUSAL FEMALES



DR.M SRINIVASA RAJU  
PROF & HOD

DR SATEESHA REDDY  
PROF

DR G.N. SUMA  
PROF

DR RAVI PRAKASH  
ASSOCIATE PROF

DR. SUMIT GOEL  
P.G. STUDENT

**AUTHORS:-** DR. M SRINIVASA RAJU ( PROF & HOD), DR. SATEESHA REDDY B.H. ( PROF), DR. G.N. SUMA ( PROF), DR. RAVI PRAKASH S.M. ( ASSOC. PROF), DR. SUMIT GOEL ( P.G. STUDENT), DEPTT OF ORAL MEDICINE & RADIOLOGY, KOTHIWAL DENTAL COLLEGE & RESEARCH CENTRE MORADABAD ( U.P.)

## INTRODUCTION

**M**enopause is a normal developmental stage in a woman's life, marking the permanent cessation of menstruation. It is the result of irreversible changes in the hormonal and reproductive functions of the ovaries. Menopause is accompanied by a number of characteristic physical changes; some of which occur in the oral cavity. The two most common oral manifestations of menopause are: oral discomfort, including pain, a burning sensation, dryness, and altered taste perception; and alveolar bone loss as a result of osteoporosis..

The median age of menopause for women is about 50 years of age, and approximately one-third of a woman's life is post-menopausal. The vast majority of these women experienced spontaneous cessation of menses between the ages of 47 and 55 years when the production of estrogen decreased because of an inadequate number of functioning follicles within their ovaries. Fewer women enters menopause after surgical removal of both ovaries. This preventive procedure usually is performed to prevent ovarian cancer in conjunction with a hysterectomy, which is required to treat abnormal bleeding, endometriosis or pelvic inflammatory disease.

The physiological changes associated with spontaneous or surgical menopause cause some women to experience uncomfortable symptoms such as hot flushes, night sweats, difficulty sleeping, mood swings/depression, changes in skin (particularly around genitals but also in other areas) resulting in laxity, reduced scalp hair and vaginal dryness. In women with predisposing emotional instability an abrupt decline in ovarian function frequently precipitates violent psychic and somatic reactions. Other women remain completely asymptomatic and may not display inevitable regressive changes for many years.

In addition, estrogen deprivation arising from menopause

in association with age-related factors disproportionately increases the risk of:

- Developing cardiovascular disease ( myocardial infarct, stroke)
- Osteoporosis
- Alzheimer's disease
- Oral disorders.

The many complaints attributable to the menopausal state may be grouped arbitrarily into three general headings:

### **Imbalance of the autonomic nervous system**

Hot flushes, sweats, palpitations, spasms globus hystericus;

### **Psychogenic disturbances**

Apprehension, depression, insomnia, nervousness, headaches frigidity;

### **Metabolic disorders**

Bone demineralization, myalgias , skin and mucous-membrane atrophy.

### **Main orofacial disorders that occur secondary to systemic diseases after menopause are:**

- Xerostomia
- Burning mouth syndrome
- Increased incidence of dental caries
- Fibromyalgia
- Taste alterations
- Gingivitis
- Periodontal disease -at least 23 percent of women

ages 30-54 have periodontitis and 44 percent of women ages 55-90 who still have their teeth have periodontitis.

- Osteoporotic jaws unsuitable for conventional prosthetic devices or dental implants.
- Temporomandibular disorders
- Skin diseases
- Others like lichen planus, benign pemphigoid, Sjogren's syndrome

This article is an effort to describe important orofacial manifestations in post menopausal females.

### **XEROSTOMIA**

Approximately 46.67% of post menopausal females complain of dry mouth (xerostomia). In these individuals, the feeling of oral mucosal dryness generally reflects a subjective sensation, rather than one objective symptom of salivary gland dysfunction.

There are clear alterations in saliva quantity and/or quality which may be detected. A reduction in salivary flow rate (hypo-salivation) is a common finding, whereas changes in salivary composition may vary. Protein, potassium, and phosphate concentrations, in fact, have been found to be significantly higher in unstimulated saliva of some females whereas other patients have shown a decrease in total salivary protein concentrations. These findings suggest variability in salivary gland function disorders in some post menopausal subjects. As a result, a variable number of these patients may suffer from lack of lubrication and become more prone to develop infections, because of reduced local host defenses.

### **BURNING MOUTH SYNDROME**

The term "BMS" clinically describes a "variety of chronic oral symptoms that often increase in intensity at the end of each day, and that seldom interfere with sleep" Accordingly, two specific clinical features define this syndrome: (1) a "symptomatic triad", which includes unremitting oral mucosal pain, dysgeusia, and xerostomia; and (2) "no signs" of lesion(s) or other detectable change(s) even in the painful area(s) of oral mucosa. Full-blown syndrome is commonly observed in specific subgroups of patients, such as peri-/post-menopausal women. In the remaining cases, "oligosymptomatic" (pain and dysgeusia or pain and xerostomia) or "monosymptomatic" (pain only) forms of BMS are the most frequent presentations.

There is a striking association between BMS and peri-/post-menopausal stages. Approximately 90% of women who attend healthcare clinics for their BMS symptoms are peri-/post-menopausal women. They report pain onset ranging from 3 years before to 12 years after menopause. Likewise, from 18% to 33% of menopausal women exhibit BMS symptoms. In an attempt to understand a possible explanation for this association, investigators have assessed several features of menopause in BMS women.

Within this group, the duration and the type (*e.g.*, natural, surgical, etc.) of menopause as well as the treatment-related features do not appear to play a pivotal role in either BMS development or severity. The most credited theory regards menopausal hormonal changes as a "master player" in BMS onset, although estrogen replacement therapy (ERT) does not relieve pain in many cases. The variable response to ERT treatment may be due to either the presence/absence of the expression of nuclear estrogen receptors in oral mucosa or the possible activation of reversible/irreversible neuropathic mechanism(s).

### **CHANGES IN THE ORAL MUCOSA**

Changes in the oral mucosa occurring in menopausal women may vary from an atrophic and pale appearance to a condition known as menopausal gingivostomatitis. This condition is marked by gingiva that is dry and shiny, bleeds easily, and ranges from an abnormally pale color to tissue that is very erythematous. Desquamative gingivitis is also common in post menopausal females.

### **INCREASED RISK OF DENTAL CARIES**

Due to poor oral health and reduced salivary flow, post menopausal women are more prone to develop caries.

### **OSTEOPOROSIS**

Osteoporosis is characterized by a loss of bone mass and density. Specifically, this disorder entails a reduction in cortical bone (outer compact bone) thickness and in the number and size of trabeculae of cancellous bone (inner bone). Osteoporosis results from increased resorption of bone, decreased formation of bone, decreased estrogen levels, decreased calcium levels, excessive corticosteroids, hyperthyroidism or age-related changes. Since the teeth are embedded in bone that comprises the maxilla and mandible (jaw), osteoporotic changes affect these structures. In post-menopausal osteoporosis, lack of estrogen will affect the remodeling of the bone tissue in such a way that, in most patients with periodontitis, the amount of bone resorbed exceeds that being formed, resulting in net bone loss.

### **FIBROMYALGIA**

**Fibromyalgia** meaning muscle and connective tissue pain (also referred to as FM or FMS), is a disorder classified by the presence of chronic widespread pain and a heightened and painful response to gentle touch (tactile allodynia)<sup>1</sup> Other core features of the disorder include debilitating fatigue, sleep disturbance, and joint stiffness. In addition, persons affected by the disorder frequently experience a range of other symptoms that involve multiple body systems, including difficulty with swallowing functional bowel and bladder abnormalities, difficulty breathing, diffuse sensations of numbness and tingling (non-dermatomal paresthesia), abnormal motor activity (*i.e.* nocturnal myoclonus, sleep bruxism), and cognitive dysfunction. An increased prevalence of affective and anxiety-related symptoms is also well known. While the criteria for such an entity have not yet

been thoroughly developed, the recognition that fibromyalgia involves more than just pain has led to the frequent use of the term "**fibromyalgia syndrome**". Many postmenopausal women suffer with fibromyalgia and are told their distress as "all in your mind. Muscles respond to hormonal changes by feeling sore and cranky. There is sleep loss (Non-restorative sleep is a hallmark of fibromyalgia). Lack of calcium (and other minerals) can make bones tender.

### **TASTE DISTURBANCES**

Taste disturbances are a common complaint among menopausal and postmenopausal women. Altered taste perception to salty, peppery, or sour has been reported in approximately 20 percent to 90 percent of menopausal women.

### **TEMPOROMANDIBULAR DISORDERS**

In recent decades, the effects of sexual hormones on various organs and tissues have been demonstrated. Joint structures may be considered a target for sex steroids: in particular, estrogens act on bone (with an anti-resorption effect through direct inhibition of osteoclastic activity) and cartilage (influencing cartilage turnover). Moreover, estrogens and progesterone may influence the content and the characteristics of collagen fibers; in particular both hormones, alone or in combination, increase type III collagen content and lead to a decrease in the type I/III collagen ratio. Temporomandibular disorders (TMD) is a collective term used to describe a number of heterogeneous conditions affecting the temporomandibular joint (TMJ), the masticatory muscles, or both. At present, TMD are considered a frequent chronic orofacial pain condition mainly present in females. Despite the fact that several studies have documented a different prevalence of TMD with respect to gender, factors responsible for this sexual dimorphism have not been clearly understood, so that some authors have suggested that hormonal factors play an important role.

Animal studies have demonstrated the presence of sexual hormone receptors in the TMJ tissues and the effects of these hormones on joint components, such as collagen and proteins. Immunohistochemical studies have shown the presence of estrogen and progesterone receptors in the human articular disk, and higher concentrations of estrogen receptors in disk samples of women with signs and symptoms of TMD.

### **SKIN DISORDERS**

It has been found that oestrogen affects every organ system of the body including the skin. It appears that oestrogen receptors are most abundant around the genital area, face and lower limbs. Therefore these areas are especially vulnerable to reduced amounts of circulating oestrogen and are the reason for certain skin conditions involving these areas to be more common in peri- and postmenopausal women than in women of other age groups. Itching, irritation, white, thinned, wrinkled skin, fissures or tears and facial hirsutism (abnormal hair growth in

women) are very common in post-menopausal women not on HRT. Approximately a third of post-menopausal women may develop noticeable hair loss, usually at the front and on the top of the scalp (frontal). Menopausal flushing (Reddening of the face, neck and upper chest that lasts 3-5 minutes and subsides quickly) occurs in 70-85% of women throughout the peri-menopausal stage.

Postmenopausal frontal fibrosing alopecia (PFFA) is a new clinical entity that can be regarded as a version of lichen plano-pilaris with fronto-temporal, and more rarely, eyebrow localization. It is an irreversible process with a slow course, although cases with spontaneous cessation of the process were reported. Within different forms of scarring alopecia, attention is mainly focused on lichen pilaris that includes lichenplanopilaris and Graham-Little's syndrome. Frontal fibrosing alopecia can be regarded a new member of this group of diseases and current literature defines this pathology as follicular keratosis, which is a special version of lichen plano-pilaris.

### **OTHERS**

Autoimmune disorders like lichen planus, benign pemphigoid, sjogren's syndrome and aphthous ulcers are also commonly seen in post menopausal female.

### **TREATMENT**

Treatment should be in form of prevention techniques like calcium and vitamin D supplements, symptomatic relief for oral problems and replacement therapy for hormones. The basic principle of therapy should be not only to assuage symptoms but also to cushion the metabolic insult resulting from the estrogen lack. Homemade psychotherapy, encouragement and sedatives may lessen anxiety, but can never be a substitute for estrogen therapy. Women should take healthy food. Fruits and vegetables provide essential vitamins, minerals, and other nutrients. Exercise also is important to maintain oral health and a healthy lifestyle.

Xerostomia can be managed by the use of both saliva substitutes and saliva stimulants. Gustatory stimuli such as sugarless sweets containing citric and malic acid, chemically induce saliva production. Controlled studies have shown that pilocarpine is an effective stimulus to saliva production. Properly balanced artificial saliva should be of neutral pH and contain electrolytes, including fluoride, to correspond to the composition of saliva. There have been a number of studies that have shown that chewing gum increases salivary flow from patients using xerostomia of varying aetiology. In some menopausal patients, the initial stimulated salivary flow rate while chewing sugarfree gum is seven times greater than the unstimulated flow rate.

Females with burning mouth syndrome can be managed with pharmacological agents administered topically or systemically. Based on the reported new evidence of changes in peripheral autonomous innervation in BMS, topical administration of drugs has recently been

considered. In particular, daily topical use of clonazepam (or tablet applied 3 times each day for sucking) has shown partial to complete pain relief in most patients with idiopathic BMS. Low doses of capsaicin, applied 3 or 4 times topically on the area(s) where the pain is localized, appear to be quickly effective in alleviating the pain in BMS subjects. Patients with a stronger psychogenic component may be unresponsive to these medications. In these cases, the most effective pain management is the systemic administration of mood-altering drugs. In such patients long-term treatment with anxiolytics and antidepressants may be clinically useful in BMS subjects. Sertraline (50 mg/day), paroxetine (20mg/day), and amisulpride(50mg/day) are reported to be well-tolerated and effective after a four- to eight-week administration in BMS subjects. Analgesic doses of anti-depressants should be adjusted according to the individual response and may be particularly indicated in BMS patients with minor depression.

Patients who do not respond to any of the above treatments (resistant BMS) should undergo "cognitive" or "cognitive/behavior" therapies, since they probably have, in their BMS spectrum, a strong and complex psychogenic component of the pain. The purpose of psychodynamic therapy is to allow each patient to understand the causes of his/her symptoms

New research is finding that bone loss due to osteoporosis is associated with increased severity of periodontal disease. Women considering Hormone Replacement Therapy (HRT) to reduce the effects of menopause and to prevent osteoporosis should note that similar beneficial effects have been found when studying its relationship to periodontal health. HRT has been found to be protective in terms of tooth loss and decreased incidence of gingival bleeding.

Finally, keeping tabs on emotional health during peri or post menopause is important. A healthy outlook on life enables women to value themselves and seek the care required including: maintaining good oral health, seeing the doctor and dentist regularly, and focusing on healthy eating and exercise.

## CONCLUSION

Oral physicians thus have an opportunity to refer women who are not under the care of a gynecologist for an evaluation to determine the appropriateness of HRT for its systemic and oral health benefits because estrogen supplements may offer: gingival tissue benefits, helps relieve the oral discomfort, helps to prevent against osteoporosis and thus protecting loosening of the teeth.

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