Disease/Medical Condition

MULTIPLE SCLEROSIS
(also known as “MS”)

Date of Publication: May 19, 2015

Is the initiation of non-invasive dental hygiene procedures* contra-indicated?  No

- Is medical consult advised? No (assuming patient/client is already under medical care for multiple sclerosis, which is well controlled).

Is the initiation of invasive dental hygiene procedures contra-indicated?** Possibly, but not typically

- Is medical consult advised? ......................... Possibly (depends on severity and level of control of the disease, particularly if there is an active episode). The dental hygienist should direct an undiagnosed patient/client with clinical findings suggestive of MS to an appropriate healthcare provider for a definitive diagnosis (typically a primary care physician, who in turn can refer to a neurologist).
- Is medical clearance required? ......................... Possibly (e.g., if there is an active episode and/or there are manifestations that may affect safety of procedures). Medical clearance may be required if patient/client is being treated with medications associated with immunosuppression +/- increased risk of infection (e.g., oral or intravenous corticosteroids [such as prednisone or methylprednisolone for acute attacks] and/or disease-modifying, immunomodulatory drugs [such as natalizumab, alemtuzumab, interferon, and methotrexate]).
- Is antibiotic prophylaxis required? ......................... No, not typically (although extended use of corticosteroids and/or immunosuppressors may warrant consideration of antibiotic prophylaxis).
- Is postponing treatment advised? ......................... Possibly, but not typically (depends on severity and level of control of the disease, including whether there are signs/symptoms of an active episode or exacerbation of MS, as well as whether there is a need for medical clearance for patients/clients on medications associated with immunosuppression). Elective professional oral care should be scheduled during periods of remission; patients/clients experiencing a relapse should have their routine dental hygiene care postponed.

Oral management implications

- The patient/client with multiple sclerosis should be evaluated to determine the severity and level of control of the disease, as well as the types of medications being used.
- Patients/clients with stable disease and little motor spasticity or weakness can receive routine dental hygiene care. Persons with more advanced MS may require assistance in transferring to and from the dental chair. Patients/clients taking muscle relaxants (e.g., baclofen and benzodiazepines) are at increased risk of dizziness, hypotension, and ataxia.
- Patients/clients with MS often take anti-inflammatory medications, corticosteroids and immunomodulators, which can impact oral care (see above and below).
- Severe fatigue is common, particularly after an ordinary day’s activities. Therefore, the MS patient/client should usually be booked for short appointments in the morning. As well, a comfortable, quiet, relaxed environment may reduce patient/client stress.
- Because the MS patient/client may be sensitive to heat, the clinic room temperature should be kept cool. As well, frequent washroom breaks may be needed if the patient/client has bladder or bowel incontinence.
- Oral self-care instructions should include adaptations for ambulation problems, muscle weakness, tremors, and vision disturbances. Power or modified manual toothbrushes may be easier for the patient/client to use, and sitting to brush and floss is less tiring than standing. Saliva substitutes and other measures are indicated for xerostomia.
- Various infections may stimulate relapses in MS symptoms. Thus, the prevention of oral infections via frequent dental hygiene appointments may prevent disease exacerbation.
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Oral management implications (cont’d)

- As MS progresses, the patient/client loses muscular coordination, and oral hygiene care becomes increasingly difficult. Involvement of the tongue and facial muscles interferes with self-cleansing mechanisms in the oral cavity.
- Severe upper extremity intention tremor and/or muscle weakness/spasticity, as well as sensory changes in the hands (i.e., numbness, tingling, or pain), make simple self-care tasks, including oral hygiene activities, difficult or impossible. Hand tremors can be managed by wearing a weighted glove while brushing teeth.
- There is no evidence that mercury from dental amalgam causes MS or that removing dental amalgam improves the course of MS.

Oral manifestations

- Disease-related oral manifestations occur in 2% to 3% of persons with MS. These include dysfunction of the TMJ joint, tongue, and facial muscles; numbness of the orofacial structures (including lip and chin); dysarthria (in MS, characterized by slow irregular speech with unusual separation of syllables of words — termed scanning speech); swallowing difficulties; and facial pain.
- During an acute attack of MS, the patient/client may experience facial paresthesia, and muscles of facial expression can undulate in a wavelike motion termed myokymia (which feels like a “bag of worms” on palpation).
- Trigeminal neuralgia (tic douloureux) is much more likely to occur among persons with MS than in the general population. Unlike conventional trigeminal neuralgia, tic douloureux caused by MS can be bilateral. The facial pain is paroxysmal, “electric shock-like”, and can be provoked by touching the cheek, tooth brushing, or mastication. The pain lasts for only a few seconds, but is usually very severe and can recur several times during the day.
- Medications used to manage MS and its complications may cause side effects such as xerostomia (e.g., anticholinergics for bladder control or tricyclic antidepressants for depression), gingival hyperplasia (e.g., phenytoin for pain management of trigeminal neuralgia), gingivitis, angular cheilitis, and dysgeusia (altered taste). Ulcerative stomatitis and salivary gland enlargement may result from treatment with glatiramer acetate injection, and mitoxantrone infusion may cause mucositis and stomatitis.
- Oral candidiasis may result from xerostomia, difficulty from keeping the mouth clean, and corticosteroids used to treat relapses.
- Patients/clients on long-term immunosuppressant treatment have an elevated risk of oral squamous cell carcinoma and lymphoma.

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Related signs and symptoms

- MS is the most common progressive and disabling neurologic condition affecting young adults. It is typically diagnosed in persons aged 15 to 40 years. MS predominantly affects persons of northern European background (with women being affected two to four times more commonly than men), and it is more common in the cold and temperate climates of higher latitudes, including Canada. Nearly 100,000 Canadians have multiple sclerosis.

- MS is a central nervous system (CNS) disorder in which there is ongoing destruction — autoimmune-mediated (with or without possible triggering infectious agent) — of the myelin sheath of nerve axons. This demyelination leads to neurologic signs and symptoms that accrue over time. The white matter of the cerebral hemispheres, brainstem, cerebellum, and spinal cord are vulnerable; the peripheral nervous system is not affected.

- The natural progression of MS is unpredictable. In most persons with MS, the disease is initially relapsing-remitting (RRMS — “on again, off again”), with transition to a slow and relentless chronic progression within 10 to 20 years of diagnosis in about half of RRMS cases. However, in some persons MS maintains a relapsing-remitting course indefinitely, and in others the course is benign, with the patient/client having only one or a few mild exacerbations and no permanent functional disability. By contrast, about 10% of people with MS have primary-progressive MS (PPMS), characterized by a slow accumulation of disability, without defined relapses. As well, about 5% of persons experience progressive-relapsing MS (PRMS), in which there are relapses with or without recovery and steadily worsening disease from the beginning.

- Infection, surgery, and trauma are associated with a worsening of MS. Fever, significant physical exertion, hot weather, a hot bath or shower, and sunlight exposure may cause a transient, reversible worsening of symptoms.

- Motor signs/symptoms are common, including muscular weakness and spasticity; ataxia (lack of voluntary coordination of muscle movements); scanning/halting quality of speech; and upper extremity intention tremor. 50% of persons with MS need help to walk within 15 years of disease onset; continued muscle atrophy can lead to wheelchair use or bed restriction with consequent increased risk for pneumonia.

- Sensory signs/symptoms include numbness, tingling, impairment of temperature sensation, impairment of proprioception (i.e., abnormal sense of one’s own position, posture, and equilibrium), and chronic pain.

- Bladder, bowel, and sexual dysfunction can result from nerve conduction disturbance.

- Visual disturbances (e.g., impaired visual acuity and colour vision, visual field defects, double vision, and pain in or behind the eye) are common. Optic neuritis (i.e., inflammation of the optic nerve) involving temporary blindness is sometimes the first presenting sign/symptom.

- Depression and emotional instability often accompany MS, and there may also be cognitive impairment.

- Some medications used to treat MS are immunosuppressants, and place patients/clients at increased risk for opportunistic and community-acquired infections and for the development of cancers (e.g., lymphoma with biologic response modifier drugs, and leukemia with mitoxantrone). Anemia (low red blood cell count), neutropenia (low white blood cell count) and thrombocytopenia (low platelet count) can also result from use of immunomodulators.

- Most persons who have MS can expect a normal or near-normal lifespan, due to improvements in symptom management and MS disease-modifying therapies.
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References and sources of more detailed information

- MS Society of Canada
  https://beta.mssociety.ca
- National Multiple Sclerosis Society (USA)
- Multiple Sclerosis Society (UK)
  www.ncbi.nlm.nih.gov/pubmed/12222018
- Impacts of Multiple Sclerosis on Dental Health.
  http://www.halton.ca/cms/One.aspx?portalId=8310&pageId=10358
  St. Louis: Elsevier; 2013.

* Includes oral hygiene instruction, fitting a mouth guard, taking an impression, etc.

** Ontario Regulation 501/07 made under the Dental Hygiene Act, 1991. Invasive dental hygiene procedures are scaling teeth and root planing, including curettage surrounding tissue.

Date: October 16, 2014