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Homework # 5 - Trigeminal Neuralgia and Bell Palsy

Trigeminal neuralgia is a painful condition that affects one or more branches of the Trigeminal Nerve (Cranial Nerve V). It causes acute (often unilateral), brief, stabbing pains along the nerve tract, which usually last seconds to minutes with no loss of sensitivity. There is no documented cause for trigeminal neuralgia. According to the article in Dimensions, “TN’s risk factors and etiology are largely unknown, but arterial or venous pressure on the fifth cranial nerve may be a causative factor. Some patients with TN have multiple sclerosis (MS) or a tumor that causes compression near the associated trigeminal nerve” (*McKinney et al., 2021*). Conventional wisdom states that it could result from the deterioration of the protective myelin sheath of the trigeminal nerve root or due to venous or arterial pressure applied on the nerve root. It could also be caused by degenerative changes of sensory ganglion, which go on to transmit altered impulses. It can also occur as a secondary condition, resulting from a more severe and major neurologic condition such as a tumor, cyst, or even Multiple Sclerosis.

Bell Palsy is a type of facial paralysis. It is characterized by a sudden weakness of the muscles of facial expression on one side of the face. It is attributed to damage to Cranial Nerve VII, i.e the Facial Nerve. Like Trigeminal neuralgia, the exact cause is unknown. It could be due to compression of the Facial Nerve while exiting the skull via the Stylomastoid Foramen of the Temporal bone. Other theories include Herpes Simplex Virus infection, middle ear infection, Lyme disease, and facial trauma, to name a few.

Bell Palsy and Trigeminal Neuralgia can cause negative effects on the oral health of an individual. Most patients suffering from trigeminal neuralgia shy away from dental care because of the pain and the fear of triggering an attack. In Bell Palsy, nerve damage can cause the loss of muscle tone, impairing the ability to chew food. Food can get trapped in the vestibule. This can lead to increased biofilm, heavy plaque and calculus, caries, and periodontal disease in both conditions. Decreased salivation in both cases also contributes to increased caries activity. “Due to the increased risk of caries in this population, dental hygienists may want to consider these strategies, as well as the application of fluoride varnish and/or prescription home-based fluoride therapies” (*Kandray,2014*)

A detailed history and physical examination are key to diagnosing the condition. There are no specific methods to diagnose either Trigeminal Neuralgia or Bell Palsy. A comprehensive intraoral and extraoral examination is key. The dental hygienist should visually inspect and palpate the lips, mucosal surfaces, and oral cavity. Salivary gland function should be assessed for salivary flow. Lymph nodes must be palpated, along with a thorough examination of the temporomandibular joint to assess the range of motion. Radiographs of the teeth and temporomandibular joint are important to rule out other differential diagnoses. An MRI can reveal neurovascular contact and/or the trigeminal nerve's deformity as a result of a cyst, tumor, or disease like MS (in the case of Trigeminal Neuralgia). It can also rule out other potential causes of pressure on the Facial Nerve like a tumor or skull fracture in the case of Bell Palsy patients.

According to *Despite Pain*, “It can feel impossible at times to put a toothbrush anywhere near your teeth when you have trigeminal neuralgia. But dental health is important; despite the pain, you still need to look after your teeth” (*Pain, 2022*).

An extra soft toothbrush and toothpaste for sensitive teeth are normally recommended to minimize irritation. Warm water is advised, as cold can be a trigger for an attack in a patient suffering from trigeminal neuralgia. Some patients may even be advised to use a numbing spray/mouthwash before brushing. During severe episodes, a soft foam or silicone finger soaked in chlorhexidine can be used instead of brushing. Water picks can be used with warm water to clean between teeth as an alternative to floss. Bell Palsy patients are also advised to rinse with water after eating to remove food particles that may be trapped in the vestibule. A preservative or alcohol-free fluoride mouth rinse should be used daily to control bacteria associated with tooth decay and gingivitis. Decreased salivary flow, resulting in Xerostomia is seen in patients suffering from both these conditions. “There are a number of products available to address the effects of xerostomia, including those containing fluoride, calcium phosphate technologies, antimicrobials, sodium bicarbonate, and xylitol. These products can increase lubrication and decrease the loss of minerals from tooth surfaces by improving saliva's buffering ability.” (*Kandray,2014*)

With the knowledge of these conditions, potential causes, and their manifestations, the dental team can better manage patients and avoid unnecessary discomfort during dental procedures.

References :

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