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ORAL MANIFESTATIONS OF NEUROLOGICAL DISORDERS - A REVIEW

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ABSTRACT

About 30-40% sensory and motor nerves of the body reside in oral and maxillofacial region. Dental professionals form an indomitable team for the early diagnosis of some neurological diseases. The dental treatment of patients with neurological disorders comprises of identification and diagnosis of the disease, risk factors followed by appropriate treatment and maintenance of oral hygiene.

KEYWORDS: *Oral, Pathology, Maxillofacial, Neuro, Dental*

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INTRODUCTION

Oral and maxillofacial region houses 30% to 40% of neural networks in relation to sensory and motor origin[1,2]. Oral manifestations of neurological diseases are of utmost importance pertaining to Parkinson's disease, neoplasms affecting orofacial neurological apparatus and Sturge Weber syndrome[1]. In this scientific article, we have discussed the most common neurological disorders with pathognomonic oral and maxillofacial manifestations followed by their dental management.

NEURAL DISORDERS

Parkinson’s disorder – It is a degenerative disorder resulting in the loss of striatal dopaminergic neurons leading to bradykinesia, tremor and cogwheel rigidity. In nondopaminergic areas, symptoms of non-motor origin such as depression, sleep disorder and cognitive changes occur[4]. Trauma, dairy products, environment, pesticides and melanotic conditions are major risk factors[5]. Clinical features include apathy, sensory dysfunction, mood disorder, fatigue, dysautonomia, postural instability and insomnia. Oral features include jaw tremors, dysgeusia, tongue rigidity, xerostomia, orofacial pain, dental caries, periodontitis and incompetent lips[8,9,10,11]. Management component includes toothbrushes with a wider grip, supine position, high-speed suction apparatus, sugar-free chewing gum, pit-fissure sealants, mouth guard and salivary substitutes.

Bell's palsy – It is a neurological disorder involving lower motor neurons resulting in weakness of facial muscles. Risk factors include cold, inflammation, anatomy, viral and ischaemia[16,17,18]. Obesity, diabetes, pregnancy, upper respiratory tract infection, preeclampsia and hypertension are risk factors[19,20]. Clinical appearance includes paralysis and weakness of orofacial musculature in relation to lower motor neurons involving one side leading to hyperacusis, inability to wink an eye, inability to smile, inability to raise eyebrows and pain pertaining to the mastoid region or auditory region. Dysguesia, hypersalivation, decreased lacrimal secretions and functional demand of mastication forms the oral component15,19,21,22.

Oral management comprises of mouthwashes, fluoride application, artificial saliva, wedge resection and botulinum toxin injection.

Multiple sclerosis – This demyelinating disease is of inflammatory and autoimmune origin. Risk factors include trauma, environment, genetics and viral. Clinical features include dysarthria, vertigo, nystagmus, loss of facial senses, diplopia and ophthalmoplegia. Poor oral hygiene, trigeminal neuralgia, facial palsy, and paresthesia of the lower lip and chin form the oral counterpart. Dental management includes chlorhexidene mouthwashes, fluorides, salivary substitutes and varnishes.

Sturge-Weber syndrome – Also known as encephalotrigeminal angiomatosis which occurs due to angiogenic factors. Vascular malformation of the brain, glaucoma, intracranial leptomeningeal. angioma, post-wine birthmark and angiomas of maxillary and ophthalmic branches of the trigeminal nerve are seen clinically Vascular malformations in relation to maxillary gingiva, mandibular gingiva, labial mucosa, palatal mucosa and tongue region. Haemostatic measures are to be followed in order to avoid haemorrhagic tendencies.

Pringle Bourneville phacomatosis – Commonly known as tuberous sclerosis complex involving the nervous system, skin, kidney, heart and lungs. Hamartin and tuberin are proteins which code for TSC1 and TSC2 genes. Lymphangiomyomatosis, cardiac rhabdomyoma, subependymal giant cell astrocytoma, renal angiomyolipoma and facial angiofibromas form the major criteria. Retinal achromatic patch, bone cysts cerebral white matter radial migration lines and multiple renal cysts form the minor criteria. Oral counterpart includes high arched palate, delayed tooth eruption, haemangiomas, cleft lip and cleft palate. Dental management is planned by tooth restoration, cleft lip–cleft palate surgical repair and correction of gingival irregularities.

Von Recklinghausen's disease – This type of neurofibromatosis is due to defective gene NF1 located at the 17q11.2 chromosome.Clinical features include scoliosis, neurofibromas, optic gliomas and cafe-au-lait spots. The oral component includes malocclusion, pain, impacted tooth, missing tooth, maxillary hyperplasia and gingival irregularities. Conservative or surgical management in conjunction with biopsy. A biopsy must be done. Conservative or surgical management can be done.

CONCLUSIONS

Management of oral and maxillofacial diseases and disorders needs to be attended in an emergency basis due to the involvement of neurological apparatus. Early diagnosis and detection of neurological diseases and disorders lead to better maintenance of oral hygiene.

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