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Orofacial Pain in Oncology Patients : Prevalence, Etiology, Differential Diagnosis, Management

[1] Maryam Kuzekanani
[2] Hengameh Ashraaf

[1] Associate Prof
Department of Endodontics,
Kerman Dental School, Kerman Iran
[2] Associate Professor
Department of Endodontics,
Shahid Beheshti School of Dentistry.Tehran

Address For Correspondence:
Dr. Maryam Kuzekanani
Associate Prof
Department of Endodontics,
Kerman Dental School, Kerman Iran
E-mail : maryam_30002001@yahool.com
Phone NO : 0098-341-2456448
Mobile NO : 0098-9131416717

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Abstract
Orofacial pain in cancer patients is a common complication.It happens because of the cancer itself or because of a wide range of anti-cancer treatments such as chemotherapy & radiation therapy or both factors together..Some times this pain is very severe and doesn,t relieve after administration of strong analgesic drugs.Since it intensifies through agressive anti cancer treatments such as high dosages of administration chemotherapy drugs,it may end to the cease of the treatment itself,so this pain may be life threatening and can be a challenge for providing public health. The aim of this review of the literature paper is to describe the prevalence,etiology, physiopathology ,differential diagnosis and to give some recommendations for managing this pain as much as possible.

Key Words
Orofacial, Pain, Oncology

Introduction

Cancer accompanied with it,s Radical methods of treatment is a problem suffered by many patients all over the world.Despite several investigations done to clear the mysteries of this disease still it remains a great challenge in providing public health. In relation to denistry and specially to Endodontics peripheral neurotoxicity and neuropathic pain in orofacial tissues are common side effects of cancer and a wide range of anti-cancer treatment plannings .Such pain the origin of which if not diagnosed and not treated may affect the whole quality of life 1 of the patient and may cause severe chronic to acute discomfort . Since this pain can not be 2,3 controlled by the analgesic drugs it may finally end to the cease of the treatment itself.The neuropathic pain in Oncology patients manifests as a diffuse jaw pain or numbness and is 4,5 sensed quite different from the localized tooth pain with pulpal origin.The purpose of current review of the literature paper is to describe the prevalence,etiology, differential diagnosis and management of this life threatening side effect of the cancer and related anti cancer treatment s such as chemo and radiation therapy.

Prevalence

All Epidemiologic researches done to determine the incidence of orofacial pain in Oncology 1 patients have reported high incidence of this complication . McCarthy & Skillings have reported orofacial neurotoxicity and neuropathic pain in a group of Chemo treated breast6 cancer patients as high as 65% up to 86 % . .A more recent study in 2007 has also reported the 1 incidence of this complication up to 70% in patients with cancer .

Etiology

The main cause of the orofacial pain in cancer patients is the tumor itself because of the space occupying(87%-93%) and in much less numbers of the patients(17%-21%) it happens following anti cancer treatments such as chemo and radiotherapy, although these causes of orofacial pain1 may both at the same time be responsible for this complication .Leukemic infiltration,secondary anemia, chemotherapy or radiotherapy mucositis, post surgery pain,secondary infection,osteoradionecrosis ,bisphosphonate related osteoradionecrosis of the jaws are some 0f the well known causes of this orofacial pain.The most common acute oral side effect of cancer chemotherapy or radiotherapy is oral mucositis in tissues such as buccal and labial mucosa ,ventral and lateral aspects of the tongue ,soft palate and floor of the mouth.These signs and symptoms of mucositis are diagnosed approximately 6-10 days after starting Chemo therapy treatments .In the patients who intake high dose neutropenia-inducing chemo drugs specially in malignancies with epithelial origin hard pain is the most important7,8 symptom of this mucositis which makes patient contact with the clinical team.

Physiopathology

According to Clark and Saravanan in 2008 approximately in 50% of all cancer patients the Orofacial pain is caused completely or partly by neuropathy. The nerve damage followed by the administation of the chemo drugs may involve sensory and motor nerves alone or both together.The accumulation of the cytotoxic by products of the drugs during all cycles of administration leads to this complex nerve damage which is maximum in the last cycles of administration so the orofacial pain in oncology patients caused by the nerve damage usually appears and intensifies in the last rounds or in high dosages of

applications and in 1,2,8 resting cycles this pain reduces or at all diminishes.

Differential Diagnosis

Although the diffuse jaw pain or numbness in cancer patients is sensed quite different from localized toothache with pulpal origin , some authors in the literature have reported that high dosage administration of the chemotherapy drugs specially cyclophosfamides may cause toothache which just relieves after pulp extirpation .This condition may become a challenge for the dentist to find out the etiology of the dental pain since it happens because of severe neurotoxicity and as a result severe neuropathy followed by administration of the high 8,9 dosages of the chemo drugs without having any dental problem.

Management

In order to manage the orofacial pain in oncology patients first of all the clinician should diagnose the etiology of pain among multiple causes discussed before.To treat this pain basically, the malignancy should be treated effectively .If the pain is originated from the mucositis ,the injury to the tissues causes release of reactive oxygen species and periinflammatory cytokines . To relieve this pain in step one, non steroid antiinflammatory drugs and instep2 weak opoid drugs and in the step 3 strong 0p0id drugs are administered.AS it was stated before in some of the patients this orofacial pain doesn,t respond to the analgesic10 drugs well and at last may end to the cease of the treatment itself.

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