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A PROTOCOL FOR PREVENTIVE DENTAL CARE BEFORE RECEIVING HEAD AND NECK RADIOTHERAPY

Dental Science

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ABSTRACT

The increased incidence of cancer patients is unavoidable; the head and neck cancer represents a major oncological problems, due to their high mortality and the consequences of their treatment. Radiotherapy is an important treatment option for many lesions in this anatomical region, used as a single resource or in combination with other therapeutic modalities, however, the effects of radiation do not only affect malignant cells, but it is also absorbed by healthy oral tissues, particularly by those with greater cellular renewal capacity. Mouth lesions occur during and after radiation, which decrease the quality of life of these patients and sometimes can interfere with the continuity of radiotherapy, putting your life at risk. Therefore, it is important to apply preventive dental protocols in an individualized way before starting radiotherapy, to maintain and improve their quality of life during this oncological treatment that affects the oral cavity.

KEYWORDS

Head and neck cancer, Radiotherapy, Protocol preventive dental care.

INTRODUCTION

Cancer is a disease that is on the rise as reported De la Fuente, J., Muñoz, P., Patrón, E. (2014), mentions that; "…the number of cancer cases has increased in the last decade and 15 million new cases are expected for the year 2020 worldwide". Equally, Carrillo, R., Simón, N., Gil, R. (2011) noting that; "…the number of cancer deaths is expected to increase worldwide and exceeds 13.1 million in 2030". Head and neck cancer represents one of the major cancer problems, both because of their high mortality, as by the sequels of its treatment.

W. González, A. Santos, M. Carvalho, R. Andrade, y M. Ajudarte. (2010) describes; oral cancer corresponds to approximately 3% of cancers in humans, being the squamous cell carcinoma (SCC), the most frequent malignant tumor of the oral cavity, with approximately 90% of cases of oral cancer. The diagnosis of oral cancer most often is in advanced stages, so the treatment includes radiation therapy and / or chemotherapy, with or without previous surgery.

It is more common in men than in women and has its highest incidence in the 5 th-6th decade of life. It may affect such important functions as phonation and swallowing. It can be located at: nostrils and paranasal sinuses, nasopharynx, oral cavity, oropharynx, larynx, hypopharynx and salivary glands. The most frequent histological type is Squamous Cell Carcinoma or Epidermoid, as they point out. Cedeño. J., Rivas. N., Tuliano, R. (2014).

At present, the precise etiology of oral cancer is not known, but it is already known that the risk factors that predispose to the development of the disease are the habit of smoking, the excess of alcohol or the combination of both, dietary factors (deficiency of iron, vitamin C, Zinc, Copper), chronic friction, viral infections (Mainly Papilloma virus) and precancerous lesions (Erythroplasia, Luecoplasia). The tumor may spread by local infiltration into surrounding tissues or metastasize in regional lymph nodes. C. Gómez, K. Chimeneos, L. López y Z. Finestres (2003),

The main and cancer treatments are surgery, radiotherapy and chemotherapy. These last two oncological therapies act not only on neoplastic tissues, but also on healthy cells, during and after treatments, usually they occur side effects that may occur in the form of oral lesions and systemic, in the case of therapies level head and neck. Caribé, F., Chimenos, E., López, J., Finestres, F., Guix, B. (2003)

The required dose of radiation depends on the location and type of malignant entity being treated; and if radiation therapy alone or in combination with other modalities used. The dose of radiation for head and neck, carcinomas, healing purposes is usually 50 to 70 Gray (Gy), for 5 days, 5 to 7 weeks, 2 Gy per fraction. For pre-operative purposes it is smaller. The fractionation of the exposure is due to the difference in reaction between neoplasia and normal cells, allowing the latter to repair DNA damage and cellular re-oxygenation, reducing early side effects; the most aggressive therapies are proportional to more severe and frequent sequelae. Vissink, A., Burlage,F., Spijkervet,F., Jansma, J., Coppes, R. (2003)

One of the treatments to treat head and neck cancer is radiotherapy but the sequelae they produce are inevitable, and even more so when there is no attention and dental care to the patient in a timely manner before therapy begins by the Stomatologist. With radiotherapy the damage mainly occurs at the level of the Salivary gland in the serous and mucous acinos with the loss of the serous component of the saliva, which contributes to it becoming very dense, sticky, mucous and viscous, this gives rise to xerostomia, mucositis, radiation caries, tooth loss, and taste changes, pain, candidiasis, dysgeusia, osteorradio necrosis, soft tissue necrosis, loss of periodontal support, trismus and halitosis, which causes general malaise in the patient, because it reduces the possibility of good nutrition, and deteriorates the overall health, which often accelerates malnutrition and consequently causes the weakening of your immune system, thus compromising the patient's life.

Therefore the general practice dentist you must know the protocols to give preventive dental care to this oncological population that is increasing. To accomplish this, in the clinic of the Faculty of Stomatology of the Benemérita Autonomous University of Puebla (México) the protocol of preventive dental care was applied, by taking as their basis what they propose; Caribé, F., Chimenos, E., López, J., Finestres, F., Guix, B. (2003), y Cedeño, J. Tuliano, R. (2014), to minimize oral sequelae to patients who are going to be followed by radiotherapy at the head and or neck level and improve their oral conditions, so they can feed themselves as well as possible during therapy.

OBJETIVE

Demonstrate the effectiveness of the preventive dental care protocol, to control and minimize oral sequelae to patients who are going to undergo radiotherapy at the head and / or neck level.

MATERIALS AND METHODS

A group (Group A) was formed with 10 patients before receiving radiotherapy at the head and / or neck level by the presence of a tumor and was compared with the sequelae reported in the literature by bioethics conditions.The following preventive oral protocol was applied; Medical-Dental History, periapical radiographic study, prophylaxis, application of 5% Sodium Fluoride varnish (Clinpro de 3M ESPE) to reduce the risk of caries when under radiation treatment, in the presence of caries was it obdurate with resin brand Z350 (3M), as well as the filtered restorations were changed by new resins, to the teeth

with deep cavities they were made endodontic, to the very deteriorated teeth that could not do the endodontic were realized the Exodontics (and only in cases where radiotherapy was started 3 weeks after the extractions). Otherwise, those teeth were left with endodontic treatment prophylactically. Once the oral rehabilitation is finished the treatment of radiotherapy was started. (Figure 1)

Subsequently, the patient was cited once a month for evaluation and control and prophylaxis, application of 5% Sodium Floride varnish was performed. And to increase salivary flow during radiotherapy, were given the use of Pilocarpine HCl tablets 5 mg 4 times a day for a total of 20 mg. Or drops of 2%, 4 drops each 8 hrs. This protocol was carried out for 4 months, the total number of treatments in the 10 patients during the 4 months is described in Tables 1 and 2 (Table 1y 2)

Table 1. Estrada, B. (2017)

Patient	Prophiylaxis Periodontics A.S.F 5%	Resins	Endodontics	Exodontics
10	38	97	16	11

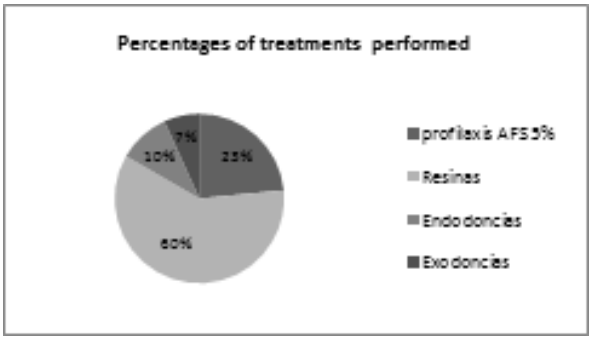

Table 2. Estrada, B. (2017)

RESULTS

The results presented by the group (A) at 4 months were compared with that reported in the literature and the following were observed: tooth loss was eliminated, the radiation caries, xerostomia and mucositis was minimized. With the use of Pilocarpine was able to maintain some moisture in the oral mucosa that minimized the dryness and burning, as reported by the literature.

This allowed the patients to feel better and having a good diet that made them feel better and quality of life during this process of radiotherapy in cancer disease. (Figure 2)

Figura 1, Estrada B. (2017)

Figura 2, Estrada B. (2017)

CONCLUSIONS

The participation of the dentist in the diagnostic phase of the head and neck cancer patient, supports his intervention before the start of radiotherapy, since patients with cancer need multidisciplinary treatment before the start of radiotherapy. With the results obtained applying the dental care protocol before starting radiotherapy at the head and neck level, it was observed that the oral sequelae were minimized and the relief contributed, largely, to improve the quality of life of the patient when it is radiated at the Head and / or Neck level, compared to what the literature reports.

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