

Improving the Palliative and the Supportive Care in Cancer Patients

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ABSTRACT

The quality of life (QL) in oral cancer patients has become one of the most important parameters worth considering, in the diagnosis and the post-treatment follow-up. The purpose of this article was to review the papers which were published on the studies which were done on the QL in oral cancer patients, the clinical results which were obtained, and the systematic revisions which were available in the indexed literature for the last 10 years. The term QL has appeared as a keyword in an increasing number of articles throughout the past 10 years; however, only few studies had focused on oral cancer. Most of them had assessed all the head and neck cancers, which conformed to a heterogeneous group with several different features, depending on the location of the cancer (oral cavity, oropharynx, larynx,

hypopharynx, nasopharynx and the salivary glands). Most of the studies evaluate the QL in short periods of time, normally within the first year after the diagnosis. The data which are related to the QL are mostly related to the patient (age, sex, co-morbidity, etc), the tumour (location and size), and the treatment (surgical treatment, radiotherapy association, reconstruction, cervical dissection, and/or feeding tube). Nowadays, the assessment of the QL is considered as an essential component of an oral cancer patient, as well as of the survival, morbidity and the years which are free of disease. Although many aspects which are related to the QL in oral cancer patients have been published throughout the past 10 years, more systematic research is needed to be able to apply it on a daily basis.

INTRODUCTION

The surgical treatment for cancer of the oral cavity has an important effect on the quality of life, which has been defined as the perceived discrepancy between the actual status and the ideal standard of the patient [1]. From the time of the diagnosis, the quality of life for every cancer patient and survivor is affected in some way or the other. The American Cancer Society has identified 4 quality of life factors that affect cancer patients and their families. These factors are social, psychological, physical and spiritual. Aesthetics and functional sequelae which are caused by surgical incisions and cancer resections, which are often associated with pre or post operative radiotherapy, always modify the patient's self perception and their ability to interact with others in the daily social life. While the body scars and alterations are usually hidden during the social activities, and dramatic situations such as a permanent colostomy or a vascular shunt for dialysis can be easily managed in public, the head and neck cancer patients cannot hide the post treatment functional changes and they must therefore, deal with the subsequent negative impact on their self-esteem and confidence in all the realms [2].

This study aimed at evaluating the changes in the quality of life from the pre-operative levels during the 12 month post-operative period by using specific questionnaires of well known acceptability, responsiveness, and validity, with a social emphasis and domains such as chewing, swallowing, speech, and disfigurement. Moreover, the impact on the quality of life of different factors such as gender, mandibular and tongue resection, pre and post-operative radiotherapy and the type of reconstruction was statistically evaluated.

Key Words: Quality of Life, Oral Cancer, Oral Cavity

ROLE OF THE PRETREATMENT ORAL CARE

A thorough oral evaluation by a knowledgeable dentist before the cancer treatment begins is important for the success of the regimen. The pretreatment oral care achieves the following:

- It reduces the risk and the severity of the oral complications.
- It allows a prompt identification and treatment of the existing infections or other problems.
- It improves the likelihood for the patient to successfully complete the planned cancer treatment.
- It prevents, eliminates, or reduces the oral pain.
- It minimizes the oral infections that could lead to potentially serious systemic infections.
- It prevents or minimizes the complications that compromise the nutrition.
- It prevents or reduces the later incidence of bone necrosis.
- It preserves or improves the oral health.
- It provides an opportunity for the patient's education about oral hygiene during the cancer therapy.
- It improves the quality of life.
- It decreases the cost of care.

With a pre-treatment oral evaluation, the dental team can identify and treat problems such as infections, fractured teeth or restorations, or periodontal disease that could contribute to oral complications when the cancer therapy begins [3]. The evaluation also establishes the baseline data for comparing the patient's status in the subsequent examinations.

Before starting the treatment, one will need to obtain the patient's cancer diagnosis and treatment plan and their medical history, and dental history. An open communication with the patient's

oncologists is essential to ensure that each provider has the information which is necessary to deliver the best possible care.

EVALUATION

Ideally, a comprehensive oral evaluation should take place a month before the cancer treatment starts, to allow adequate time for recovery from any required invasive dental procedures. The pretreatment evaluation includes a thorough examination of the hard and soft tissues, as well as appropriate radiographs to detect the possible sources of infection and the pathology [4]. Also, the following steps have to be taken before the cancer treatment begins:

- Identify and treat the existing infections, carious and other compromised teeth, and tissue injury or trauma.
- Stabilize or eliminate the potential sites of infection.
- Extract the teeth in the radiation field that are non-restorable or that may pose a future problem, to prevent extraction-induced osteonecrosis later.
- Conduct a prosthodontic evaluation if it is indicated. If a removable prosthesis is worn, make sure that it is clean and well adapted to the tissue. Instruct the patient not to wear the prosthesis during the treatment, if possible; or in the least, not to wear it at night.
- Perform an oral prophylaxis if it is indicated.
- Delay the oral surgical procedures to allow at least 2 weeks for healing before the radiation therapy begins. For the patients who receive the radiation treatment, this is the best time to consider surgical procedures. Oral surgery should be performed at least 7 to 10 days before the patient receives myelosuppressive chemotherapy. A medical consultation is indicated before starting with invasive procedures.
- Remove the orthodontic bands and brackets if highly a stomatotoxic chemotherapy is planned or if the appliances will be in the radiation field.
- Consider extracting the highly mobile primary teeth in children, and the teeth that are expected to exfoliate during the treatment.
- Prescribe an individualized oral hygiene regimen to minimize the oral complications. The patients who undergo head and neck radiation therapy should be instructed on the use of supplemental fluoride.

EDUCATION

Patient education is an integral part of the pre-treatment evaluation and it should include a discussion of the potential oral complications. It is very important that the dental team lay an emphasis on the patient that optimal oral hygiene during the treatment, adequate nutrition, and the avoidance of tobacco and alcohol can prevent or minimize the oral complications. To ensure that the patient fully understands what is required, detailed instructions have to be provided on the specific oral care practices, such as how and when to brush and floss, how to recognize the signs of the complications, and other instructions which are appropriate for the individual. The patients should understand that a good oral care during the cancer treatment contributes to its success.

Advise the patients to:-

- Brush the teeth, gums, and the tongue gently with an extra-soft toothbrush and a fluoride toothpaste after every meal and before bedtime. If the brushing hurts, the bristles have to be softened in warm water.

- Floss the teeth gently every day. If the gums are sore or bleeding, those areas should be avoided but the other teeth should be kept flossed.
- Follow the instructions for using fluoride gel.
- Avoid mouthwashes which contain alcohol.
- Rinse the mouth with a baking soda and a salt solution, followed by a plain water rinse several times a day (use 1/4th teaspoon each of baking soda and salt in 1 quarter of warm water). Avoid salt during mucositis.
- Exercise the jaw muscles three times a day to prevent and treat jaw stiffness which is caused by radiation. Open and close the mouth as far as possible without causing pain; repeat 20 times.
- Avoid candy, gum, and soda unless they are sugar-free.
- Avoid spicy or acidic foods, toothpicks, tobacco products, and alcohol.
- Keep the appointment schedule which is recommended by the dentist.

SUPPLEMENTAL FLUORIDE

Fluoride rinses are not adequate to prevent tooth demineralization. Instead, a high-potency fluoride gel, which is delivered via custom gel-applicator trays, is recommended. Several days before the radiation therapy begins, the patients should start a daily 10-minute application of a 1.1% neutral pH sodium fluoride gel or a 0.4% stannous fluoride (unflavoured) gel [5]. Patients with porcelain crowns or resin or glass ionomer restorations should use a neutral pH fluoride. It should be made sure that the trays cover all the tooth structures without irritating the gingival or the mucosal tissues.

For the patients who are reluctant to use a tray, a high-potency fluoride gel should be brushed on the teeth following the daily brushing and flossing. Either 1.1% neutral pH sodium or 0.4% stannous fluoride gel is recommended, based on the patient's type of dental restorations.

The patients with radiation-induced salivary gland dysfunction must continue lifelong daily fluoride applications.

Instructions for the Patients for Using Supplemental Fluoride:-

If a tray is being used

- Place a thin ribbon of the fluoride gel in each tray.
- Place the trays on the teeth and leave in place for 10 minutes. If the gel oozes out of the tray, you are using too much.
- After 10 minutes, remove the trays and spit out any excess gel. Do not rinse.
- Rinse the applicator trays with water.
- Do not eat or drink for 30 minutes.

If brush-on method is being used

- After brushing with a toothpaste, rinse as usual.
- Place a thin ribbon of gel on the toothbrush.
- Brush for 2 to 3 minutes.
- Spit out any excess gel. Do not rinse.
- Do not eat or drink for 30 minutes.

ORAL CARE DURING THE CANCER TREATMENT

Careful monitoring of the oral health is especially important during the cancer therapy, to prevent, detect, and to treat the complications as soon as possible. When a treatment is necessary, the oncologist

should be consulted before any dental procedure, which includes the dental prophylaxis.

- Examine the soft tissues for inflammation or infection and evaluate them for plaque levels and dental caries.
- Review the oral hygiene and the oral care protocols; prescribe an antimicrobial therapy as indicated.
- Provide recommendations for treating dry mouth and other complications:
 - Sip water frequently.
 - Suck ice chips or sugar-free candy.
 - Chew sugar-free gum.
 - Use a saliva substitute spray or gel or a prescribed saliva stimulant if it is appropriate.
 - Avoid glycerin swabs.
- Take precautions to protect against trauma.
- Provide topical anaesthetics or analgesics for oral pain.

Other factors to remember

Schedule the dental work carefully: If oral surgery is required, allow at least 7 to 10 days of healing before the patient receives myelosuppressive chemotherapy. An elective oral surgery should not be performed for the duration of the radiation treatment [6].

Determine the haematologic status: If the patient is receiving chemotherapy, have the oncology team conduct the blood sample collection 24 hours before the dental treatment to determine whether the patient's platelet count, clotting factors, and absolute neutrophil count are sufficient to recommend an oral treatment .

Postpone the oral surgery or the other oral invasive procedures if:

- The platelet count is less than 75,000/mm³ or if abnormal clotting factors are present.
- The absolute neutrophil count is less than 1,000/mm³ (or consider prophylactic antibiotics).

Consider the oral causes of fever: Fever of unknown origin may be related to an oral infection. It should be remembered that the oral signs of infection or other complications may be altered by immunosuppression which is related to the chemotherapy.

Evaluate the need for an antibiotic prophylaxis: If the patient has a central venous catheter, the oncologist should be consulted, to determine whether any antibiotics are needed before any dental treatment, to prevent endocarditis.

THE FOLLOW-UP ORAL CARE

Chemotherapy

Once all the complications of the chemotherapy have resolved, the patients may be able to resume their normal dental care schedule. However, if the immune function continues to be compromised, the patient's hematologic status should be determined before any dental treatment or surgery is initiated [7]. This is particularly important to remember, for the patients who have undergone stem cell transplantation. The patient should be asked whether he/she had received an intravenous bisphosphonate therapy.

Radiation therapy

Once the patient has completed the head and neck radiation therapy and after the acute oral complications have abated, the patient should be evaluated regularly (every 4 to 8 weeks, for example) for the first 6 months. There after, one can determine a schedule which is based on the patient's needs. However, it should

be kept in mind that the oral complications can continue or emerge long after the radiation therapy has ended [8].

POINTS TO REMEMBER

- A high-dose radiation treatment carries a lifelong risk of xerostomia, dental caries, and osteonecrosis.
- Because of the risk of osteonecrosis, principally in the mandible, the patients should avoid invasive surgical procedures, which include extractions that involve the irradiated bone. If an invasive procedure is required, the use of antibiotics and hyperbaric oxygen therapy before and after the surgery should be considered.
- Lifelong daily fluoride application, good nutrition, and the maintenance of oral hygiene are especially important for the patients with salivary gland dysfunction.
- The dentures would be needed need to be reconstructed if the treatment had altered the oral tissues. Some people can never wear dentures again because of friable tissues and xerostomia.
- The dentists should closely monitor the children who have received radiation to the craniofacial and the dental structures, for abnormal growth and development.
- The dentists should be mindful about the recurrence of malignancies in patients with oral and head and neck cancers, and they should thoroughly examine all the oral mucosal tissues at the recall appointments.

SPECIAL CONSIDERATIONS FOR THE HAEMATOPOIETIC STEM CELL TRANSPLANT PATIENTS

The intensive conditioning regimens of the transplantation can result in pronounced immunosuppression, greatly increasing a patient's risk of mucositis, ulceration, haemorrhage, infection, and xerostomia [9]. The complications begin to resolve when the haematologic status improves. Although the complete blood count and the differential count may be normal, the immunosuppression may last for up to a year after the transplant, along with the risk of infections. Also, the oral cavity and the salivary glands are commonly involved in graft-versus-host disease in the allograft recipients. This can result in mucosal inflammation, ulceration, and xerostomia and so a continued monitoring is necessary [10]. Careful attention to the oral care in the immediate and long-term post-transplant period is important for the patient's overall health.

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