The importance of pretreatment dental assessments in cancer treatment

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In Singapore, an average of 55 people are diagnosed with cancer daily and one in three die from some form of the disease eventually. While treatment for oral cancer, including tongue cancer, is associated with oral surgeons and oncologists working together, few realise that they also have an important role to play in the case of patients with other forms of cancer. These can include nose cancer (nasopharyngeal carcinoma), head and neck cancer, and even breast cancer.

In addition to the oncologist and surgeon, the oral cavity would be part of the patient’s core treatment team. A comprehensive treatment team should consist of a radiologist and medical oncologist, a cancer surgeon, a dental surgeon trained in the clinical care of cancer patients, as well as a maxillofacial prosthodontist.

The importance of obtaining a pretreatment dental assessment and treatment cannot be overemphasised. Many dental problems are silent and they may not cause any clinical symptoms when a person is healthy. When chemotherapy or radiotherapy is indicated for cancer patients, it is important for them to seek a pretreatment dental assessment to identify and address any underlying dental issues (e.g. gingival problems or impacted teeth) that need to be treated prior to commencing cancer treatment. This is because once radiation treatment has started, oral and periodontal surgery may be contra-indicated. The immune system will be significantly compromised once the patient starts the chemotherapy treatment.

Irradiation also places the patient at high risk of treatment-related complications, such as xerostomia (dry mouth syndrome), oral infections, oral muscle fibrosis, and osteoradionecrosis. Currently, the use of intravenous bisphosphonate-based chemotherapeutic agents is becoming more common. Bisphosphonate is effective in chemotherapy and it essentially slows down bone remodelling. As a result, the bone healing capacity is compromised. A simple dental extraction after the use of bisphosphonate medication may result in bone necrosis that lasts for months, a condition that is complicated and difficult to treat.

The oral cavity contains a myriad of bacteria at any given time, even if a person is perfectly healthy. Many of the normal oral flora cause no symptoms; however, bacteria and fungi in the mouth may develop into an infection when the immune system is not working well or when white blood cell counts are low.

Irradiated tissues can thin and waste away, causing sores in the mouth (ulcerative oral mucositis) in the atrophic mucosa. Such complications can result in a significant reduction in the patient’s quality of life and even death. It is also estimated to 54% of the causative organisms in cancer patients’ deaths are from the oral cavity. Therefore, it is imperative for cancer patients to have a thorough dental check-up, a good cleaning by the dentist and problematic areas treated prior to cancer treatment. The bacteria in the mouth are likely to enter the bloodstream, thus increasing the risk of infection for those with compromised immunity due to cancer treatment.

In the healthy mouth, saliva balances the pH value of the mouth. Since irradiated salivary glands produce very little or no saliva, acids in the mouth can take advantage and attack the teeth post-treatment. This greatly increases the risk of dental caries, which in healthy subjects may take years to reach the pulp. When xeroradiation, patients commonly develop multiple dental caries that may reach the dental pulp in just a few months.

Undergoing a dental assessment before, during and after cancer treatment is a step that can help save much costs, pain and psychological trauma for the patient. It is also helpful to medical specialists, as they will be able to manage their cancer patients more smoothly.

Pretreatment dental assessment

It would be ideal to allow for a week of recovery from any required surgical dental procedures. Typically, the dentist will go over the patient’s medical history and review the radiographs of the patient. He or she will also conduct a physical examination of the dentition and hard and soft tissue in the patient’s jaw and mouth for abnormal swelling, lesion or evidence of chronic or acute
dental infection. The dentist should discuss with the patient’s core treatment team all the treatment options and timelines in conjunction with the schedule of upcoming major surgery or cancer treatment. It is essential to be familiar with various radiation, chemotherapy and surgical treatment protocols. Crucial pretreatment assessment will be performed in such a way as to minimise downtime and to keep as close to the originally scheduled medical treatment as far as possible.

The initial pretreatment assessment consultation should take under one hour. If there are no pre-existing dental conditions that need to be addressed before the major surgery or cancer treatment, the follow-up may be performed after medical treatment has been completed. In the event that dental treatment is required before the major surgery or cancer treatment, this should be done in a timely manner and with the patient’s best interests and comfort in mind.

The pretreatment dental procedures should ideally be performed by a dental team with experience in the management of cancer patients. For instance, routine dental procedures such as extractions should be approached carefully in the case of cancer patients, mainly because the bone quality of cancer patients may be altered by previous chemotherapy or radiation, as these treatments may significantly slow down or stunt the growth of new bone cells. The dentist should identify teeth with a guarded or poor prognosis and have those teeth removed atraumatically prior to the initiation of cancer treatment owing to the slower healing process in wound sites after extraction. In some cases, the bone around the infection area may turn necrotic (also known as osteoradionecrosis).

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Post-treatment oral care

After the cancer episode is over, a patient’s general health condition may be still weaker than that of a healthy person. Therefore, it is important for the patient and any attending dentist to have comprehensive dental records about the patient’s medical history before new dental procedures are considered. For example, the effects of intravenous bisphosphonate treatment and radiation therapy commonly last for years, and the risk of postoperative bone necrosis should never be overlooked.

Continuous post-treatment oral care is critical in the prevention or reduction of the incidence and severity of oral complications. Even though side-effects of cancer treatment may not be life-threatening, they can greatly affect the patient’s quality of life. Hence, it is crucial to help patients manage and obtain relief from side-effects such as mucositis, xerostomia, dental caries, osteoradionecrosis and trismus. Since the immune system is suppressed, any type of infection could be serious. Diligent lifelong personal oral health care and frequent dental recall appointments are recommended.

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