

Radiotherapy (Head and Neck Region)

I. Introduction

Radiotherapy involves the use of high-energy X-rays or electron beams to destroy the tumour while trying to preserve normal tissues as far as possible. Although X-rays also affect normal cells in the area treated, their ability to recover is usually better than that of tumour cells.

II. Procedure

- You will not experience any pain during the treatment procedure.
- Before each session, our medical staff will make sure that you are in the correct position for treatment.
- You will then stay in the treatment room alone for a few minutes while radiotherapy is being delivered.
- You will be closely monitored through a closed-circuit television system. You can speak to us using the intercom if necessary.

III. Risks and Side Effects

- Although radiotherapy is an effective treatment for your disease, it can cause short-term and long-term side effects. Our medical and nursing staff will offer appropriate treatment to help you complete the course of radiotherapy.
- Some of the common and potentially severe side effects are discussed below. Each patient reacts differently and may experience none, some, or all of the complications to a varying degree of severity. If other types of treatment such as chemotherapy are given in conjunction with radiotherapy, some of the side effects may be exacerbated. Complications are also more common in patients who have had previous surgery/radiotherapy in the area being currently treated with radiotherapy.

A. Short-Term Side Effects

Depending on the site and dose of irradiation, the following side effects may occur during radiotherapy, but usually disappear several weeks after the completion of treatment.

Common

1. Tiredness, nausea, loss of appetite.
2. Skin redness, dryness, irritation or darkening (like sun burn) in the treated area. Sore or blisters may develop in some area.
3. Hair loss in the irradiated area and re-growth occurs after treatment.

4. Inflammation of mucosa of mouth and throat may lead to sore throat, hoarseness, dry cough or difficulty in swallowing with easy choking and risk of aspiration chest infection.
5. Dry mouth, thickening of saliva.
6. Change or loss of taste.
7. If the nose or paranasal sinuses are in the radiation field, you may have nasal stuffiness, discharge and sometimes bleeding, changes or temporary loss of smell sensation.
8. If the ears are in the radiation field, you may have irritation or inflammation of the ears.
9. If the eyes are in the radiation field, you may have irritation, pain or inflammation of the eyes.

Uncommon

1. Severe pain and difficulty in swallowing that requires temporary tube feeding or admission for further management.
2. If larynx (voice box) is in the radiation field, you may have difficulty in breathing and even stridor in severe cases.
3. Swelling and/or pain in parotid area (near the angle of jaw). This usually subsides within a few days.
4. Post-operative radiotherapy may affect wound healing.

B. Long-Term Side Effects

Depending on the site and dose of irradiation, the following side effects may appear several months to several years after radiotherapy and may persist.

General

1. Skin dryness, thickening and colour change.
2. Swelling of the face and / or under the chin. This usually subsides several months after treatment but may persist in some patients.
3. Permanent hair loss in the area treated.
4. Muscle and soft tissue scarring resulting in jaw tightness and neck stiffness.
5. Dry mouth. This may predispose to dental caries and gum inflammation.
6. Permanent change or loss of taste.
7. Narrowing or in-coordination of the food passage causing swallowing problem which may cause chest infection in severe cases. Tube or gastrostomy feeding may be required.
8. Persistent hoarseness.
9. Muscle or nerve damage causing difficulty in speech or swallowing.
10. If the ears are in the radiation field, you may have chronic ear irritation, tinnitus, discharge and / or impaired hearing or even deafness.
11. If the nose or paranasal sinuses are in the radiation field, the nasal passage can be narrowed, the lining of the nose and nasopharynx may be damaged with a tendency to infection and bleeding. Permanent change or loss of smell sensation, chronic or recurrent sinus inflammation may occur.

12. If a high radiation dose is given to the eyes or optic nerve, you may have cataract, dry eye or excessive tearing, ulceration of the cornea, visual impairment or blindness.
13. If the lower neck is in the radiation field, inflammation and scarring of the upper part of the lungs may occur which does not usually cause any symptoms.
14. If the neck is in the radiation field, blood vessels in the neck may become narrowed but not causing any symptoms.
15. Injury to the pituitary gland or thyroid gland may cause hormonal imbalance. Some patients require long-term medication treatment.
16. If the cervical cord is in the radiation field, you may experience electric shock sensation on bending the neck (Lhermitte's Syndrome). This is usually self-limiting and generally does not progress to permanent neurological problems.

Rare

1. If the neck is in the radiation field, severe radiation injury to the laryngeal cartilage resulting in chronic pain, hoarseness, shortness of breath or infection may occur. Surgery may be required.
2. If the neck is in the radiation field, blood vessels in the neck may become narrowed (carotid artery stenosis) which lead to an increased risk of stroke. Arterial pseudoaneurysm may develop.
3. Severe radiation injury to bone, soft tissue or cartilage in the treated area causing chronic pain, infection, ulceration, bone necrosis or bone fracture. Surgery may be required.
4. Fistula formation between the food passage and airway resulting in choking and chest infection.
5. Brainstem, spinal cord or nerve damage causing difficulty in swallowing, speech and/or breathing, loss of strength or feeling in the arms and/or legs, and/or loss of bowel or bladder control.
6. If the brain is in the radiation field, radiation injury to parts of the brain may result in problems with thought processing and/or memory. Some patients may have hallucination, dizziness or epileptic symptoms.

Note:

- Radiation-induced tumours may occur, but this is rare.
- The growth of irradiated areas may be affected in children.
- On rare occasions, patients may develop severe life-threatening complications due to radiotherapy and die.
- It is possible that the intended treatment outcome cannot be achieved, and the disease may not be alleviated or may recur/ progress in the future.
- Despite all precautions, unpredictable and unpreventable adverse outcomes may occur after treatment. Please kindly ensure that you understand the pros and cons of radiotherapy before deciding on undergoing the latter.

IV. Before the Treatment / Preparations Required

1. The treatment plan and radiotherapy schedule depend on the type and location of the tumour, as well as your health condition. Your doctor will discuss the details with you and explain how you can cope with the treatment side effects.
2. Sometimes skin tattooing or a special mould will be required to improve treatment accuracy.
3. Our staff will take written, photographic and radiographic records of your treatment for radiotherapy planning and future reference. These records may be used for research or scientific publications but your confidentiality will be maintained at all times.
4. Avoid applying ointment or cream on the area treated before attending your radiotherapy session. No other preparation is required unless specific instructions have been given by our staff.

Note:

- **Radiotherapy can cause teratogenicity (i.e. lead to abnormal fetal development). During radiotherapy, both male and female patients (if applicable) should use an effective method of contraception.**
- **Radiotherapy may affect the function of your pacemaker. Please let us know if you have a cardiac pacemaker.**

V. After the Treatment

1. You may feel tired or experience other side effects of radiotherapy. Please consider having a friend or relative accompanying you to the hospital if possible.
2. Our doctors will assess you on a regular basis and take appropriate measures to minimise your side effects.
3. If you feel unwell during the treatment period, please inform our staff.

VI. Follow-up

1. The time taken for recovery varies from person to person, some people can go back to work shortly after the completion of treatment.
2. After completing the whole course of radiotherapy, a follow-up appointment will be arranged to assess your response to treatment and to look out for complications. Please attend your appointment as scheduled.
3. Please ensure that you follow precisely the instructions given to you regarding medications (if applicable).

VII. Remarks

The list of complications is not exhaustive and other unforeseen complications may occasionally occur. The risk of some complications may actually be higher for certain patient groups. For further information, please contact your doctor.