Radiotherapy (Thorax)

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 region 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 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

These may occur during radiotherapy, but usually disappear several weeks after the completion of treatment.

Common

1. Tiredness, nausea and decreased appetite.
2. Skin dryness, reddening, irritation or darkening in the area treated.
3. Temporary hair loss in the area treated.

4. Irritation of the airway linings leading to dry cough.
5. If the neck or oesophagus is in the radiation field: Inflammation of the throat and/or oesophagus causing pain and difficulty in swallowing.

Uncommon

1. Symptoms caused by the tumour may worsen during the first few days of radiotherapy. This may be caused by transient swelling of the tumour and surrounding tissue with radiotherapy and will usually improve with appropriate treatment. Some patients continue to deteriorate despite radiotherapy. This is mainly due to tumour progression and lack of response to radiation, rather than radiotherapy itself.
2. Postoperative irradiation: Impaired wound healing.

Rare

1. Skin blistering or peeling.
2. Drop in blood counts which increases the chance of infection and bleeding. This usually occurs only in patients where a large area is being treated, and is more common in those who are also receiving chemotherapy.
3. If the liver is in the radiation field: Liver damage causing transient impairment in liver function.
4. If the stomach is in the radiation field: Inflammation of the stomach causing indigestion, heartburn or ulcer.

B. Long-Term Side Effects

These may appear several months to several years after radiotherapy and may persist.

Common

1. Skin dryness, thickening and colour change in the area treated.
2. Lung inflammation and scarring, which may cause dry cough, shortness of breath and/or low grade fever.

Uncommon

1. Permanent hair loss in the area treated.
2. Scarring and stiffness of muscle and soft tissue in the area treated.
3. Rib fracture, which does not usually cause any symptoms.
4. If a high radiation dose is given to the oesophagus: Ulceration or narrowing of the oesophagus causing problems with swallowing. Surgery may be required in the most severe cases.
5. If the tumour is located between the oesophagus and airway: Fistula between

the oesophagus and airway resulting in choking, chest infection and/or bleeding.

6. If the neck is in the radiation field: Injury to the thyroid gland causing hormonal imbalance. Some patients require long-term drug treatment.

Rare

1. Spinal cord or nerve damage causing pain, loss of strength or feeling in the arms and/or legs, and/or loss of bowel or bladder control.
2. Severe radiation injury to bone or soft tissue in the treated area causing chronic pain, infection or ulceration. Surgery may be required.
3. If a high radiation dose is given to the heart: Heart problems such as irregular heart beats, ischaemic heart disease, inflammation and impairment of heart function.
4. If a high radiation dose is given to the liver: Liver damage causing prolonged impairment in liver function.
5. If a high radiation dose is given to the stomach: Stomach injury with persistent indigestion, pain, ulceration and sometimes bleeding.

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 with 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.