



Service Priorities and Programmes
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Improve efficiency for radiation treatment of head and neck cancer through availability of modified fixation device for treatment immobilization.

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Introduction

Radiation therapy (RT) is one of the main treatment modalities for head and neck cancer. Immobilization is very important for treatment accuracy and reproducibility. Immobilization device for head and neck RT include a thermoplastic shell which captured the patient's head and neck shape, a Alpha cradle, baseplate, and L-profiles which used for fixing the thermoplastic shell on to the baseplate. Multidisciplinary therapy may be used and have proven to improve the control rate of head and neck cancer. Chemo-radiotherapy is one of the common treatment choice to be used. They are either the sequential administration of chemotherapy agent and radiation or the concomitant delivery of Cisplatin and radiotherapy (Gianmauro N et. al.). For some concurrent chemo-RT regime, pre -hydration is needed for patient, which may cause slightly swelling at the head and neck region. This will increase difficulty in fitting the thermoplastic shell on to the base- plate. Moreover, patient may not able to tolerant for the daily treatment if the fitting of cast is too tight.

Objectives

To improve efficiency for radiation treatment of head and neck cancer by using modified fixation device for treatment immobilization.

Methodology

1.additional "modified" L-profiles (using for fixing the thermoplastic shell on to the base-plate) are made to tackle the problem. 2.the L-profiles are made to provide a 3mm anterior-posterior clearance. Such dimension has been chosen, which is comparable to the set-up tolerance for head and neck cases. 3.Once the modified L-profiles had been used for immobilization, pre-treatment positioning verification using electronic imaging device (EPID) or Cone beam X-ray is a must, 4. number of head and neck cases having chemo-RT with the use of original or with modified L profile are recorded from Jan 2013 to Jan 2014. 5. the set-up error using the original and the modified L-profile will be recorded and compared. 6. record any delay for the chemo-RT treatment.

Result

1. All head and neck cases having chemo-RT and with cast fitting problem due to swelling have used the modified L-profile for immobilization. 2. There is statistically no significant difference between using both profiles for immobilization. 3. All cases can be processed radiotherapy as scheduled. 3. Reduce cast fitting time for those have swelling after pre-hydration, thus facilitate throughput of the treatment units.