



Service Priorities and Programmes
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Implementation of three-dimensional image-guided brachytherapy for cancer of cervix – in line with world standard

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Introduction

Currently, brachytherapy for cancer of cervix is still usually planned in a two-dimensional manner in Hong Kong, despite that various international guidelines on three-dimensional brachytherapy planning for much better tumour and normal tissue delineations have been issued in recent 10 years. Obstacles include resource and manpower limitations, also the CT or MRI machines may not be located in close proximity to brachytherapy rooms so that patients have to be transferred out of brachytherapy rooms to imaging units with brachytherapy applicators in situ and patients awake (while patients are usually put under general/spinal anaesthesia or sedation during applicator insertion). The transferral process can be uncomfortable and embarrassing for patients. It may also carry risk of displacement of applicators which may affect treatment accuracy, and will definitely lengthen total duration of procedure resulting in additional resource implications.

Objectives

To implement three-dimensional image-guided brachytherapy for cancer of cervix in our department.

Methodology

A CT scanner has been installed in the brachytherapy room in our department so that patients can have imagings done in the same room immediately after insertion of applicators while being maintained under anaesthesia/sedation. This not only minimizes patient mobilization thus lowering risk of applicator displacement, but also maximizes patient comfort.

Result

The service was first implemented in mid-December 2013. 15 sessions of three-dimensional image-guided brachytherapy for cancer of cervix have been carried out by mid-April 2014. Initial experience shows that three-dimensional image-guided brachytherapy is feasible in the setting of brachytherapy machine and CT scanner in

the same room, and patients can be kept under general anaesthesia throughout the procedure. Quality of treatment delivered is much improved due to better visualization using CT planning compared with traditional X-ray imagings. Overall procedure time is not much lengthened, extra time mainly due to more detailed planning with the help of three-dimensional images (around 20-25 minutes for X-ray planning and around 1 hour for CT planning, other brachytherapy procedures are the same) thus should not affecting the current waiting time for brachytherapy treatments.