

Purpose: X-ray volume imaging (XVI) in image-guided radiation therapy (IGRT), has been under clinical investigation since July 2003 in a few major hospitals. Only since late 2005 the XVI system is available for the general application. We began using the system immediately. The purpose of this presentation is to demonstrate the usefulness of this cone beam XVI system, in a busy single-machine, stand-alone radiation therapy clinic in routine practices; and the results on some typical clinical applications.

Method and Materials: This clinic has a single accelerator, Elekta Synergy, (Crawley, UK,) with XVI and IView, began clinical application in mid Dec. 2005. In three months, the clinic is currently treating 40 patients daily, with about 30% of the patients receiving IMRT.

Within days of training the staff has already adapt the procedure into clinical use. Within a week, the processing time was reduced to three to four minutes per patient.

We have done 25 patients; 20 patients are still under treatment. The procedure is applied to soft tissue cases in the abdomen; prostate, anal and rectal, head and neck cases.

Results: Statistics of the three-dimensional shift are documented for each daily procedure. Over all experience showed that body procedures, abdomen and pelvis procedures; the range of shift required is from zero to 5 millimeters. For head and neck cases, the shifts are in the range of zero to three millimeters.

Conclusion: Our experience showed that Elekta Synergy, XVI system is relatively easily to apply to the community clinic setting, without too much complication. We hope to gather more experience on the how IGRT improves upon the non-IGRT IMRT procedures.