Abstract ID: 15381  Title: Comprehensive Quality Assurance Program for Accelerated Partial Breast Irradiation Using the SAVI HDR Applicator

Purpose:
To present a comprehensive prescriptive quality assurance (QA) program for Accelerated Partial Breast Irradiation (APBI) using the Cianna Medical SAVI (Strut Adjusted Volume Implant) multi-catheter applicator.

Methods:
We established a robust QA program for the SAVI technique based on our previous experience with various HDR procedures and documentation provided by the manufacturer. During the simulation, the location of the SAVI in relation to the patient’s anatomy is recorded by measuring the distance from the patient’s skin to the SAVI’s hub, by marking the skin and denoting which catheter aligned with the mark, and by taking AP and lateral scout views. A “SAVI Simulation Worksheet” was developed to denote the key measurements during the simulation QA. Our QA process continues with treatment planning. After the plan is reviewed by the physician, the physicist checks the delineation of each catheter and the dose distributions using a developed “Pre-Plan Check Sheet” as a guide. The third set of the major checks is performed prior to each delivery. The SAVI location is verified via repeating the measurements taken during the simulation including the daily images. A therapist and physician sign-off are required. “HDR Treatment Check” is the last key component of the QA flow, which required 3 independent checks of the catheter connections, dwell positions and time, and post-treatment checks.

Results:
10 SAVI patients have been treated using the QA protocol. There was 1 catheter each for 2 patients that were misconnected. This error was detected by the third independent checker.

Conclusions:
We established a robust QA program for the SAVI technique and successfully implemented it for 10 SAVI patients, 100 treatments. We are initiating Failure Modes and Effects Analysis (FMEA) for the SAVI process to better distribute the limited resources and enhance the efficiency and safety of our SAVI program.