Report of Medical Event

Facility Name: Gamma Knife Center of the Pacific
NRC License No. 53-1196602
NRC Event # 45184

Prescribing Physician: Paul DeMare, M.D.

Referring Physician: Todd Thompson, M.D.

Date of event: July 2, 2009

Description of event
A patient was prescribed a gamma knife treatment for the treatment of seven discrete brain metastases. The prescribed dose was 24 Gy to 90% isodose. All seven shots were prescribed to use the 8 mm collimator helmet. After the first two shots were completed, the neurosurgeon noticed that the 18mm collimator had been used instead of the 8 mm collimator. The correct 8 mm collimator was then installed, and the remaining 5 shots were administered according to the treatment plan.

The use of the 18 mm collimator instead of the 8 mm collimator increased the treatment site dose by 3%. The larger collimator caused the volume of each of the two treatment areas to increase by 2.35 cm^3. This additional tissue received a dose of 24 Gy. If the correct collimator had been used, this tissue would have received a dose of approximately 4.3 Gy.

The two treatment sites were located in the right cerebellum.

Cause of event
The previous patient had been treated using the 18 mm collimator. The medical physicist neglected to change the collimator before the next patient. The collimator size was not verified by the radiation oncologist or neurosurgeon, and the first shot was delivered. Since all 7 shots were prescribed to use the same collimator, there should have been no need to change the collimator between shots. The treatment team did not check the collimator size for the next shot. During setup for the third shot, the neurosurgeon identified that the incorrect collimator was installed.

Effect on patient
The radiation oncologist stated that negative sequelae are not expected as a result of the error.

Actions taken to prevent recurrence
On July 6, 2009, a letter was sent to all radiation oncologists and neurosurgeons that perform gamma knife treatments. The letter informed them of the incident, and stressed their responsibility for verifying the set coordinates and collimator size before each shot is delivered.

The Quality Management Program has been modified to require a double-check for all settings listed on the treatment plan. For the double-check, two independent people who did not set coordinate must check it against the treatment plan. After setting the coordinates, the medical physicist and radiation oncologist will initial the appropriate line of the Treatment Record, confirming that the settings match the treatment plan. The Radiation Oncologist will also initial next to the collimator size on the Treatment Plan before each shot to verify that the correct collimator size was confirmed. This procedure will be distributed to all gamma knife staff and physicians.

Patient treatments will be observed during the Radiation Safety Officer's quarterly audits to confirm that the verification procedure is followed.

Patient Notification
The patient was notified immediately after the error was discovered.

Prepared by:

Ronald Frick, M.S., CHP, DABR
Radiation Safety Officer

7/15/09
Date

Reviewed by:

Maurice Nicholson, M.D.
Medical Director

7/15/09
Date

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Gamma Knife Center of the Pacific

Fax

To:	Michelle Hammond - NRC	**From:**	Sean Nicholson, C.F.O
Fax:	817 860-8188	**Pages:**	
Phone:		**Date:**	07/16/09
Re:	Report of Medical Event	**CC:**	

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Mahalo,

Gamma Knife Center of the Pacific