

January 18, 2011

This letter is a follow-up to our recent telephone conversation about the CT Angiography scan ("CTA scan") that you had at Cabell Huntington Hospital. As we discussed, the Hospital has had reports from a few patients who received CTA scans that they experienced certain symptoms that may be connected to the procedure. According to the scientific information we have reviewed, these symptoms should be temporary. According to the information you gave me, you had experienced a "strip of hair loss from one side of your head to the other" which is currently being treated by a dermatologist.

As I explained to you, according to our records you received an elevated radiation exposure during the CTA scan. While the exposure was elevated for this particular type of scan, it was within the range of normal for complex imaging procedures. Regardless of whether you had any symptoms, we believe that it is important that you know about this occurrence and what it may mean for your future health. Because you have received more exposure than is normal for the particular CT scan that you underwent, there is a very slight, minimal increased risk of cancer over your lifetime. Because of that, you may want to help reduce such increased risk by not having unnecessary radiological procedures over the coming year.

To that end, you will find a letter enclosed which you should share with your physician about your radiation exposure. Also, should you need to go to the emergency room in the next twelve months, please provide a copy of the enclosed letter to the emergency department physician. This information will help your physicians make decisions regarding the type of radiology studies you should undergo during the next twelve months.

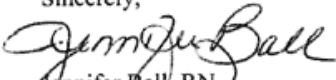
We believe that it is important that you see a physician so that you can get answers to any questions you may have about your current and future health. Likewise, if you have a personal physician, the Hospital will reimburse you for the cost of seeing him/her in connection with your radiation exposure. Please contact me at (304) 526-2613 if you wish to discuss these options. As per our discussion of your current treatment with your dermatologist, please forward any incurred expenses for this treatment and the hospital will reimburse you.

As a responsible and caring hospital, we are committed to providing safe and quality patient care. We are equally committed to providing you with information should issues arise with your care. We are sorry for any worry or inconvenience that we may have caused you, and we want to work with you to address your concerns.

Finally, we want to reassure you that we have taken appropriate steps to ensure that patients receiving CTA scans at Cabell Huntington Hospital will receive the least amount of radiation needed to achieve the medical objectives of the scan. We have brought the equipment manufacturer in to make sure there are no problems with the CT scanner, and we are providing additional training to our staff. We will also evaluate equipment and practices that may offer additional safeguards to our patients.

In closing, please allow me to add a huge "Thank You" for speaking to me today and sharing your other experience while hospitalized here with us in November. It was a pleasure speaking with you. If I can ever be of any further assistance to you please do not hesitate to call. I wish you only the best of experiences when you visit our facility.

Sincerely,


Jennifer Ball, RN
Phone: (304) 526-2613



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January 5, 2011

RE: Radiation Dose Estimate for Patient: . . .

Dear Physician:

This letter is to report the results of a radiation dose estimate for the above patient who received a computed tomography (CT) exam at Cabell Huntington Hospital located in Huntington, WV. The patient received a CT Perfusion/Angiography scan of the head on 11/16/2010. This exam is a complex imaging procedure that involves overlapping CT scans through the head and neck. This dose estimation was performed at the request of Cabell Huntington Hospital in the interest of patient care and the below information is intended to provide healthcare practitioners with potentially useful information.

Dose Estimate

Based on the procedure factors provided, the maximum skin dose from the above procedure(s) is estimated to be approximately 2.51 Gy with an uncertainty factor of 50 percent. Estimation of dose is limited by patient habitus uncertainties and equipment specific parameters.

Dose Effect Thresholds

The thresholds for radiation-induced effects are: 0 - 2 Gy no observable effects expected, 2 - 5 Gy for temporary skin reddening and/or temporary hair loss, and about 7 Gy for permanent partial hair loss. The threshold for a radiation induced progressive cataract is about 2 Gy in a single exposure with the latent period between exposure and the appearance of a lens opacity being about 8 years. The patients eyes are not included in the perfusion or angiography portions of this CT scan. While there is a possibility for an effect at these dose ranges, it is not a certainty. If an effect occurs, it will likely be observed approximately 2 - 4 weeks post procedure and may last for several months. For CT scans of the head, any skin or hair effect would be observed as a bandage-shaped strip around the head.

Radiation Risk

Regardless of radiation exposure, the average overall lifetime risk of *developing* an invasive cancer is 37.5% for women and 44.9% for men. These statistics are averages and do not predict what is going to happen to any individual. They do not take into consideration individual risk factors including lifestyle (smoking, diet, exercise, etc.), family history (genetics) or radiation exposure. The majority of cancers occur later in life and the average lifetime risk of *dying* from cancer is 25%. Based on current ionizing radiation risk data, we estimate the additional cancer risk from this procedure to be approximately 0.5 % with an uncertainty factor of 50 % due to gender, age, size, and organ position patient variations. This is a small increase in risk compared to the normal or natural risk of developing cancer detailed above.

CONCLUSION

Based on the above dose estimate, it appears that there is the possibility of radiation-induced temporary skin reddening and temporary hair loss for this patient. The patient should be advised that skin reddening and hair loss may be observed approximately 2 - 4 weeks post procedure but, if any effect is seen, it should fade with time. No long term effects are expected for this patient. In the interest of minimizing risk, it is recommended that over the next year additional radiological imaging procedures involving relatively high radiation levels (i.e. CT, interventional radiology, and nuclear medicine) be performed only when medically necessary and in consultation with a radiologist.


Additional Resources

Radiation safety and appropriateness criteria information may be found at <http://www.imagewisely.org/>. Clinical information on cutaneous radiation injury may be found on the Center for Disease Control and Prevention (CDC) website at: <http://www.bt.cdc.gov/radiation/crphysicianfactsheet.asp>. Information on Radiation-Emitting Products may be found at <http://www.fda.gov/Radiation-EmittingProducts/RadiationEmittingProductsandProcedures/MedicalImaging/default.htm>.

If we may be of assistance, please do not hesitate to contact us.

Sincerely,

RADIOLOGY INCORPORATED


James T. Norweck, M.S., D.A.B.R.
Certified Medical Physicist