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It is nearly impossible for me to imagine the world without radiology. Not only because this would mean a world without millions of beautiful people whose lives were saved by correct radiological diagnosis and proper treatment. Not only because the world would be without thousands of patients whose health was improved by cancer treatment with the technology of radiation oncology. It is impossible for me to imagine a world without radiology because for me it would mean a world without my future, since the only thing I ever wanted to become was a radiologist.

It all started for me when I was 4 or 5 years old, listening to my mom's stories at our kitchen table. My mom, who works as an ultrasound technologist at one of New York's leading hospitals, would come home after work and share stories helping her patients on a daily basis. She would tell us about scanning thousands of patients with hepatitis C and finding small tumors that later were confirmed by CAT scan or MRI to be malignant. The patients were operated on and their lives were saved. She would explain how ultrasound-guided biopsy would save many women from unnecessary surgeries and physical and emotional scars that come with any invasive procedure.

However, the importance of radiology really struck me when my mom's best friend, who is like an aunt to me, was saved twice by a correct radiological diagnosis. The first time, my mom found a very advanced ectopic pregnancy that was about to rupture and cause a potential infection and serious complications. The second time, my mom spotted a tiny, suspicious-looking mass during her friend's thyroid ultrasound. This ultrasound was necessary because she is from Kiev, which is near the nuclear explosion site of Chernobyl, meaning an increased risk of thyroid cancer. After a radiologist recommended an ultrasound-guided biopsy, it was proven to be cancer at a very early stage, which was caught before it was able to metastasize. Then, I thought, what would the world be without my beautiful aunt? What would the world be without thousands of other people that I could save just by being a radiologist?

Radiology was first introduced to the world through the work of Wilhelm Roentgen in 1895. He investigated emissions that traveled through covered tubes but caused a nearby screen to glow and hypothesized that they were a new kind of ray, invisible, yet able to penetrate solids. Given that he was not sure about how to name these rays, he gave them a variable, X. Only two weeks later, he created the first X-ray image of a human being, which shocked the world. His discovery was so unexpected and revolutionary that Lord Kelvin (the 19th century's most important physicist) called the rays a hoax. Today, we know X-rays not as a prank, but as one of the most important advances in medicine and science. They have been used for X-ray crystallography, which was used to discover

the double-helix structure of DNA, X-ray astronomy, which allowed scientists to discover galaxies and black holes, and, of course, computed tomography (CT), one of the most common x-ray imaging procedures used in hospitals and clinics (Gunderman). CT scans, along with MRI and ultrasound, save patients as well as doctors from unnecessary open surgeries and incorrect diagnoses.

"Before the development of radiology, surgeons would have to cut open the body to see what to take out or change, but now they have an electronically-available image of the exact location and problem for almost every patient before they even step into the theater. Radiation oncology is also a significant advancement that revolutionized cancer research. Neck, breast, cervix, prostate, thyroid, and eye cancer can all be treated with radiation, meaning certain types of cancer no longer equal a death sentence" (Radiation Therapy for Cancer). "While it does not cure cancer completely, radiation therapy is highly effective in reducing the risk of cancer recurrence after surgery or helping the surgery be more successful" (Radiation Therapy and Effectiveness).

The possibilities for the use of radiation in science and medicine are vast and undeniable, so radiology will not be obsolete until another unimaginable discovery is made. For now, radiology should be regarded as one of the most important contributions to medicine, and one of the most impressive contributions to science. This unique expansiveness is just the cherry on the cake for my reasons for wanting to

become a radiologist. Radiology has saved millions of lives and will continue to do so, hopefully with me being a part of its unstoppable wave of preservation. My younger-self was inspired by the work of my mother and her treatment of my aunt, and I set a goal to become a radiologist, knowing I could save thousands of lives with a few more years of hard work and dedication. So, the world without radiology means the world without the future for me, and hopefully, we will never have to live in a world like this.

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