RSNA 2019: Artificial Intelligence as a Positive Influence for Advancement of Radiology

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Commentary

As the 2019 Radiological Society of North America (RSNA) annual meeting approached, I experienced both excitement and trepidation. This would be my 45th meeting. I was looking forward to seeing my long-term professional friends, but I was worried about what I would find at the meeting. During my career, I have witnessed many of the most significant developments in modern radiology. I personally have participated in the development of new radiology subspecialties such as ultrasound and the introduction to radiology of health sciences research and quality improvement. I have presented papers and courses in these areas. I attended the exciting RSNA meetings when CT, MRI and PET scanning were introduced. In recent years, however, I have been saddened by the burnout and dissatisfaction among colleagues and friends. Some years, I came home concerned about the lack of available jobs for radiologists and then worried about the inability to fill openings because of the lack of interested candidates. Some years, I came home acknowledging the challenges to radiology as a result of point-of-care ultrasound and the competition from other specialties. Most importantly, in recent years, I have been disturbed by the lack of major new developments and innovations compared to earlier RSNA meetings I attended. The excitement seemed to be gone.

However, this year an innovative atmosphere and spirit were palpable at the RSNA as a result of the significant presence of artificial intelligence applications. In the past, I have listened as many friends and associates bemoaned computer innovations that only made the radiologist’s work life more stressful with all the necessary steps, clicks, and passwords. Even worse was the fear among practicing radiologists, trainees, and medical students that computers would eventually replace radiologists. In contrast, at RSNA 2019, artificial intelligence was showcased as a tool that can help practicing radiologists efficiently analyze plain films, ultrasound, and CT. A whole floor of commercial entrepreneurs showcased new software applications. It was obvious that a new wave of innovation is underway. If artificial intelligence is developed and used correctly, I believe it could be an antidote for the diagnostic volume overload and lack of control that many radiologists complain about. In artificial intelligence, I saw the means to change the everyday practice of radiology and to restore some freedom to the radiologist’s professional life. New opportunities and applications seem possible and feasible. I felt similar excitement to when I saw my first real-time ultrasound study or when CT and MRI were introduced.

I came away from the 2019 RSNA meeting delighted that I had attended. Because of what I had seen, I envisioned a new era of innovation for radiologists and the possibility of a less stressful form of practice. I saw how nodule detection on chest CT and plain films could help a tired radiologist. I saw applications that measured and graded thyroid nodules, a task that many currently find tedious. I imagined the future when many more applications will be developed, such as liver nodule measurement and assessment. I came home thinking the field of radiology can seize control of its future. It is up to radiologists to imagine how they want to practice and to harness artificial intelligence to achieve those goals. I saw options for radiologists to advocate positively for change and make their needs understood. I came away optimistic for the future of radiology. I came away happy that we have forums such as RSNA where ideas can be exchanged and amplified. The excitement was there again at RSNA 2019.