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EDITORIAL

The Digital Revolution and Its Impact on Interventional Radiology

How will the emergence of the digital revolution affect diagnostic radiology? Many fellow radiologists may fear for their jobs: "Will we be replaced by learning machines, big data analysis, and depersonalized imaging reading?"

While this scenario may seem overblown, there is some certainty that—once again—radiology (and probably all of medicine) will face some drastic changes over the next decade.

It would be naïve to believe that digitization will only affect radiology; but interventional radiology is quite a hands-on profession. Many of us may say that collecting information by angiogram is simple enough and doesn't require machine learning, as it can be done straight away. It is also safe to say that robotic intervention on remote control is something neither patients nor radiologists prefer to see become a standard procedure in interventional treatment.

However, we interventional radiologists need to face the oncoming changes and challenges: Digital image analysis could improve treatment success and follow-up data analysis, which will become an important tool—particularly for interventional oncology. Big data sharing could allow IRs to compile large datasets from everywhere in the world to organize joint research projects, create cloud-based corelab analyses, and organize decentralized trial setups. Numerous opportunities will arise from these developments, and IRs should be eager to involve themselves as soon as possible, if only to continue advancing in the avant-garde environment of endovascular and minimally invasive therapy.

As we know, some diagnostic radiologists are uncomfortable making public appearances and can be shy about contacting or touching patients. There are positives and negatives to this behavior; but now, the risk of separation between the place where imaging data are produced and where the data will be read is even greater. Diagnosis—supported by computed learning machines—may very well be done elsewhere.

Thus, diagnostic radiologists should recognize that their role in radiology depends on clinical presence and hands-on skills. This includes sonography and more specifically interventional procedures for diagnosis and therapy. For the benefit of our common specialty, diagnostic and interventional radiologists should address these issues together to strengthen and invigorate cooperation efforts in this digital age.

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