Radiologist Interview

The PACS as an Integration Platform for AI Solutions

Interview with Prof. Dr. Peter Mildenberger, Senior Physician and IT Officer at the Department of Radiology at Mainz University Medical Center.

Professor Mildenberger, where do you see the potential of artificial intelligence in radiology?

Prof. Dr. Peter Mildenberger: In principle, AI tools already offer many opportunities to improve the quality of diagnostics as well as to allow quantifications that we do not typically make in the data. I can imagine AI systems, for example, in the diagnosis of pulmonary nodules or liver metastases, for the determination of organ volumes or in the analysis of body composition.

How far has AI come today?

Prof. Dr. P. Mildenberger: I do not dare to make a final assessment. We have had experience with some tools, but I don't have a complete overview. There are a lot of systems, and for me the exciting question is which of them will find their way into clinical routine and hold their own there.

What does AI have to offer in order to be accepted in clinical routine?

Prof. Dr. P. Mildenberger: There are various aspects. In the case of pulmonary nodule detection, for example, the practical issue is the number of false-positive findings. Then acceptance certainly stands or falls with seamless integration into the workflow. contextflow enables the automated import of results into the PACS - not as images, but as values. Only when the radiologist has validated this and created his report, however, does the referring physician have access to it. I find it problematic to leave clinicians alone with the results of AI.

How can AI algorithms be brought into the clinics?

Prof. Dr. P. Mildenberger: There are different models. In the end, it depends on how often individual tools are used. Is it worth buying a software solution or should the pay-per-use model be preferred? The latter is certainly attractive if I want to use different algorithms, but not so frequently. The IT infrastructure of the company also plays a decisive role. Here in Mainz, we operate the IT for radiology ourselves and consequently have few problems integrating new software solutions. This is usually quite different in a medium-sized or smaller hospital. It can then make sense to connect a platform and use it to access various algorithms. Before that, however, each institution must clarify whether the use of cloud solutions is an option - something we have rejected in Mainz so far.

What is your experience with AI applications?

Prof. Dr. P. Mildenberger: It is too early to make a general assessment. We have only tried out a fairly small spectrum of applications so far. We lack experience with essential tools, such as for detecting fractures or pulmonary embolisms. We certainly have the most comprehensive experience with pulmonary nodules. We don't have this fixed in the workflow, but when a colleague has looked at his lung CT, the AI takes a second look at each image. That's quite interesting and sometimes helpful.

What is your AI strategy?

Prof. Dr. P. Mildenberger: We rely on Sectra's image data management and use the PACS as a facility-wide platform. Specifically for CT and MRI image processing, we use syngo.via from Siemens Healthineers. Any AI tools we acquire must integrate with these platforms, i.e., accept information and transmit results back.
Right now, we are looking at identifying modules that we want to use in the future. For the neuroradiologists, these could be systems for MS diseases; we radiologists primarily see support for pulmonary embolisms as well as prostate and breast MRI. We will look at appropriate modules for the respective clinical applications, then decide individually and buy the solution. I still don't see a platform solution for us.

Thank you very much for the informative discussion, Professor Mildenberger.