

Can enhancing the MRI in-bore experience reduce the need for patient sedation?

By Dr J. Kesseböhmer

During an MRI scan a patient has to lie still, all alone in the bore of the MRI scanner for often as much as 20 to 45 minutes, depending on the indication.

We found in our practice that a focus on improving this “in-bore” experience helps us increase patient satisfaction and reduce the need for sedation.

The capabilities of MRI are remarkable, providing insights that no other commonly used imaging technology can offer and making it an invaluable tool in diagnosing a broad range of conditions.

However, for patients, MRI exams can be long, stressful, noisy, anxiety-filled experiences, making it sometimes hard to complete the procedures appropriately. Particularly for patients who are anxious, restless or in pain, it is difficult to remain still during scans, thus increasing the likelihood of in-bore movement. This movement can lead to motion artifacts in the images, which therefore require rescans or even exam cancellations. We then often have to plan a new MRI examination that incorporates the administration of sedation to relax the patient.

Sedation is a commonly used approach to allow patients to undergo an MRI examination without major patient movement. In our practice, we see three scenarios of patients needing sedation for a successful MRI examination:

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for patients with a history of requiring sedation, we know beforehand that they will need it and so are prepared; secondly, there is a group of patients who get very anxious upon entering the MRI room. They are offered sedation right at that moment. A third, and fortunately small, group are patients who actually start a scan but then appear incapable of completing it.

The need to sedate patients can pose significant operational disruptions and administrative burdens for imaging centers. Evaluating whether a patient needs seda-



With the Philips Ambient Experience patient in-bore solution for MR, engaging visuals are displayed on the back wall and can be seen via a mirror on the head coil, while patients can listen to music/sound through the headphones.

tion takes time, as well as the additional handling and constant monitoring, needed because of the risk of respiratory depression. For the patient, there are also practical considerations, such as dizziness, nausea and the advice/requirement not to drive directly after their MRI exam. These factors can negatively affect both the patient and staff experience, and raise costs.

Patient satisfaction has always been a priority at our practice, in Lübeck, Germany, with our patients



Anxiety before or during an MRI examination can lead to reduced diagnostic accuracy, aborting of the scan and unwillingness to undergo another MRI examination in the future.

accustomed to having a high degree of comfort during scans. When our practice made the decision to purchase a new MRI system, we wanted to continue to provide at least the same high level of patient comfort for which we

are known and we wanted our new system to be a clear differentiator from other practices in the area.

We purchased the Philips Ingenia 1.5T S with its in-bore solution to adhere to our high standard of patient comfort. The room lighting and the in-bore experience provide a relaxing environment through an immersive video experience during the scan, that we expected to enhance patient comfort and cooperation, as well as improve workflow.

Like other practices, we had accepted sedation as an unavoidable aspect of reaching a definitive diagnosis in certain cases. However, we understood the value of Philips' Ingenia solution in providing a relaxing environment and we believed we could have a measur-

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able impact on patient anxiety due to the distracting nature of the in-bore solution.

Six months after installing the system, we conducted a retrospective survey on patient experience,

and also reviewed practice data. Those retrospective preliminary data suggested that we were using much less anxiolytic and sedative medication for patients in the Ingenia MRI system with in-bore solution.

We then decided to conduct a study to compare the Philips Ingenia 1.5T S with MRI In-Bore Experience with our institution's two short-bore 1.5T systems. All three systems had a 70 cm wide bore diameter.

Using the need for anxiolytics as an indicator of the anxiety experienced by the patient during the exams in each system, we initiated a study to confirm our retrospective observation that the Philips system would decrease patient anxiety. We scanned more than five hundred patients during a five-week period, and found a significantly lower need for sedation among patients scanned with the Philips system. The number of patients requiring sedation while being scanned with the Philips MRI In-Bore Experience decreased by 80% versus the average of the two short-bore systems [1]. We discovered that our patients were calmer and more compliant when scanned using the Philips MRI In-Bore Experience, in addition to an observed improvement in our already generally low cancellation rates.

What's most exciting for us, collectively as a practice and as individual radiologists, is seeing how continued innovation helps us maintain and improve the patient experience.

We now know that use of anxiolytics is not an inevitability in MRI and this is great news for our patients.

REFERENCES:

1. 2017 case study in Radiologisches Zentrum am Kaufhof, Lübeck, Germany (n=583).

DISCLAIMER

Results represent a case study performed at single location. Results from case studies are not predictive of results in other cases. Results in other cases may vary.

The tranquilizer referred to is the valium-based derivative "Diazepam".



A calming, comfortable patient experience can lead to a smoother exam and increased patient satisfaction.