A Case-Based Approach to RF Coils: Tips, Tricks, Myths & Artefacts

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RF coils have always been a crucial component in MRI as they are responsible for the reception of signal during imaging and are therefore one of the primary determinants of image quality and signal to noise. The relatively recent introduction of technologies like parallel MRI has increased the importance of RF coil arrays, as the arrays themselves are now also at least partially responsible for the formation of the image. Knowing how to make the best use of coils and coil arrays is therefore vital to successful imaging and optimizing image quality. It is also vital to be able to identify problems caused either by malfunction or improper use of RF coils.

We will use case studies to illustrate the trade-offs that must be addressed when selecting coils to be used for imaging, with particular attention paid to the differences between volume coils, surface coils and coil arrays. We will also show cases where image artefacts were generated due to improper coil selection, improper use of the coil or coil malfunction. At the end of our talk participants should have a general idea of how to select the proper coil for their application, how best to use that coil for imaging and how to identify if the coil has failed.

Literature