

A rare incidence of metal artifact on MRI

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Submitted Sep 01, 2016. Accepted for publication Sep 09, 2016.

doi: 10.21037/qims.2016.12.19

View this article at: <http://dx.doi.org/10.21037/qims.2016.12.19>

We present a rare example of metal artifacts observed in magnetic resonance imaging (MRI). A 32-year-old male patient was referred to our radiology department for brain MRI. T1-weighted spin echo, T2-weighted turbo spin echo, diffusion-weighted, and fluid attenuated inversion recovery (FLAIR) images were acquired on a 1.5 Tesla scanner (Magnetom Aera, Siemens Erlangen, Germany). Unusual circular shapes resembling water bubbles were observed at the vertex on the conventional MR images (*Figure 1*). The patient was contacted if he had anything on his head, such as hair gel, etc. during MR imaging. It was found out that the patient was a metal worker who cuts metals and shapes things out of them and there were residual metal dusts on his scalp despite he had a shower before coming to the hospital.

Metal causes artifacts on MR images because they have higher magnetic susceptibility values than human tissue, causing the disruption of magnetic field homogeneity (1). This usually results in signal loss with a rim around the edges and geometrical distortion (arrows on *Figure 1*). The effect is more substantial on gradient echo images (*Figure 1B*) due to lack of inversion radiofrequency pulse as with spin echo images (*Figure 1A,C*). In literature, the reported metal artifacts are mostly the ones due to the implanted metals in human body (2). What we present here is an unusual example.

Acknowledgements

None.

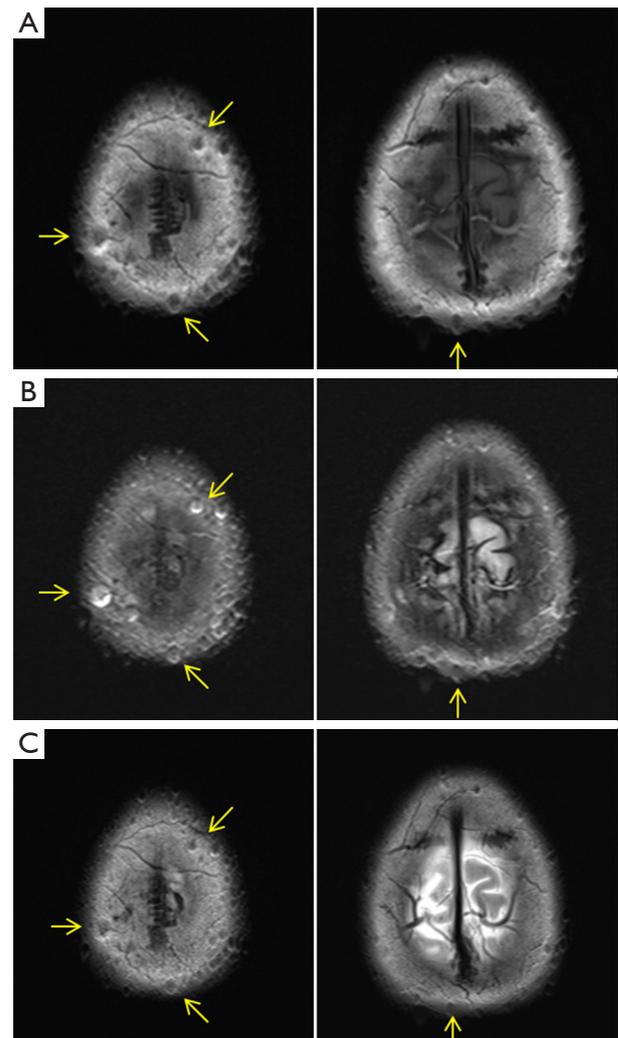


Figure 1 Two consecutive slices from T1-weighted SE (A), FLAIR (B), and T2-weighted TSE (C) acquisition. The arrows point at metal artifacts.

Footnote

Conflicts of Interest: The authors have no conflicts of interest to declare.

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Cite this article as: Senol S, Gumus K. A rare incidence of metal artifact on MRI. *Quant Imaging Med Surg* 2017;7(1):142-143. doi: 10.21037/qims.2016.12.19