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Re: Respirators and surgical facemasks for COVID-19: implications for MRI



Sir—We read with interest the article by Murray *et al.*¹ regarding magnetic resonance imaging (MRI) artefacts, when we encountered artefacts due to facemask worn by a patient.

An adult male patient had come for follow-up MRI brain. After giving informed consent and after denying ferromagnetic materials on his body, the patient underwent MRI wearing a surgical facemask. (The general public had been instructed to wear facemasks because of the COVID pandemic.) After a few sequences, MRI technologists noticed artefacts. They found the metal nose bridge in the facemask worn by the patient, replaced that mask with a mask without a metal nose bridge, and continued the study, repeating only the diffusion-weighted sequence. No artefacts were noted on the rest of the sequences.

Artefacts were noted on the coronal T2, axial T2, axial T2 fluid-attenuated inversion recovery (FLAIR), axial T1 FLAIR, axial 3 D gradient echo (3D GRE; Fig 1a), and axial diffusion (Fig 1b) images in the areas of the nose, eyes, and frontal regions. The artefacts were more noticeable on the right side, as the right side of the mask had been placed more cranially. No artefact was noted on the diffusion image after replacement of the mask. Later a similar mask was radiographed and the metal blade confirmed.

The patient had experienced no discomfort due to the movement of the mask or due to local heating, but the mask had caused significant artefacts on the MRI images. We recommend that patients should be instructed to wear facemasks without metal nose bridges during MRI to avoid such artefacts.

Conflict of interest

The author declares no conflict of interest.

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Udayakumar K R, Asha S, Chitralekha A R, Kumari Indira V K, Sathyalekha S I, Saritha B S (radiographers), Sajan & Sundar (GE), Ajay Rajesh.

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Radiology training in the COVID-19 era: our new normal



Sir—Training has been one of the challenges of the COVID-19 pandemic because of changed caseload, social distancing, and trainee redeployment. The Royal College of Radiologists (RCR) have recognised this with new coding for Annual Review of Competency Progression (ARCP) outcomes.¹

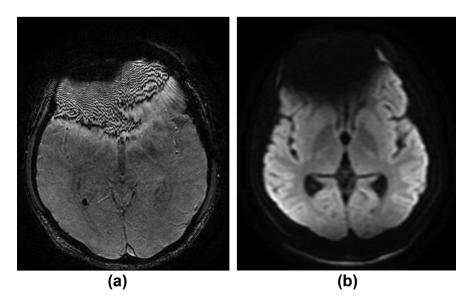


Figure 1 (a) Axial 3D GRE and (b) diffusion-weighted images show artefacts in the frontal regions.

Protecting medical training is crucial, potentially more so in radiology given the workforce shortage.² Departments across the country have risen to this challenge, taking advantage of innovative screen-sharing platforms including Zoom, Microsoft Teams and GotoWebinar, to deliver digital or e-learning. For example, the disrupting effect of COVID-19 accelerated the rollout of Microsoft Teams by NHS Digital.³ Although initially developed for virtual meetings, its value in teaching has been quickly exploited through sharing of presentations, review of cases on picture archiving and communication systems (PACS), and question and answer sessions through the application's chat facility or use of its audio capabilities.

Online learning possesses several advantages, especially at a time when physical distancing is essential. It allows for wide-reaching dissemination of teaching; valuable for Trusts and training programmes spanning multiple sites, and offers greater flexibility through its recording facilities for the learner to access teaching at a time convenient to them. In light of changes to trainee rotas, redeployment and delays to examinations with associated anxieties caused, this has provided a means to maintain regular teaching and encourage cohesion within radiology departments despite the unprecedented circumstances.

Similarly, several national and international organisations have harnessed the potential of online learning as a means to preserve education during this period. Free-toview webinars produced by a variety of organisations, including the RCR, European Society of Radiology, Royal Society of Medicine and Radiopaedia, have proven popular, and social media platforms, such as Instagram and Twitter, have also provided opportunity for educators to share content. Meanwhile, the RCR moved rapidly to provide a comprehensive programme of webinars for ST1 to ST3s enabling a new connectedness for trainees nationally.

With new technologies come limitations. As online learning and screen-sharing applications become more seamless, one must remain mindful of requirements to prevent the inadvertent sharing of sensitive information when teaching. Compared to face-to-face teaching, the response-lag and loss of non-verbal cues mean that a teacher has to work harder to be inclusive and personalised in a live session.⁴ Design of pre-recorded or asynchronous teaching needs to avoid being simply a lecture recording by incorporating active learning and maximising digital

engagement.⁵ In addition, trainees in difficulty might need extra attention to avoid becoming more invisible.

We hope life in radiology departments will return to a new normal promptly, but anticipate that ongoing changes to the environment will not only affect our clinical practice but also our education, including local training, exam preparation courses and congresses. We must capitalise on the swift integration of online learning into radiology education and maintain these positive changes into the post-COVID period.

Conflict of interest

Elizabeth Dick was hosted by Everlight Radiology Ltd in 2019 for remote reporting. Elizabeth Dick donated a £750 honorarium for teaching for Guerbet at ECR 2019 to an ESER/Kenyan Radiology Association travel scholarship.

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