

# USING PHONES CAMERA'S TO FILM A RADIOLOGY SCAN! 13 REASONS WHY IT IS WRONG?

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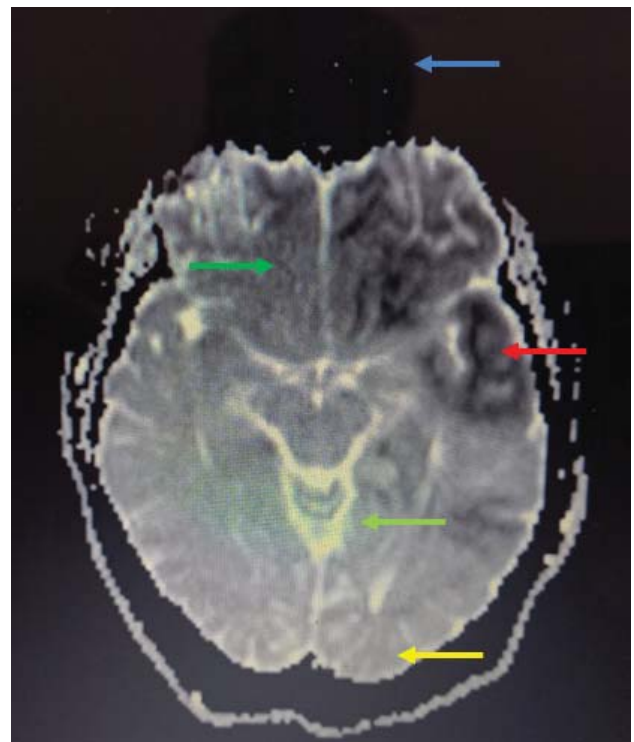
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Many might use their cellphones to image a scan to share with a colleague for a second opinion or a patient take a scan for a second opinion to someone outside the hospital when compact discs (CDs) are not available. But this is wrong on many levels. Here is a list of reasons why using cellphone camera is wrong? The reasons are: 1- the scan will not be clear due to low image quality, 2- size can't be adjusted to see certain details, 3- image brightness will not be able to manipulated, 4- speed of the camera will be slower than the speed of the monitor in cases in stack of images like (CT scan images or MRI scan images) not fast like the human eye, 5- Moiré pattern which basically happens due to the fact the monitors made up of a grid of pixels and the digital photography is a grid of pixels which overlap then make an out of phase distortion which makes black (from far distances) or different colors (red, green, blue, and black (from close distances)) patterns, 6- the monitor generates lights which will reflect on poor image quality, 7- the quality of the phone screen and personal computers monitors(unknown K) are lower than the monitors used in radiology department (4K and more), 8- the angle of the camera on the monitor is a key factor, 9- the monitors which is being imaged could have dust on the monitors, finger prints, or it could be cleaned by a wrong product which leaves marks on the monitors which will affect the image quality, 10- applying filters will change the image details, 11- patient privacy and information could be at risk, 12- the light of the room could reflect on the monitor, 13- the person who is taking the picture, his/her picture can be reflected on the dark monitor, etc.

That's why a CD-R (high quality disc which has a thicker polycarbonate layer which has a total thickness 0.6 mm compare to standard CD 0.5 mm thickness

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**Figure 1:** A phone picture of a brain MRI. The blue arrow is pointing to my reflection on dark part of the image while I was taking the picture, the dark green arrow shows more darker area due to wrong angle of taking the photo, the red arrow shows a brain pathology, the light green arrow shows moiré pattern, the yellow arrow shows more lighter area due to moiré pattern and the wrong angle of taking the picture. Notice that the whole brain picture has low quality and some patterns are seen all over the brain tissues

to be able to copy the data on it (usually sold in a separate plastic box and its more expensive buying many separate CDs in its own CD cases than buying many low quality CDs in one package)). On this high quality disc, the DICOM images are copied to the CD then checked if the copying was done accurately? Then the images can be taken to any physician outside the

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hospital then display the images on a high quality monitor for a second opinion or as a referral.

In conclusion, using phone camera to take pictures of any radiology scan is wrong for the previous mentioned reasons. If the image is a real-time image like ultrasound and it was filmed by a phone camera, then it is even worse! No one should use his/her phone to take any radiology image which could lead to wrong diagnoses and serious complications based on unprofessional practice.