EDITORIAL

Does Anyone Remember "Fingerprints on an X-ray?"

Vincent L. Sorrell, MD, FACP (honorary), FACC, FASE, FSCCT, FSCMR (CASE Editor-in-Chief)
University of Kentucky Gill Heart & Vascular Institute, Lexington, Kentucky

If you said yes, then I suspect your date of birth is prior to 1980 since digital chest x-ray (CXR) has become standard since 2007.[1] However, I assume that many of us still recall looking for "fingerprints," which was an early trick used by trainees to *locate the important finding* on a CXR film.

Physicians looking at a CXR film would often point to a pathologic finding (e.g., a dilated vessel or heart chamber, a pathologic lung mass, or maybe a pneumothorax). Inevitably, they would touch the film leaving an oily residue (editor's note: you all have this on your skin) and often a 'fingerprint' is left behind (kind of like an "*X marks the spot*" for the perceptive trainee or student).

By tilting the film to see *along* its surface, rather than *through* the film via the projected light from the view-box (editor's note: these are still seen in movies and may remain in some workplaces), an astute learner could find the region of interest or maybe the exact finding of importance on the CXR. Even when the fingerprint was not exactly on the spot, it allowed the novice reader to find the smaller section in the larger image on which to focus their attention.

Obviously, this is a very historical concept, and one might question the relevance in today's digital imaging environment. However, as I was reading an echo the other day (#JADEL), I realized that the 'sonographer's fingerprints' were all over the study. As professional Pro(be)-Holders,[2] they are nearly always the first to the scene. They include extra images, zoom images, and freeze-frame measurements liberally during their individualized study acquisition. In doing so, they provide the novice trainee with their own unique *fingerprints* that an astute learner should take full advantage of.

After thinking about this analogy, I recalled the time as a medical student when I was asked by my faculty attending in the medical ICU to read the chest X-ray on a patient with acute shortness-of-breath whom we were discussing. I carefully grabbed the bottom of the CXR film and lifted it up slightly to dutifully peer along the surface as I had seen others do hundreds of times before. I was immediately struck by the incredible number of oily smudges in the left lower lobe region - clearly a sign of some ridiculously important pathologic finding!

I squinted and paused; deliberated and pretended I was seeing this likely eponymous lesion. Then someone finally called my bluff. It was clear I was not looking at the major pathologic finding. At that point, I was shown the large right upper lung field pneumothorax that needed an urgent chest tube.

Whoa! Wait a minute! What just happened, I was asking myself. What a total disaster; my learning tool (aka *hunt for the fingerprints*) completely failed me; let me down bigtime!

What did I learn from that? There are no shortcuts. *Tricks and Tips*[3] are simply what they are stated to be – tricks and tips, not solutions, and sometimes they may deceive you. Nothing beats putting in the time to gain experience and having experts around you who have already gained that experience.

Coming back to the echocardiography lab and the sonographers' *fingerprints*, they may also mislead you and require your careful and collaborative oversight. We work best as a team of sonographers and physicians. (Editor's note: very soon we will need to include artificial intelligence [AI] in that team… but that will be reserved for a future CASE editorial.)

Not too long ago, a very good trainee asked me to look at an atrial myxoma with them. That request was followed by those unenviable words: "*you read it yesterday*!" Of course, with 30-40 echo studies to read in one day, it is certainly possible someone I read yesterday had a myxoma; however, I was certain I had not seen a cardiac tumor the day before. I would have recalled that. Frustrated with myself for missing this important finding, I began wondering if the quality was bad or if I simply read too fast and missed it. I also briefly wondered why the sonographer did not point it out to me (editor's note: urgent and emergent pathologic findings should be directly communicated[4] to the interpreting physician).

Despite my transient distress, I quickly smiled to myself when I sat down in front of the echo review station to see my blunder and sitting in front of me on the screen was a 2.3cm X 1.8cm carefully measured, bi-lobed, dumbbell-shaped atrial mass that was echo-bright and spared the fossa ovalis. The fact that this lipomatous hypertrophy[5] was carefully measured was simply a byproduct of a sonography student who had yet to review images with their senior sonographer mentor. The fact that it was measured – in the eyes of the cardiology trainee – made it pathologic (just like the *fingerprints on my CXR* that led me astray).

So, the moral of this little story? Use all of the information you have but weigh it carefully and avoid overusing any 'tricks.'

In this issue of CASE, you will find an outstanding set of reports that will make you a better echocardiographer. From recognizing deadly echo findings to understanding the role of stress echo in aortic regurgitation; from seeing the vast types of cardiac infections and options for managing these to the utility of bedside POCUS to make a more rapid diagnosis; and, finally, you may even succeed in getting a "Hole and One" in the Congenital Heart Disease section.

P.S. In case you were wondering what happened on that CXR I was asked to read as a medical student? Apparently, as I was later told, there was a large spider crawling across that film earlier in the day that sadly donated its life to provide me that life-lesson!

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