“Chase perfection, catch excellence”

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“The best off-the-cuff comments are those carefully rehearsed in advance” (quotation from J. Kent Trinkle, MD, as told by John Calhoun, MD, December 17, 2011). Whether it is a perfect comment or a well-executed surgery, it does not happen by accident. It requires intentional attention to detail and preparation. As Dearani and colleagues¹ eloquently point out, the cardiothoracic surgeon should integrate imaging and deliberate practice, and include both structure and improvisation, as a means to achieve surgical perfection with the goal of optimizing outcomes.

In 1895, Wilhelm Röntgen first saw the bones of his hand across from an electron beam tube.² Fast forward to today, we are now enjoying computed tomography and magnetic resonance images that allow us to see incredible detail. Three-dimensional printing technology is starting its steep climb of progress. Shanda Blackmon, MD, notes “3D printing of anatomic models for complex surgical cases improves patient and resident education, operative team planning and guides surgical resection.”³ This technology will allow experienced surgeons and learners to prepare for complex surgeries in a way not before possible. It holds the promise of providing a road map before embarking on a journey. Cost continues to be a barrier to wide application at this time.⁴

William Stewart Halsted⁵ introduced key principles of surgery in the late 19th century that hold to this today: gentle handling of tissue, meticulous hemostasis, preservation of blood supply, strict aseptic technique, minimum tension on tissues, accurate tissue apposition, and obliteration of dead space. To relentlessly pursue and truly accomplish each of these principles in every single surgery, it requires deliberate practice. Anders Ericsson, a psychologist and scientific researcher at Florida State University, used this term in his article “Deliberate Practice in the Acquisition of Expert Performance: A General Overview.”⁶ He notes that people believe this because expert performance is qualitatively different from normal performance. The expert performer must be endowed with characteristics qualitatively different from those of normal adults. Joshua Foer⁷ distinguishes between the expert's

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Central Message

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and amateur's path, noting that when most musicians sit down to practice, they play the parts they are good at. Expert musicians tend to focus on the parts that are hard, the parts they haven't yet mastered.⁷ Applicable in surgery, deliberate practice is the key to achieving expertise. “The lesson for expanding our skills is not to let ourselves lapse into easy, automatic action, but instead to work at the edge of our mastery.”⁸

Dearani and associates¹ use jazz musicians to illustrate the wedded concept of “structure and improvisation” in the orchestration of an operation. This is an exciting time in the history of cardiothoracic surgery with the advances in anatomic imaging that can facilitate planning of complex operations. It has the potential to become an expected part of surgical planning and training as the cost comes down and the technology continues to improve. It is each surgeon's duty to engage in deliberate practice. “...We will chase perfection, and we will chase it relentlessly, ... along the way, we shall catch excellence”⁹—the excellence our patients deserve.

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