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Editorial

Why case reports matter

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Our era is undoubtedly the era of "big data." This digitized data is everywhere, but in the practice of arthroplasty surgery this era is most evident in how we commonly learn about surgical outcomes – joint registries, administrative databases, the Centers for Medicare and Medicaid Services' Hospital Compare website. By collating or sampling "big data," the potential bias of anecdotal results is diluted and we come to a realistic "truth" about our patients, their experiences, and outcomes. The value is undisputable, but not without flaw.

On the other end of the spectrum from "big data" is the case report. Case reports are as old as antiquity [1] and are defined as a narrative that describes for medical, scientific or educational purposes, a medical problem experienced by a single patient or a small number of patients [2]. The report usually describes a diagnostic dilemma, a new disease or unusual manifestation of the disease process, unusual treatment challenge, unanticipated early failure, or complication.

Case reports have been important in medicine (the association of thalidomide and birth defects [3]), surgery (the first heart transplant [4]), and orthopaedics (early work on sciatica [5] and arthroiplasty [6]) to name but a few. Case reports not only convey new information, but also may generate hypotheses for future clinical studies, and are an indispensible teaching tool.

The philosopher Immanuel Kant [7] pointed out that the question is often as or more important than the answer in medical observation. Our algorithms for the formulation of evidence based guidelines are only useful if we know what to ask. Although level I evidence (from randomized, controlled, clinical trials) is invaluable in systematic clinical research, a hypothesis must be used to frame the correct question in the design of these expensive research projects. It is the well done case report that is the seed that germinates into this hypothesis. Without that seed, our data bases, registries, and clinical trials can not yield fruit.

Sandhya Pruthi and colleagues, in the *Mayo Clinic Proceedings* [8], highlighted some qualities of physician learners: we like learning from cases, we like practical points that we can use in our practice, and we take pleasure in solving problems. *Arthroplasty Today* will tap into these traits. In addition to focusing on case reports, we will also have a regular feature "Arthroplasty in Patients with Rare Conditions" that will highlight joint replacement in patients with rare underlying condition (usually one percent or less of joint replacement patients). This type of case report is a narrative that describes the unusual treatment challenge of performing an arthroplasty because of the underlying condition. An example is the report of a total hip replacement in a patient with spastic paralysis of the lower extremity. Authors will use such a case to offer key points in the care of similar patients, and will comment on historic and contemporary treatments from the literature, current controversies and future considerations. Our new journal ultimately plans on offering Continuing Medical Education credit through question and answer responses related to the content published. Through these features, *Arthroplasty Today* will utilize the case report to not only present novel ideas and problems, but also to teach.

For these reasons, I submit that case reports will always matter. The art and science of surgery depends on careful observation and communication of our findings. As Dr. Peter Kramer has eloquently argued [9], "Thoughtful doctors consider data, accompanying narrative, plausibility, and, yes, clinical anecdote in their decision making." Although case reports may be considered to be at the bottom of the evidence pyramid, they will always have value. The bottom of a pyramid is, after all, the foundation.

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