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CORR Insights®: Patients Undergoing Total Shoulder Arthroplasty on the Dominant Extremity Attain Greater Postoperative ROM

R. Michael Gross MD

Where Are We Now?

The current study by Cvetanovich and colleagues, which focuses on the effect that hand dominance has on the outcome of total shoulder arthroplasty, is interesting not so much for what it documents, but

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more so for what it implies. This is a well-controlled study in which the demographics and preoperative ROM were identical. Beyond that, it is a single-surgeon study using the same appliance in all cases with the uniform diagnosis of osteoarthritis, and presumably, identical physical therapy orders. With that background, it seems that the question should not be: “Is there a difference in outcome between dominant versus nondominant shoulder following total shoulder arthroplasty?” Instead, we should ask: “Why would there be any difference?” The authors go on to suggest that this information could be useful in terms of preoperative “patient counseling concerning the expected outcome.” Is that a good idea? I believe the answer to these queries might best be found in the book *Outliers* by Malcolm Gladwell [2] and in *Aesop’s fables* [1] rather than the medical literature.

R. M. Gross MD (✉)
GIKK Ortho Specialists, 17030 Lakeside
Hills Plaza Suite 200, Omaha, NE 68130,
USA
e-mail: drgross@gikk.com

But before we get to Gladwell and Aesop, we should discuss patient management. The common approach for total shoulder arthroplasty rehabilitation is to order a “cookbook” program of physical therapy, which is generally identical for everyone. The message seems to be: “If you go to the physical therapist and follow these directions, the therapist will solve your problem.” Is that true? Would we tell our child: “If you go to the piano teacher, you will learn how to play the piano?” The answer of course is no; there is much more to playing a piano than just going to the lessons.

Where Do We Need To Go?

In my view, the subtle message that Cvetanovich and colleagues have uncovered is that patient involvement in their recovery is an important variable in the outcome. I suggest that a surgeon who has accepted the responsibility of putting in the total shoulder also needs to accept that part of his or her responsibility is to educate the patient as to how to recover from that surgery. It is

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important that you spend time both before and after surgery reminding the patient that following the operation “the ball is in his or her court.” Consider this: The mechanical part of the surgical procedure has been a success. Healing is occurring 24 hours a day, 168 hours a week. But working hard in therapy 3 to 5 hours a week (2% to 3% of the week), does not trump the 160+ remaining hours if frequent home exercises are not done. The role of the surgeon or the physical therapist is not so much as a problem solver, but rather primarily as a teacher. What a patient does on his or her own “outside of class” (97% to 98% of each week) will have a great bearing on his or her outcome. This fact is underscored by Malcolm Gladwell in his book *Outliers* [1] where he pointed out that excellence is obtained by repetition more so than by intensity or natural ability—or in this case “dominance versus non-dominance.” Specifically, he stated that 10,000 hours of practice leads to excellence. The message that we have to transmit to our patients is that healing is occurring 24 hours a day, and that means with respect to ROM, the patient is going backwards if he or she is not doing something during many of those healing hours. The significance of this position with respect to the work by Cvetanovich and colleagues is that it seems intuitive to me that any patient would demand more from a dominant versus a nondominant arm, and as a

result, likely do more “outside of physical therapy” with the dominant arm. They would, therefore, have a better outcome.

How Do We Get There?

What this paper implies is that what a patient demands from their shoulder has an important bearing on the outcome. I wholeheartedly agree. It is likely that the modest difference in the ROM between the dominant and nondominant arm identified in this study is an indication of what the patients accomplished outside of their physical therapy. I suggest that it is our responsibility to convey this message in a loving but firm way to our patients. The window to gain motion following a total shoulder is fairly narrow. It is important that our patients not miss this window of opportunity. As surgeons, we must educate our patients on this point or have his or her trained assistant do so. Part of the medical team’s responsibility should be to take time to show simple but effective exercises that require no equipment (the need for equipment is frequently used as an excuse for having not done the exercises). This will allow the patient to work with his or her shoulder frequently, even if just for a minute or two at a time, many times over the course of the day. In Aesop’s “The Hare and the Tortoise” [1], the

tortoise won because of consistency. The same is true with shoulder rehabilitation; frequency trumps intensity every time.

Finally, there is the question of what we should do with this information. Informing a patient that (s)he can expect a greater ROM in a dominant versus a nondominant arm is a risk for disappointment. How many times have we been asked: “Doctor, will I be 100%?” My standard answer is: “Possibly, but that typically is not the outcome, nor is it necessary for you to be 100% in order to be satisfied. The standard that you can hold me to is that I will do my best to make you so much better that you will be thrilled that you had the surgery.” With that response, I rarely have a disappointed patient.

Congratulations to the authors on this very interesting paper; I hope those who read it indeed perceive its underlying subtle but important message. The work underlines an important issue that I have believed for a long time. You can go to piano lessons, but if you do not practice, you will never learn how to play.

References

1. Aesop’s Fables. Available at: <https://www.umass.edu/aesop/fables.php>. Accessed June 23, 2015.
2. Gladwell, M. *Outliers: The Story of Success*. New York, NY: Little, Brown and Company; 2008.