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EDITORIAL

Shoulder and elbow education during COVID19—perspectives from the resident, fellow, and attending level



The current COVID-19 pandemic has impacted citizens of the world in unprecedented ways, with over 2 million cases and over 160,000 deaths worldwide. Although all of us have been impacted directly or indirectly by the virus, our hearts go out to all those impacted first-hand, and certainly to the loved ones of the deceased. As orthopedic surgeons, the pandemic has changed the way we practice medicine temporarily and likely in the foreseeable future. Because of the recent temporary ban on elective (nonurgent/emergent) surgeries, most hospitals, private practices, and academic medical centers have focused on the financial impact of the virus on practice viability and future sustainability.

Although certainly important, an often-overlooked additional consequence of this virus is resident and fellow education, particularly in fields such as orthopedics, and especially in specialties such as shoulder and elbow surgery and sports medicine surgery, as the majority of our patients require procedures that are considered elective. The inability of trainees to participate in surgeries and gain the hands-on training they need at a critical time in their education may have lasting consequences. Nevertheless, both residency and fellowship programs have very rapidly adjusted to continuing education while maintaining social distancing, and these innovative approaches to surgical education are likely to be maintained in the future, even when social distancing measures are (hopefully) reduced. The following sections will describe the educational/teaching experiences of a resident, a fellow, and an attending surgeon over the past month, and their thoughts on the future.

Resident perspective

As residents, we recognize that these are unprecedented times. The COVID-19 pandemic has forever changed us and has created both temporary and likely permanent changes in our health care system. For surgical subspecialties, this has primarily involved the cancelling of all elective surgeries and the conversion of many clinic visits to telephone and electronic encounters. Although these changes are necessary for the protection of our health care system's capacity, the long-term impacts on medical education are unknown.

As a PGY3 Orthopedic Surgery resident at the University of Colorado, COVID-19 has had a drastic impact on my training in recent months. Because all elective cases have been deferred, surgical volume has slowed to a trickle for the foreseeable future. The impact this has on my resident cohort varies based on each individual's rotation. For me personally, it has prevented me from participating in and learning from approximately 45 surgical cases over a 2-month period. Many of these cases would have been in the field of Sports Medicine or Shoulder and Elbow surgery, which are my top fellowship interests. Fortunately, because of the nature of my program, I still expect to meet the minimum case requirements as described by the Accreditation Council for Graduate Medical Education (ACGME). However, the effect of these lost cases on my training is significant. In addition to cancelled elective cases, the majority of clinic visits have been converted to telehealth visits. This, in combination with far fewer inpatient and emergency department consults, means that my hands-on patient experience is currently limited.

Fortunately, this has given my colleagues and me the opportunity to pursue alternative methods of orthopedic training. My program has been able to leverage technology to facilitate telehealth clinic visits, maintain daily fracture conferences, and promote ongoing didactic education in the

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form of virtual journal clubs. In addition, we have plans to implement simulation-based surgical training as soon as nonessential activities are permitted. In an effort to maximize training, my colleagues and I have used this time to focus on expanding our academic orthopedic knowledge and pursue our research interests.

For the time being, we are making the most of this training environment. However, the full impact that COVID-19 will have on our training is unpredictable and will only be determined by how long surgical cases and clinic volumes remain diminished. Although this period is undoubtedly detrimental to medical training, we are ultimately reminded of our true purpose as physicians—to help the sick. Regardless of the trajectory of COVID-19, we are committed to that end.

Fellow perspective

The COVID-19 virus has limited fellowship training for the better part of the months of March and April. Since the ban on “elective” surgeries went into effect in March 2020, the volume of cases being performed by both shoulder and elbow and sports medicine faculty has sharply declined as most procedures in those arenas are considered “elective.” For the most part, surgeries with significant time constraints have been the only cases allowed to proceed (ie, fractures, distal biceps tendon ruptures, locked knees with bucket-handle meniscus tears, etc.). Case volumes for fellows have been limited to, at most, 1 or 2 cases per week as well due to: (1) the overall decreased volume of surgeries being performed, (2) attempts to minimize persons in the operating room to limit the use of personal protective equipment, and (3) the desire to limit the number of person-to-person contacts to limit the potential spread of the virus.

Because of this, hands-on training for the current fellows has been extremely limited since the ban. In an effort to make up for this lost hands-on time, the Orthopedics Department and Fellowship program nearly immediately coordinated increased didactic lectures via video conferencing to continue with education. Weekly indications conferences with case presentations are performed with the topics varying from week to week. In addition, weekly journal club discussions are being hosted via the same method. Previously, these educational sessions were less frequent, due to the volume of clinic/surgery.

Fellows have been filling their increased available time in multiple ways. Although hands-on education has been near absent, fellows have continued their education through the use of online videos from multiple sources (VUMedi, AAOS OVT, etc.). This has allowed the fellows to continue to obtain their surgical “reps” without having to step foot into the operating room. Although online videos cannot come close to replacing hands-on experience, they do allow for some continued learning. In addition, fellows have been

using this time to increase their scholastic and academic activity through research and publications.

Fellows, in particular, have perhaps more concerns than other trainees (students, residents) due to the timing and duration of the COVID-19 pandemic. Unlike most residents, who in general have at least one more year of training (either fellowship for current PGY5s or the remainder of their residency for junior residents), fellows are in the last months of their training. Concerns regarding overall case volume for the year and the time lost are of the utmost importance to fellows. The longer the pandemic continues, the more fellows and other trainees will question what the remainder of their training will look like—currently an unknown factor—with minimal ability to predict not only when we can start elective cases, but when we start, how many we can actually participate in.

In addition, this time of year is generally when most fellows are either finalizing their future employment plans, or by this time have committed to a job already. The pandemic has placed additional stress and apprehension on fellows as it has put most hiring on hold. There have even been reports of fellows who had previously signed or committed to a job offer that has since been rescinded because the practice they were about to join can no longer honor the contract.

The COVID-19 pandemic has been a difficult time for all, regardless of training status. Most programs and trainees are doing what they can to make the best of these challenging times. Adaptations to the new conditions have been essential from both the fellowship leadership and fellows themselves to maximize and continue education.

Attending perspective

The previous sections eloquently describe how COVID19 has impacted surgical training for many orthopedic residents and fellows. From my perspective, as an attending orthopedic surgeon in a teaching program, I echo many of their sentiments. Certainly, providing education to orthopedic surgery residents and fellows can be accomplished via multiple strategies, but hands-on surgical training is of utmost importance, particularly for fellows who will soon be responsible for taking care of patients on their own. Although holding off on elective surgeries to better serve patients truly in need of care for COVID19 and/or life/limb-threatening medical conditions is clearly the right move (and supported without reservation by myself and my co-authors), the downstream impact of this pause in hands-on surgical education is not yet known.

We have made substantial efforts to continue remote learning, including increasing our online conferences both within our institution and with other institutions across the country. This has been one positive take-away from the pandemic, as our residents and fellows are learning from

expert attending faculty around the country, and interacting with residents/fellows from other programs, something they likely would never otherwise have experienced to this level. It has been truly enjoyable to participate in conferences such as our newly created Rocky Mountain Sports Medicine Indications Conference, during which attendings including Drs. Robert Burks, John “JT” Tokish, Matthew Provencher, and Eric McCarty (among others) debate and heckle each other over controversial cases. I hope that this type of multi-fellowship program conference series can continue even when life returns to a more normal schedule.

Nevertheless, I do worry about the anxiety this situation has put on our trainees, particularly our fellows. This is for several reasons. First, thinking back to my own fellowship, which was organized into five 10- to 11-week rotations with 1-2 specific attendings, I would have been devastated to have missed time on any one of those rotations, which would have meant missing out on learning the surgical pearls from that particular attending. Residents often choose fellowships to work with specific attending surgeons, and the current pandemic has likely reduced or eliminated these opportunities in many cases.

As faculty, without elective surgery, we worry about not being able to provide the comprehensive educational experience we aim to give to our fellows, teaching them our surgical pearls and how to avoid complications intra-operatively. In addition, many fellows are likely in a particularly stressful situation with regard to future employment. If a contract has already been signed, it is possible that they may be asked to start later than anticipated due to the unanticipated financial constraints of private practices, academic medical centers, and hospital systems alike. If still seeking a job, in what is already a competitive job market, the opportunities to join a practice/group in the current environment are likely minimal, again due to the unanticipated financial constraints.

For our residents, this is an equally stressful time. Most junior residents are still figuring out which specialty to pursue, and missing time on a given rotation, for example, shoulder/upper-extremity, may unfairly bias them away from this specialty. In addition, around the country, particularly in hard-hit cities such as New York City, many orthopedic residents are being deployed to the emergency department, medical wards, intensive care units, and so on, and may not be entirely confident with their skillsets in these areas, creating additional anxiety.

Overall, I am extremely proud of our residents and fellows here and around the country, as they continue to remain upbeat, optimistic, and above all else, are always willing to help out, however they can. In those few instances over the past month in which I or any of my partners have had to perform an urgent operation, it has been an absolute pleasure to be able to really teach the case step by step, without the typical time constraints of a full operative schedule. In addition, we have all learned, together, how to see patients via telehealth, and I believe this is an aspect of orthopedic surgery and medicine in general that will remain in our practices moving forward, and our residents/fellows will now have excellent skillsets in this area. Throughout this difficult time, residents, fellows, and attending surgeons have been forced to navigate through unexpected territories and face unanticipated challenges. The ability to rapidly adjust to these challenges and continue our educational mission speaks to the overall excellent character and resilience of trainees and faculty alike.

Disclaimer

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