Arthroplasty Today 11 (2021) 54–55

Contents lists available at ScienceDirect

Arthroplasty Today

journal homepage: http://www.arthroplastytoday.org/

Letter to the editor

Letter to the Editor: "Failure to Medically Optimize Before Total Hip Arthroplasty: Which Modifiable Risk Factor Is the Most Dangerous?"

First, thank you to the authors for the very well written and educational article titled, Failure to Medically Optimize Before Total Hip Arthroplasty: Which Modifiable Risk Factor Is the Most Dangerous?

While local complications such as prosthetic joint infection, periprosthetic fracture, aseptic loosening, and hematoma are common, systemic complications after elective total joint arthroplasty (TJA) also occur and include deep venous thrombosis, pulmonary embolism, myocardial infarction, cerebral vascular accident, renal failure, and, although rare, death [1–3]. With continued pressure to decrease complications from both clinical and cost standpoints, surgeons strive to optimize patients before surgery as risk factors for complications are well established [4]. There are risk factors for elective arthroplasty that are nonmodifiable such as age, sex, renal disease, rheumatologic disease, metastatic tumor, peripheral vascular disease, and valvular disease [4–6]. Most nonmodifiable risk factors can at least be optimized before elective arthroplasty; however, these risks continue to be present to some degree.

Documented modifiable risk factors for TJA including diabetes control, elevated basal metabolic index (BMI), smoking or tobacco use, anemia, methicillin-resistant *Staphylococcus aureus* colonization status, and malnutrition [7–10]. The authors of this study reported in a large database that malnutrition, defined as hypoalbuminemia (<3.5), was the strongest risk factor for all complications evaluated [11]. It has been reported that individuals with obesity are at higher risk of complications; however, surgeons often indicate arthroplasty in patients with BMI over 40 for various reasons [12]. While there is debate regarding strict BMI cutoffs, insistence on smoking cessation, preoperative nutritional optimization, and HbA1C limits of 7.7 or less, the decision to offer a patient elective TJA is ultimately made by the surgeon taking into account the patient's entire risk profile and potential benefit of surgery [13,14].

The World Health Organization (WHO) declared the outbreak of COVID-19 a global pandemic on March 11, 2020 [15]. Shortly after this declaration, many countries limited or ceased elective orthopedic cases including TJA [16]. With increased risks of thromboembolic disease associated with COVID-19, and association of increased complications in patients with comorbidities, restarting elective TJA has to be done ethically and responsibly [17,18]. Patients with multiple comorbidities scheduled for elective TJA may be at higher risk of succumbing if infected with COVID-19 perioperatively and may also require inpatient recovery in rehabilitation units or nursing homes, further increasing the risk of transmission [16]. With a demonstrated higher complication rate in COVID-19-positive patients undergoing hip fracture management, these studies highlight the importance of avoiding contraction during the perioperative period of the elective orthopedic surgery [19,20].

With vaccines that may decrease a patient's symptoms or contractibility of COVID-19 and variants of COVID-19 readily available, the following question is now being raised: Is a nonvaccinated status a modifiable risk factor for TJA? Should surgeons offer elective TJA or other major elective hospital-based surgeries to patients without first requiring a COVID vaccine? With surgeons typically having a scheduling delay of at least 4 weeks before elective TJA, the recommendation of a vaccine as a preoperative prerequisite would have little impact on timing of surgery. With current COVID-19 testing protocols ranging within several days of the surgery to same-day testing, this could also decrease cancelations and improve efficient use of health-care resources. Owing to some hospitals now mandating that employees receive the COVID-19 vaccination leading to litigation and staff walkouts, there is the possibility for these large systems and payors to mandate patient vaccinations be done before elective cases which could lead to large disruptions. The answer to how to address this question will undoubtedly not receive unanimity but is currently being asked at local and regional levels and will potentially require orthopedic leadership to further bridge this discussion and research into the outcomes of COVID-19 vaccination status as an independent modifiable risk for arthroplasty and other major elective procedures.

Conflicts of interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this article.

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DOI of original article: https://doi.org/10.1016/j.artd.2021.07.014.

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16 July 2021
Available online xxx