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Perioperative COVID-19 testing for orthopaedic patients: Current evidence

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The recent COVID-19 pandemic has brought the whole world to a standstill, especially affecting the healthcare systems around the globe, with a heavy toll not just on the patients but the healthcare workers as well. The worldwide number of reported cases has crossed 4 million with a further anticipated increase in the contagion.[1]

The illness is caused by the SARS-CoV-2 virus, believed to be of zoonotic origin and transmitted in humans via direct contact, droplets, and through contaminated surfaces.[2] The usual incubation period of the disease is 5–14 days but with reported outliers up to 24 days.[3] It is not just the contagiousness of the COVID-19 but the alarming fatality as well (approximately 3.6%) which far exceeds the other SARS viruses.[1]

The current containment strategy of this unprecedented epidemic is testing and isolation of the suspected cases, limited by the intangible number of asymptomatic carriers. These oblivious asymptomatic carriers, with an estimated prevalence of 5%–80%,[4] are a major concern for the spread of this lethal disease especially in densely populated regions of the developing nations, like India.

As part of the preventive measures, most of the elective orthopedic procedures have been deferred but for the emergent situations like limb or life-threatening injuries, lower limb periarticular injuries, open fractures, timely surgical intervention is paramount. Recently there has been a plethora of publications regarding perioperative management of COVID-19 patients, but there is still a lack of consensus regarding optimal testing strategy for these patients. Through this short communication, we aim to highlight the available evidence concerning the testing for COVID-19 in orthopedic patients requiring surgical intervention in a focused manner:

1. Should all the patients undergoing surgical intervention be tested for COVID?

Concerning the limited availability of the testing kits and the centers performing COVID tests, only symptomatic patients and their contacts, those asymptomatic patients with direct or high-risk contacts with confirmed cases are tested as per the national guidelines.[5] Considering the high prevalence of asymptomatic cases that can still transmit the infection, all patients requiring orthopedic intervention should be assumed to be COVID positive and they should be managed similarly to the COVID patients right from their entry into the hospital to their exit from the hospital during their discharge.

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2. Timing for COVID testing and surgery in symptomatic patients

All symptomatic patients should undergo COVID testing by the reverse transcription-PCR test of the nasopharyngeal or oropharyngeal swabs prior to surgery whenever possible.[8] For emergent surgeries especially limb-saving and life-saving ones, the surgery may be performed prior to the availability of the test report. The test reports may be delayed and can often be falsely-negative and thus cannot be solely relied upon for the COVID status of the patient.[6] The purpose of the testing should not be the change in the perioperative precautions which need to be the same for all patients irrespective of testing status rather it should be done for disease notification purpose and initiation early monitoring, supportive, and therapy measures related to the COVID management. Besides taking appropriate treatment and isolation measures for COVID positive patients, the surgery should be delayed until the achievement of COVID negative status or the recovery of the acute phase of infection when the surgery can not be delayed. Surgery in COVID patients has been associated with exacerbation of the COVID related illness, postoperative ICU requirement, and higher mortality and therefore should be postponed whenever feasible.[7] When postponement of surgery is not feasible, least invasive procedures should be performed to minimize surgical stress.

3. Are preoperative routine tests sufficient?

As per the available evidence, the younger healthy population has higher recovery rates following COVID illness as compared to the elderly population.[8] The younger patients can tolerate the surgery well than the elderly ones.[7] Besides this, there are additional risk factors for contracting COVID illness that include old age, hypertension, diabetes, cerebral vascular disease, cardiovascular disease.[2] Thus elderly patients with age more than 50 years or those with additional risk factors should undergo additional investigations in the form of differential leucocytes count, serum lactate dehydrogenase, coagulation profiles, and computed tomography of the chest.[2] While the blood investigations can predict a subclinical infection, the CT chest findings may pick early changes that although not specific to COVID can alert the surgeon for the need for further evaluation and need for COVID specific testing.[9] To reiterate, the surgery should be delayed as much as possible considering the risk of exacerbation of subclinical COVID illness or the associated comorbidities.[8]

4. Postoperative testing and timing of discharge

All COVID positive patients should be treated by both orthopedic and medical teams under appropriate isolation measures and should be discharged only after a negative report on two consecutive (24 h apart) RT PCR based COVID test.[10] For younger patients, without associated risk factors an early discharge should be preferred considering the risks associated with the hospital stay. For elderly patients and those with additional risk factors, the patients should be discharged only after a notable period of regular monitoring and observation that suggests well-controlled comorbidities.[2,7] The only rationale behind delaying the discharge is to keep such patients under observation and timely management of complications due to comorbid status. Secondly, a large number of preoperatively asymptomatic patients are likely to become symptomatic after surgery[2,7] and thus should be observed for at least a period equivalent to the incubation period of the disease following surgery.

As we write this piece, India is fighting the menace of COVID-19 with a slew of measures like imposition of countrywide lockdown to spread the transmission, ramping up of contact tracing, testing, and isolation facility; healthcare infrastructure has been repurposed and ramped up to fight COVID related illness. With these stringent measures, India has to some extent been able to contain the toll of this disease with cases totaling approximately 25 thousand and around 800 deaths. Commensurate with the development worldwide, elective orthopedic surgeries have also been stopped in most of the orthopedic facilities in our country; however, only absolute emergency patients are getting operated under strict precaution and vigilance. There has undoubtedly been a renewed surge in alternative forms of orthopedic management like conservative treatment. However, we are yet to formulate any concrete guidelines to deal with preoperative patients and perioperative strategy. We are at the dawn of a new era where there will undoubtedly be substantial changes in the post-COVID world; and a pragmatic, rational, and comprehensive guideline will boost our endeavor to serve patients in a safe and efficient way.

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Declaration of competing interest

None of the authors have any conflicts to declare.

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