

## Effects of COVID-19 pandemic in the field of orthopaedics

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Worldwide Coronavirus (COVID-19) has affected the day to day life of people, businesses, manufacturers, and even the healthcare sector. COVID-19 is a virus that spreads from person to person and impacted global life and economies. The primary symptom of this virus is fever, dry cough, breathing problem, chills, bone and muscle pain. No vaccination is available so far, and various drugs have been tried to treat the symptoms. There is a requirement of proper precautions like wearing masks, the use of gloves, and regular hand washing. This COVID-19 has also affected the orthopaedics field by which doctors are not adequately concentrating on their regular patients. With the pandemic, there is a shortage of doctors and support staff and even the ventilators, medicine and other equipment and devices. Researchers identify an alarming shortage of critical orthopaedics devices.<sup>1,2</sup>

Orthopaedics doctors are being redeployed for treating COVID-19 patients. This virus affects the bone and joints of the patient, and there is a requirement of compulsory training to the orthopaedics community to understand the symptoms of this disease. Performing orthopaedics and trauma surgery has become a significant challenge with the non-availability of hospital staff and operation facilities. This disease causes pain to the patient who

becomes incapable of performing day to day functions.<sup>3</sup> It has a significant effect on the manufacturing of orthopaedics implants, tools, instruments and routine ongoing research and development. The significant effects of COVID-19 in the field of orthopaedics are shown in Fig. 1.

Large numbers of examinations of medical students are postponed to restrict the spread of the infection. Classroom teaching is also suspended in almost all medical colleges, and even regular research is also affected. Due to the rapid spread of this virus, international trades have gone down with substantial economic loss and non-availability of goods/raw material in time. There is a disruption of the global supply chain and increasing risk to the life of healthcare workers.<sup>4</sup> The healthcare industry is hugely affected and facing many losses. Even the research and development mission has halted to an extent. The life of patients with musculoskeletal disorders with bone and joint pains is compromised. In the present scenario, there is a requirement of proper health monitoring of disease and precaution. There are some solutions to mitigate the risks from COVID-19, which are as under:

- All orthopaedics related meetings can be conducted online or through audio and video call
- Alert for the health issues of future
- Improvement of the experience and work efficiency of orthopaedics surgeons
- Better protection of hospital staff
- Better supporting for complex cases
- Patient becoming more aware and take extensive precautions

There is a requirement of patient safety at priority and infection control protocols. Some precaution needs to be undertaking, such as close contact, cover mouth, washing of hands, etc. This virus is affecting the daily practice of orthopaedics surgeons. They are forced to cancel their professional visits in remote areas and even in their regular clinics. Those patients who need emergency treatment and admission (like trauma, acute infections and tumors etc.) need to have a minimum required a hospital stay, to avoid the effect of this virus on their systems.<sup>5</sup> In Singapore, all elective, non-urgent procedures requiring >23 h of Hospitalization (e.g., knee and hip arthroplasty, spinal deformity corrections etc.) have been postponed or cancelled.<sup>6</sup> Most of the planned orthopaedics surgery can be safely undertaken at a convenient time and can be rescheduled

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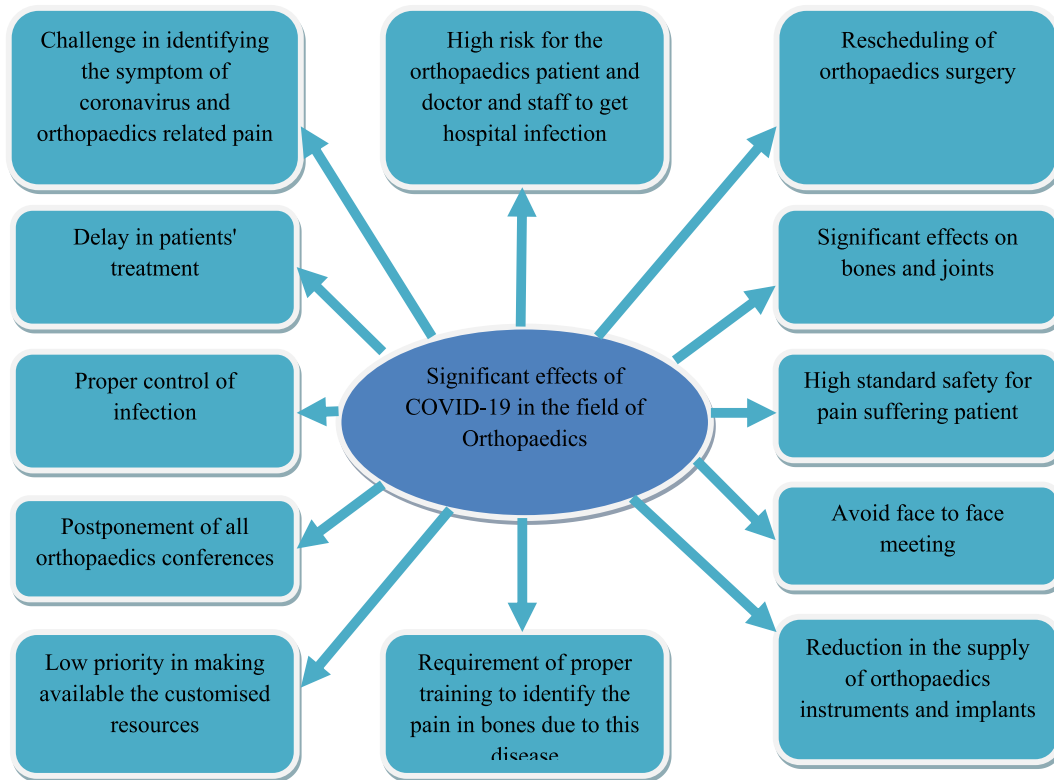


Fig. 1. Significant effects of COVID-19 in the field of Orthopaedics.

for a later period.

During the COVID-19 crisis, there is a need to triage the patients and avoid unnecessary admission related to minor trauma and other ailments. There is also a need for not calling the patients to the hospital as far as possible, for regular check-ups and minor issues. Although non-urgent clinics and surgical procedures need to be postponed until the situation improves, it must be ensured to maintain the quality of care provided to the patients. The emergence of such a crisis provides a timely opportunity for us to reflect and evaluate the use of novel technologies in the workplace.<sup>6</sup> The patients can be counseled using advanced technologies in communication, e.g., Email, Whatsapp, telemedicine, virtual reality, and holography. We are obligated to ensure the overall safety of our patients and also the hospital staff. Recently, the Surgical Royal Colleges of the UK and Ireland have issued guidance for the surgeons working during the COVID-19 pandemic.<sup>7</sup> They have listed the priorities according to the importance of maintaining emergency surgery capabilities, protecting and preserving the surgical workforce, fulfilling alternate surgical roles and fulfillment of alternated non-surgical roles, if required. COVID-19 has presented a significant challenge that is producing large numbers of patients rapidly and the healthcare providers must be geared up to work together to take up this challenge to save humanity, despite putting themselves to a greater risk of acquiring this infection.

On the positive side, there are some advantages that can be derived by the Orthopaedics surgeons from this calamity like de-

stressing themselves, away from the radiation exposure, the opportunity to finish pending jobs like research, and publications, and, most importantly spending quality time with their family.

#### Declaration of competing interest

None.

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