



ARTICLE ON CONTRIBUTION OF DEPARTMENT OF ORTHOPAEDICS DURING COVID 19 PANDEMIC

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ABSTRACT

The corona virus disease 2019 (COVID-19) pandemic has revolutionized global healthcare in an unprecedented way and with unimaginable repercussions. Resource reallocation, socioeconomic confinement and reorganization of production activities are current challenges being faced both at the national and international levels, in a frame of uncertainty and fear. Hospitals have been restructured to provide the best care to COVID-19 patients while adopting preventive strategies not to spread the infection among healthcare providers and patients affected by other diseases. As a consequence, the concepts of urgency and indications for elective treatments have been profoundly reshaped. In addition, several providers have been recruited in COVID-19 departments despite their original occupation, resulting in a profound rearrangement of both inpatient and outpatient care. Orthopaedic daily practice has been significantly affected by the pandemic. Surgical indications have been reformulated, with elective cases being promptly postponed and urgent interventions requiring exceptional attention, especially in suspected or COVID-19+ patients. This has made a strong impact on inpatient management, with the need of a dedicated staff, patient isolation and restrictive visiting hour policies. On the other hand, outpatient visits have been limited to reduce contacts between patients and the hospital personnel, with considerable consequences on post-operative quality of care and the human side of medical practice.

KEYWORDS : Orthopaedic surgery, COVID-19, SARS-CoV-2, Coronavirus, Surgical indication, PPE, Education, Telemedicine, Surgical algorithm, Elective surgery.

INTRODUCTION:

Corona viruses are a group of viruses that mainly affect human beings through animal transmission. It is the third time, the emergence of novel corona virus in last two decades, Severe acute respiratory syndrome (SARS) in 2003, Middle East respiratory syndrome corona virus (MERS-CoV) in 2012 and novel severe acute respiratory syndrome corona virus (SARS-CoV-2)-infected pneumonia (COVID-19). The novel coronavirus first emerged in Wuhan, China in December 2019 from the wet seafood market. COVID-19 was regarded as a public health emergency of international concern in the world by mid-February 2019. The epicentre of the pandemic shifted from Europe to USA from time to time. The number of cases and deaths increased day by day and the infection spread to almost every corner of the world. The hospitals became hot zones for the treatment as well as transmission of COVID-19 due to a rise in the community transmission. Orthopaedic surgeries including both elective and emergency procedures (trauma patients) require operation theatres which are high-risk areas for transmission of COVID-19, risks health care workers contracting this illness and decreasing the resources available to the population of India during this pandemic. The high prevalence of COVID-19, limited resources and staff, increased risks of transmission and the burden on health systems during this pandemic. Despite all this, the Dept of Orthopaedics at Dr. SCGMC Nanded acted immediately to support essential surgical care while protecting patients and staff and conserving valuable resources.

Orthopaedic Patients Expected During Lockdown Period

1. Trauma.
2. History of fall at home, the neck of femur fracture in elderly.
3. History of assault.
4. Severe cervical or lumbar pain.
5. Post-operative cases for wound dressing or suture removal.
6. Postoperative surgical site infections.
7. Elective cases with severe symptoms.

Department Of Orthopaedics Of Dr. Scgmc

According to the motto "Services for humanity" Dr. SCGMC

hospital Nanded established a well equipped covid care centre within a very short period of time during the pandemic.

The Department of Orthopaedics at Dr. Shankarrao Chavan Government Medical college & hospital was started in the year 1991 with a vision to create knowledge, advance learning, and improve the musculoskeletal health of the community.

We aim at providing Highest quality of health care to all -from the poorest to the richest.

Modular OTs

There are three state of the art modular operation theatres equipped with Laminar Air flow, Pendants and LED lights.



Figure 1 Modular OTs

Different Specialty Clinics Provided By Orthopaedic Department

- a) Trauma – Simple & Complex
- b) Joint Replacement Surgeries
- c) Spine Surgery
- d) Arthroscopy
- e) Paediatric Orthopaedics
- f) Orthopaedic Oncology

a) Trauma – Simple & Complex

Long bones of Upper and Lower limbs, Spine & Pelvi-

Acetabular Fractures. High quality Swiss 'AO' systems help stabilize fracture with many Image intensifiers to confirm the perfect fracture fixation.

B) Joint Replacement Surgeries

Hip & Knee Arthroplasty, Total Hip & Knee Replacement is regularly being done in the department.



Figure 2 Trauma

Total Hip replacement is done through anterior approach, so that the chance of dislocation of hip is rare. As a result, patient is able to do daily activity without pain and deformity after surgery.



Figure 3 Total Hip Replacement



Figure 4 Joint Replacement

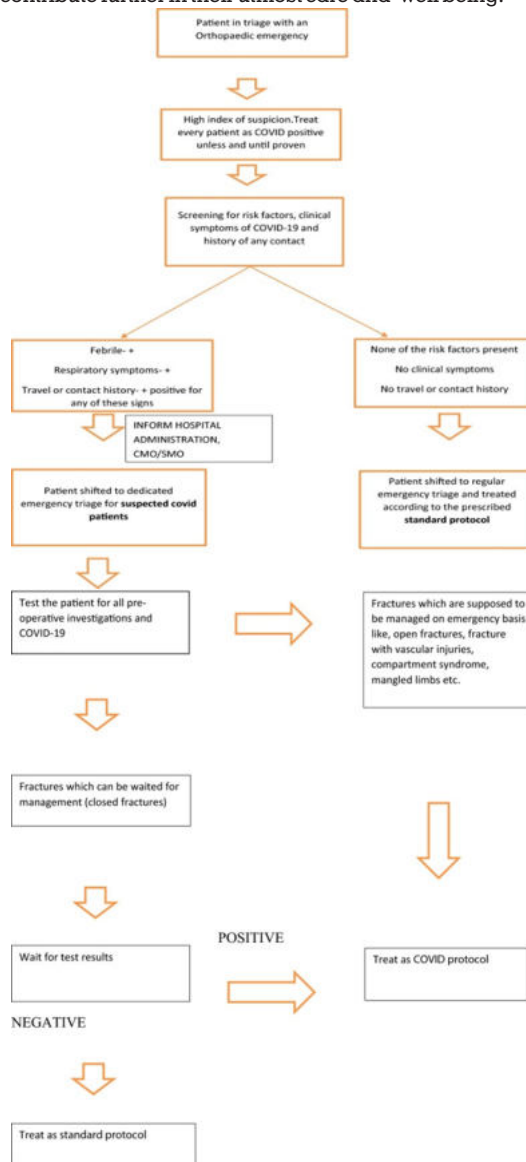
Workload during COVID in the past 1.5 years (FEB 2020 – JUNE 2021) in dept of orthopaedics at Dr.SCGMC, Nanded, Maharashtra, India.

1.	OPD Patients	26656
2.	IPD Patients	2500
3.	Casualty minor procedure count	1307
4.	Total no. of operations done in Ortho OT	2476
5.	Total number of major OT	1169
6.	Total number of Emergency minor OT per month	301
7.	Total no. of covid +ve patients operated after coming swab negative	11

How to Manage Trauma Patient with COVID-19-Like Symptoms? (Having Signs or History of Contact)

Inform hospital administration authority, CMO or SMO. A specialized COVID area in the triage should be ready for COVID-19 patients with trauma. Resuscitate the patient with

primary survey along with splintage of fracture limb. All necessary pre-operative investigations along with COVID19 testing should be done. If possible, get portable X-rays and ultrasound to avoid contamination of the radiology area and it also helps in decreasing movement of COVID patients. For investigations like CT scan or MRI, we have to sterilize the respective area after investigating every patient as per centres for disease control and prevention guidelines. Patients with closed fractures should wait for surgical interventions until the COVID-19 results are out. All cases which need urgent management like an open fracture, vascular injuries, compartment syndrome or mangled limb; we cannot wait until COVID results. These patients should be managed as COVID positive patients and strict precautions should be taken to avoid transmission to caregivers or to other patients. If the results are positive keep the patient in the COVID isolation ward until the results are negative and take the help of the COVID response team of the hospital. If the results are negative shift the patient to the orthopaedic ward and then discharge as early as possible. We depicted these management protocols in our flowchart below. We have postulated guidelines for management of non COVID patients (standard protocol) and COVID positive patients (COVID protocol). All faculties and residents of orthopaedic department were posted regularly and repeatedly in COVID ward situated in hospital block, with non orthopaedic illness, to contribute further in their utmost care and well being.



Standard Protocol

1. Resuscitate patient, rule out all other injuries (Primary survey).
2. High chances of missed injuries in light of COVID suspicion (Secondary survey).
3. Manage conservatively whenever possible.
4. Keep patients in isolation wards. Provide patients and attendants with masks. Minimize patient and attendants' movements. Expedite the process of operation and discharge to lessen the load over the health system. These patients should be attended by separate team surgeons.
5. Maintain a follow up OPD in a separate area for dressing, suture removal and Plaster removal.

Covid Protocol

1. Manage conservatively whenever possible.
2. From the triage area patients (separate allocated area for COVID) should be shifted to the operating room.
3. Strict regulations must be maintained while shifting the patients. Sterilize all things that used while shifting, viz. trolley, lift etc.
4. Maintain a dedicated COVID operating room with trained staff.
5. Preventive measures must be followed at every level.
6. Every effort should be made to minimize the duration of surgery.
7. Decrease blood spilling.
8. Proper disposal of surgical waste.
9. Maintain negative pressure ventilation.
10. Patients have to be shifted to dedicated COVID isolation wards postoperatively and discharged only after COVID results are negative.
11. Care must be taken during the hospital stay to physiotherapy, bedsores and DVT prevention.

DISCUSSION

Patients presented to the emergency triage with an orthopedic emergency such as joint dislocations, compartment syndrome, open fractures, mangled extremity, polytrauma with FESS should be managed according to a specific guideline during global health emergencies like a pandemic of COVID-19. These orthopedic emergencies require effective outpatient, inpatient and surgical care besides avoiding transmission of infection to fellow patients and health care givers. Low- and middle-income countries in Southeast Asia require a standard protocol that can be followed throughout the country with minimum resources available to ease burden over the health care system. There are no guidelines published in the past. Hence, this article can be valuable for the development of a standard universal guidelines for management these emergencies.

Once Patient came positive and was accordingly shifted to covid ward for covid treatment Patient and relatives explained about need of covid treatment first till then fracture managed conservatively. Patient swab was negative and was shifted to orthopaedic ward and kept in isolation for 7 days. After that patient was taken for orthopaedic management. Patient and relatives explained about the prognosis. Some orthopaedic cases operated at our institute are as follow

Case 1

Right closed displaced midshaft femur fracture with right closed displaced humerus shaft fracture at proximal and middle third junction with no distal neurovascular deficit with left closed distal third of tibia closed distal third of tibia displaced fracture with left lateral malleolus undisplaced fracture was managed with

“OPEN REDUCTION AND INTERNAL FIXATION OF RIGHT FEMUR FRACTURE WITH NAILING. ORIF OF RIGHT PROXIMAL THIRD HUMERUS SHAFT FRACTURE WITH RIGHT NAILING”



CASE 2:-

Road traffic accident with 11 days old closed right proximal third shaft of tibia fracture in treated case of covid 19 with no neurovascular deficit.

And Was Managed With:-

“CLOSED REDUCTION INTERNAL FIXATION OF TIBIA SHAFT FRACTURE”



Case 3 :-

A case of self fall with 9 days old closed left displaced trans cervical neck of femur fracture without distal neurovascular deficit.

And Was Managed With

“HEMIARTHROPLASTY FOR LEFT NECK OF FEMUR FRACTURE” .

