



Managing Orthopaedic Care in New Normal Era at East Nusa Tenggara

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ABSTRACT

Until August 2020, more than 23 million cases were confirmed in the world while in Indonesia there were 157,859 confirmed and 112,867 cured cases. East Nusa Tenggara reported 171 cases with 149 recovered and 1 death. The Covid-19 pandemic is still accelerating at an alarming rate; healthcare workers are prone to the infection. In orthopaedic care, there are some major changes in outpatient care and perioperative management. This new regulation also affects patient care as a working hour is limited and some surgical procedures have to be delayed. By strictly adhered to new practices, we hope to achieve the new normal in which orthopaedic surgeons can safely treat emergency and non-emergency patients.

Keywords: Covid-19, new normal, orthopaedic service

ABSTRAK

Terhitung sampai Agustus 2020, terdapat lebih dari 23 juta kasus Covid-19 terkonfirmasi di dunia, sedangkan di Indonesia sebanyak 157.859 kasus terkonfirmasi dengan 112.867 orang sembuh. Di Nusa Tenggara Timur tercatat 171 kasus Covid-19 dengan 149 orang sembuh dan 1 kematian. Angka kejadian Covid-19 terus meningkat, dan petugas pelayanan kesehatan rentan terinfeksi Covid-19. Pelayanan ortopedi baik rawat jalan maupun rawat inap mengalami perubahan bermakna. Regulasi baru terkait pandemi berpengaruh terhadap pelayanan pasien karena jam kerja dan beberapa prosedur operasi harus ditunda. Dengan Adaptasi Kegiatan Baru (AKB), petugas kesehatan diharapkan dapat tetap memberikan pelayanan terbaik dan dokter bedah ortopedi dapat dengan aman merawat pasien darurat dan non-darurat. **Rusdianto IA, Setiawan IMB. Layanan Ortopedi Masa *New Normal* di Nusa Tenggara Timur, Indonesia**

Kata Kunci: Covid-19, layanan ortopedi, *new normal*

INTRODUCTION

In December 2019 a new *Acute Respiratory Distress Syndrome* (ARDS) was reported in Wuhan, Hubei Province, China. The disease has since spread into entire China, Thailand, Japan, North Korea, and other parts of the world. In February 2020, WHO announced this disease as Coronavirus Disease (COVID-19) caused by *Severe Acute Respiratory Syndrome Coronavirus-2* (SARS-CoV-2).¹ This virus is highly contagious and has spread to more than 210 countries. In March 2020, WHO declared this outbreak as a pandemic. Until August 2020, there have been more than 23 million confirmed cases, including 16,372,987 recovered and 806,410 death, while in Indonesia, 157,859 cases were confirmed positive and 112,867 cured.² East Nusa Tenggara reported 171 cases with 149 recovered and 1 death. Sadly, 86 doctors across Indonesia had died in the fight against

Covid-19.

Training programs, examinations, conferences, meetings, and fellowship has been postponed or canceled. Orthopaedic care has been significantly changed by the pandemic; reduced to emergency cases only and elective cases were scheduled after Covid-19 testing. Inpatient care, early discharge, outpatient follow-up are strategies to tackle this pandemic while still providing the best care.

Universal precaution during new normal mainly focuses on infection prevention, access control, and physical distancing. Our hospital obliges the use of a mask for all within the hospital and the use of personal protective equipment for the healthcare worker. Access control included temperature screening for hospital visitors, restrict the main entrance

into separate entrances for entering and leaving the hospital, and limit visitation.

OUTPATIENT CARE

During new normal in our hospital, all patients should wear a cloth mask, temperature check and wash their hands before entering the clinic. Patients can make online advance appointments. Consultations are limited to a maximum of 3 hours for 15 patients per day. Patients with Covid-19 related symptoms (fever, shortness of breath, dry cough, loss of taste) will be directed to the holding room for further investigation. All staff should do frequent hand hygiene and wear basic standard PPE. The amount of staff is reduced; only necessary people are on-site to reduce interaction. Physical distancing is applied in a room setting; the distance between clinician and patients is 1.5-meter, separated by a clear acrylic screen. Outpatient care should be

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limited to certain cases and post-operative care such as wound control, suture removal, healing related complications, or follow-up visits.

PERIOPERATIVE MANAGEMENT

Currently, there are two types of tests for coronavirus disease; diagnostic test and antibody test. A diagnostic test can show if individuals have an active infection. The sample will be obtained from nasal and throat swab and amplified with real-time polymerase chain reaction (RT-PCR). This test is highly accurate and needs one day for results. In comparison, an antibody test, also known as a serological test detect antibodies made by the immune system; samples would be taken from a finger prick or blood draw. Antibodies in the blood can be detected several days or weeks after infection. It will take some hours to get the results and show if individuals have been infected by a coronavirus in the past.⁴ Patients in our hospital will be screened by this antibody test prior to surgery.

Transmission of coronavirus disease is through the droplet, airborne, and contaminated surfaces. Respiratory droplet transmission can occur when a person is in close contact (within 1 meter). Airborne transmission is defined as the spread of an infectious agent caused by the dissemination of infectious aerosols suspended in the air over long distance and time. Respiratory droplets are $>5-10 \mu\text{m}$ in diameter whereas aerosol is $<5 \mu\text{m}$ in diameter. Coronavirus from droplets expelled by an infected person can also be found on surfaces for hours to days.³ Some medical procedures can generate aerosols (aerosol-generating procedures) such as tracheal intubation and non-invasive ventilation. In orthopaedic surgical procedures, the use of power tools such as electrocautery, bone saws, reamers, and drills may release aerosols; to minimize the risk of virus spread, the use of these tools should be reduced to a minimum. A suction device to absorb smoke and aerosols should be used during surgical procedures. The use of absorbable sutures is preferred to lessen post-operative visits.

An elective procedure is defined if there will be neither short-term nor long term negative impact by delaying surgical treatment. Emergency surgeries are defined by a threat to patient's life or may lead to loss of

function or permanent disability if the surgery is not performed.⁵ American Academy of Orthopaedic Surgeons (AAOS) clearly defined elective cases as chronic problems that delaying treatment will not alter the outcome; such as total joint replacements, spine fusion, chronic rotator cuff tears, and degenerative meniscal tears. An emergency case is a surgery that must be done within 24 hours.⁶ Some emergency cases include open fractures, fracture-dislocations, epidural abscess, septic arthritis, as well as fractures; in such cases, delaying treatment would result in increased morbidity (e.g. intertrochanteric fractures, pelvic fractures, femur fracture, radius-ulna fracture).⁶

PREOPERATIVE

Best preoperative testing leads to the safety of the patients and healthcare providers. Testing is necessary precautions in the preoperative setting during this new normal era. In our hospital in Kupang, East Nusa Tenggara, patients should be admitted the day before surgery for Covid-19 risk profile assessment: symptoms, history of exposure, and travel history. The temperature will be checked and a cloth mask needs to be worn by patients. All patients planned for elective and emergency surgery would go through a chest x-ray examination and tested for Covid-19 with a rapid test.

INTRAOPERATIVE

The surgery area is divided into 3 zones: entry dressing room (area 1), operating theatre (area 2), and exit dressing room (area 3). Patients with absence of fever, cough, history of contact, negative rapid test, and normal chest x-ray were treated in a regular OR with usual perioperative procedures.

One operating theatre is prepared specially for suspected or confirmed Covid-19 case. The entrance to this room has specific signs to alert health care personnel. Access to the OR is reduced to only one main entrance. These areas are separated exclusively to treat patients during pandemic to reduce the risk of contaminating other patients or staff.

In the entry dressing room, surgical personnel will take on surgical scrub and cap, face shield, surgical boots, shoe cover, and waterproof apron. Orthopaedic surgeon required a N95 mask as it is effective for particles within the

size range of viruses, including coronavirus.⁷ A surgical mask is worn after the N95 mask.

The patient should already be under anesthesia when the surgeons enter the OR. The sterile or non-sterile procedure depends on the type of operation. At the end of the procedure, the surgeon should remove the outer gloves and gown then disinfect the first pair of gloves with alcohol. Then the surgical mask and cap can be removed. Finally, the surgeon can remove the first pair of gloves and disinfect hands with alcohol and exit the room.

Staff exits the room through an exit dressing room in area 3. PPE is sequentially removed starting from the apron, followed by a face shield, shoe covers, boots, and finally the N95 mask. Hands are disinfected after removing each PPE. Finally, the scrub can be removed before taking a shower.

We also separated the equipment for the OR special for Covid-19 cases. Bed, lamps, anesthesiology ventilator and monitor will remain in this OR and routinely disinfected after each procedure. Complete disinfection time required about 60 minutes using chlorhexidine and alcohol.

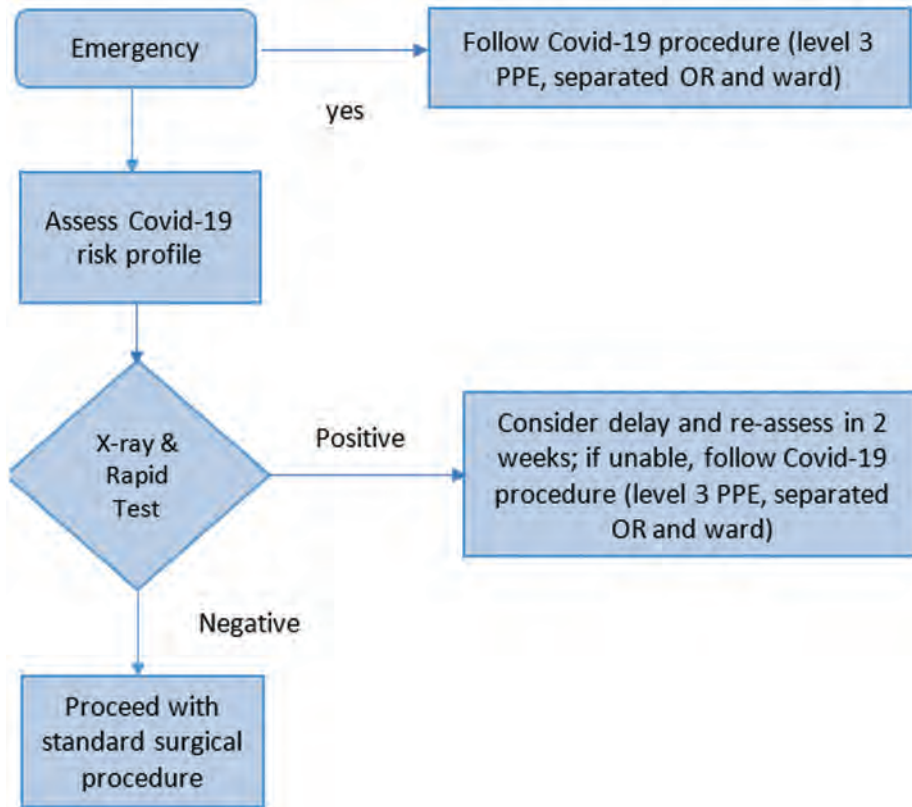
POSTOPERATIVE

After surgery, patients with negative Covid-19 may be treated in a regular ward with standard precautions. Suspected or Covid-19 patients should be transferred to an isolation room. Visiting hours are restricted and only allowed a maximum of one visitor per room. All visitors wore a nametag. Early discharge is planned to reduce exposure in hospital environment.

Early physical therapy is crucial following orthopaedic surgery; while physical therapists have a great risk of coronavirus infection. Here in East Nusa Tenggara, we adopted 3 levels of PPE for inpatient care. For non Covid-19 patient, the therapists use PPE level 1, which consist of head cap, surgical mask, gloves, scrub, and shoe cover. Level 2 is worn for suspected or confirmed case; consist of head scrub, goggles, N95 mask, gloves, gown, and shoe cover.⁹ The same PPE is used by orthopaedic surgeon during patient visit in the ward.



FLOWCHART



DISCUSSION

Before the Covid-19 pandemic hit East Nusa Tenggara, our hospital performed around 10 surgery procedures and had around 100 outpatient visits in a week. But after the very first Covid-19 cases were found in East Nusa Tenggara, there is a significant drop of surgery procedures and outpatient care into 1 to 2

procedures and less than 20 patients in a week. This significant drop in both outpatient care and inpatient care has an impact on the hospital's operational routine. The hospital is facing a dilemma because of the decrease in cash flow but yet still have to provide high-quality health service including PPE, rapid testing and other additional care.

We have been following this protocol in this last few months, and no new cases were recorded among healthcare workers in orthopaedic wards and operating rooms. The number of patients treated is slowly rising compared to the beginning of the pandemic. As for now, we perform 8 to 9 surgery procedures and around 80 outpatients visit in a week.

So far, this strategy seems to be practical and feasible. No new recorded cases among healthcare workers, and patient admission/consultation are gradually increasing. Nonetheless, we currently have no long-term data for the effectiveness of our protocol. This protocol is continuously developed and modified to accomplish full safety for everyone in the hospital environment. We share our experience and guideline to give a perspective for other institutions to deal with this pandemic crisis.

SUMMARY

Healthcare provider safety is fundamental for further care to the community. This is particularly important in our hospital because capacity, resources, and health-care personnel are limited in East Nusa Tenggara. A proper protocol will bring safety for all health care providers. Proper preparation is the key for adequate protection, as clinicians and the other healthcare worker exposed to a risk of infection. We all hope this crisis will end and health workers can safely treat emergency and non-emergency patients.

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