

Incidence of Infection and Mortality in Surgeries of Sports Injuries during COVID-19 Pandemic at Ghurki Trust Teaching Hospital, Lahore, Pakistan

SARMAD KHALIL¹, HIZBULLAH RIAZ ANSARI², ALI IJAZ AHMAD³, ABDULLAH ALI MOHAMMAD AL-HUTAM⁴, MAJID ZAHEER⁵, AMER AZIZ⁶

¹⁻⁵Residents, ⁶Professor & Head, Department Orthopaedic and Spine, Ghurki Trust Teaching Hospital, Lahore

Correspondence to Dr. Ali Ijaz Ahmad, E-mail: dralijazahmad@gmail.com Cell: 0345-8666107

ABSTRACT

Aim: To find out if there was a negative impact or consequence of performing surgeries related to sports injuries during COVID-19 period when most of the hospital services were suspended all over the globe.

Study design: Prospective study

Place and duration of study: Department Orthopaedic and Spine, Ghurki Trust Teaching Hospital, Lahore from 19th March 2020 to 6th August 2020.

Methodology: Seventy patients with sports injuries were enrolled. The history and thorough clinical examination, X-rays and CBC along with other relevant investigations were recorded. The patients were discharged in 24 to 74 hours period intervals and all the necessary SOPs regarding COVID-19 were strictly followed.

Results: None of the patients who underwent procedure developed infection or acquired coronavirus illness after discharge from the hospital or during follow-ups in OPD.

Conclusion: The surgeries performed during COVID-19 did not result in wound infection or patient-related mortality.

Keywords: Anterior cruciate ligament (ACL), Arthroscopy, COVID-19, Pandemic, Posterior cruciate ligament (PCL), Sports injuries, Infection, World Health Organization (WHO)

INTRODUCTION

The WHO has declared novel coronavirus (SARCS-Cov-2), a pandemic¹. The Orthopaedic Trauma Association has advised the recommendation regarding fracture fixation on outpatient basis despite the risk of COVID-19 to patients and healthcare workers². However, many hospitals around the world have significantly reduced the number of elective surgeries during this pandemic³⁻⁵. Elective procedures of the athletes have been postponed as well, the American Orthopaedic Society for Sports Medicine has released a video that provides them with advice on how to manage their condition⁶. There are documented facts that support worsening of pathology when postponement is more than 12 weeks, such as with nerve entrapment, ligamentous tear or myopathy with muscle weakness or worsening symptoms⁷⁻¹⁰.

COVID-19 virus transmits through: droplet, contact, airborne, and faeco-oral¹¹. Coughing and sneezing produce respiratory droplets (particles >5-10m in diameter), which are the main sources of transmission. COVID-19 has a wide range of clinical manifestations, from asymptomatic to clinically significant¹⁰. The considerations for the optimal protection of the surgeons and staff and patients can be compartmentalized into different SOP domains¹¹. The sensible utilization of financial and human resources have fundamental role during pandemic. Preserving the resources and manpower is vital in healthcare systems. Infection rate and mortality have been reported to be very high¹².

Pakistan, a developing country, has a different socioeconomic status when compared to countries all over

the world. We at our hospital, GTTH, continued to serve our people. We applied our defined SOPs to first screen the patient and then continued to perform surgeries of patients who tested negative with their consent. We published our data of 2300 major surgeries we performed at our hospital, GTTH, and our morbidity and mortality remained the same even during this pandemic. In doing so, we did not follow all WHO protocols. Instead, we made our own SOPs regarding COVID-19 screening in accordance with resources available in Pakistan.

The objective of the study was to find out if there was a negative impact or consequence of performing surgeries related to sports injuries during COVID-19 period when most of hospital services were suspended all over the globe.

MATERIALS AND METHODS

This prospective study was conducted at Ghurki Trust Teaching Hospital, Lahore from 19th March 2020 to 6th August 2020 after approval from ethical committee. A total of 70 patients diagnosed with sports Injuries around knee and shoulder joint were studied. After taking written and informed consent, demographic features (age, gender, type of implant, hospital stay, mortality, surgical site infection, and COVID symptoms) were noted. Preventive measures were used to safeguard the hospital staff as well as patients. Surgical site infection was recorded as an infection occurring after the surgery either involving superficial or deep tissue and skin, which can manifest in the form of pus discharge, redness, sinus formation or swelling. The mortality rate was observed as the death of a patient during the procedure and four months post-operatively either as an inpatient or an outpatient basis. As the data was collected during the period of COVID-19, so

Received on 14-03-2021

Accepted on 27-07-2021

the study also collected the information about COVID-19 symptoms, if any, before or after surgery. All SOPs were kept in mind and strictly followed when dealing with patients and attendants at the hospital. All the data were recorded using a structured questionnaire and analyzed through SPSS vr 22.

RESULTS

Most of them were males 59(84.2%) and 11(15.7%) were females. The mean age of patients was 34.62±11.92 ranged from 11-60 years. The minimum hospital stay of the patients was 2.44±0.86 and more left-sided injuries (39) as compared to right-sided (31) injuries. Majority cases had the diagnosis of combined medial meniscus and ACL injury as 58.6% while a single case of Bankart lesion was operated (0.2%). More than half of the patients had the status of chronic injury as 37(52.8%). Mostly the surgical interventions were done related to knee arthroscopy with or without ACL reconstruction as 63(90%). Three surgeries were done related to PCL reconstruction (Table I, Fig. 1).

Table 1: Distribution of patients according to demographic profile, injuries and surgical interventions (n=70)

Variable	No.	%
Gender		
Male	59	84.2
Female	11	15.8
Diagnosis		
Isolated meniscal injury	25	35.7
Meniscal and ACL injury	41	58.6
Bankrat lesion	1	1.4
PCL injury	3	4.3
Type of injury		
Acute (within 6 weeks)	33	47.2
Chronic (after 6 weeks)	37	52.8
Surgeries		
Knee arthroscopy (partial meniscectomy)	25	35.7
Shoulder arthroscopy	1	1.4
Open PCL reconstruction	3	4.3
Arthroscopic ACL recon	41	58.6
Side		
Left	39	55.8
Right	31	44.2

Fig.1: Pre and post-operative radiology



1a) Pre –op Left knee Radiograph 1b) Post-op open ACL Recon



1c) Pre-op radiograph of left knee 1d) Post-op arthroscopic ACL recon

DISCUSSION

COVID-19 spread throughout the world, initially seen in Hubei Province in China. It was recognised as the RNA virus causing severe acute respiratory syndrome Corona virus-type 2.

The World Health Organization has professed novel coronavirus (SARS-Cov-2), a pandemic¹. During this pandemic, many surgical and allied departments were advised to either delay or re-schedule the patient surgeries. Their main concern was to operate only emergency and non-deferrable oncological cases. Inadequate literature was present related to clinical and organizational guidelines for the management of surgical patients¹. Around the globe, surgeries were being delayed and were advised to be postponed.¹³The Orthopaedic Trauma Association has advised the recommendation regarding fracture fixation on outpatient despite the risk of Covid-19 to patients and healthcare workers². Although there are chances of patients to be exposed to SARS-CoV-2 infection during or after surgery, but the risk of protracted delayed treatment out weights the previous one. Keeping in mind, the shortage of hospital beds during pandemic choosing which surgery to be postponed or to be performed bears some controversy. Priority A (emergency surgery within 24 hours), priority B (urgent surgery within 48 hours), priority C (expedited surgery within 2 weeks), priority D (short-term delayed 3 months), and priority E (long-term delayed >3 months) are the five types of orthopaedic procedures.

Conversely, globally many hospitals have suggestively reduced the number of elective surgeries during this pandemic³⁻⁵. Non-emergency procedures of the Athletes have been postponed as well, (American Orthopaedic Society) and other organizations for Sports Medicine have given their respective guidelines according to the condition⁶. There are recognised facts that endorsed regarding worsening of the pathology when postponement is more than 12 weeks like nerve entrapment, ligamentous tear or myelopathy with muscle weakness or worsening symptoms⁷⁻⁹.

The COVID-19 virus can be transmitted by four different routes: contact, droplet, airborne, and faeco-oral.¹¹ The Corona virus is thought to be spread mostly through respiratory droplets from coughing and sneezing. COVID-19 has a wide clinical spectrum, ranging from asymptomatic to specific clinical disorders.

Preoperative screening should be priority because to the dangers of intubating a missing patient with COVID-19. After dealing with others, they should wash their hands

often, use hand sanitizer, and avoid touching their faces or lips.

Many countries are using clinical and epidemiologic knowledge to assess who should be tested. Because the disease manifests as pneumonia, the chest X-ray plays an important role in the diagnosis, therapy, and follow-up. Chest computed tomography (CT), particularly high-resolution CT chest, is the modality of choice in the COVID-19 pneumonia because of its increased sensitivity. We used chest X-rays and CBC tests to screen patients. Those who had findings suspected of COVID-19 on chest x-rays were advised to get CT (HRCT) done and managed by our medical department, GTTH.

The current COVID-19 pandemic signifies the importance of utilization of financial and human resources. Preserving resources and manpower is paramount in healthcare. It is important to ensure the ability of surgeons and specialized professionals to function through the pandemic.

We did a total of 125 surgeries related to sports injuries in pre COVID four months duration. However, we received less number of patients during COVID-19, of which all were entertained and dealt according to our SOPs. Reasons for decreased turnover of patients at our hospital were a due ban on public transport, sports, and other activities. We continued to help people by keeping our OTs and OPDs open.

All the surgeries were performed with the consent of patients while keeping all SOPs alive. Infection rate and mortality observed among the patients^{12,13}. The patients were followed up after discharge from the hospital to know if anyone developed COVID-19 symptoms like body aches, myalgias, fever, sore throat, and diarrhoea. None of the patients had any symptoms before, during the hospital stay, or after discharge until follow up. No Patient developed an infection (superficial or deep). Mortality was zero.

CONCLUSION

During the COVID-19 pandemic, it is of paramount importance to face the emergency most effectively and efficiently, retrieving resources from non-essential settings and, at the same time, providing care to high priority non-COVID-19 related diseases. Our results showed that surgeries performed during COVID-19 did not result in wound infection or patient-related mortality.

Conflict of interest: Nil

REFERENCES

1. Cucinotta D, Vanelli M. WHO declares COVID-19 a pandemic. *Acta bio-medica: Atenei Parmensis* 2020;91(1):157-60.
2. Massey PA, McClary K, Zhang AS, Savoie FH, Barton RS. Orthopaedic surgical selection and inpatient paradigms during the coronavirus (COVID-19) pandemic. *J Am Acad Orthop Surg* 2020; 28(11): 436-50.
3. COVIDSurg Collaborative. Elective surgery cancellations due to the COVID-19 pandemic: global predictive modelling to inform surgical recovery plans. *Br J Surg* 2020; 107(11): 1440-9.
4. Iacobucci G. Covid-19: NHS bosses told to assess risk to ethnic minority staff who may be at greater risk. *BMJ* 2020; 369: m1820.
5. COVIDSurg Collaborative. Global guidance for surgical care during the COVID-19 pandemic. *Br J Surg* 2020; 107(9): 1097-1103.
6. Massey PA, McClary K, Zhang AS, Savoie FH, Barton RS. Orthopaedic surgical selection and inpatient paradigms during the coronavirus (COVID-19) pandemic. *J Am Acad Orthop Surg* 2020; 28(11): 436-50.
7. Alentado VJ, Lubelski D, Steinmetz MP, Benzel EC, Mroz TE. Optimal duration of conservative management prior to surgery for cervical and lumbar radiculopathy: a literature review. *Global Spine J* 2014;4(4):279-86.
8. Lawrence JT, Argawal N, Ganley TJ. Degeneration of the knee joint in skeletally immature patients with a diagnosis of an anterior cruciate ligament tear: is there harm in delay of treatment? *Am J Sports Med* 2011;39(12):2582-7.
9. Burke FD. Carpal tunnel syndrome: reconciling "demand management" with clinical need. *J Hand Surg Br Eur* 2000;25(2):121-7.
10. Cascella M, Rajnik M, Cuomo A, Dulebohn SC, Di Napoli R. Features, evaluation and treatment coronavirus (COVID-19). In: Statpearls [Internet]. Treasure Island (FL): StatPearls Publishing 2021.
11. Al-Jabir A, Kerwan A, Nicola M, Alsafi Z, Khan M, Sohrabi C, et al. Impact of the coronavirus (COVID-19) pandemic on surgical practice-Part 2 (surgical prioritisation). *Int J Surg* 2020; 79: 233-48.
12. Marchetti DC, Katthagen JC, Mikula JD, Montgomery SR, Tahal DS, Dahl KD, et al. Impact of arthroscopic lateral acromioplasty on the mechanical and structural integrity of the lateral deltoid origin: a cadaveric study. *Arthroscopy: J Arthroscop Relat Surg* 2017;33(3):511-7.
13. D'Apolito R, Faraldi M, Ottaiano I, Zagra L. Disruption of arthroplasty practice in an orthopedic center in northern Italy during COVID-19 pandemic. *J Arthroplasty* 2020; 35(7S): S6-9.