

CHANGES IN SPECTRUM OF HAND AND WRIST PATIENTS SEEN DURING COVID -19 LOCKDOWN IN YEAR 2020: A RETROSPECTIVE STUDY

Ruchit Khera¹, Atul Agrawal², Vijendra Devisingh Chauhan³

Received : 08/02/2023
Received in revised form : 11/03/2023
Accepted : 03/04/2023

Keywords:
Hand Injury, Trauma, Lockdown,
COVID-19, Wrist Injury

Corresponding Author:
Dr. Ruchit Khera,
Email: ruchit1982@gmail.com

DOI: 10.47009/jamp.2023.5.3.49

Source of Support: Nil,
Conflict of Interest: None declared

Int J Acad Med Pharm
2023; 5 (3); 226-230



¹Associate Professor, Department of Orthopaedics, Gautam Buddha Chikitsa Mahavidyalaya & Dr. KKBM Subharti Hospital, Subharti Puram, Phase-2 NH-72, Jhajra, Dehradun, Uttarakhand. Pin 248007, India.

²Professor, Department of Orthopaedics, Himalayan Institute of Medical Sciences, Swami Rama Himalayan University, Swami Ram Nagar, Dehradun, Uttarakhand, India.

³Professor and Head, Department of Orthopaedics, Himalayan Institute of Medical Sciences, Swami Rama Himalayan University, Swami Ram Nagar, Dehradun, Uttarakhand, India.

Abstract

Background: Worldwide lockdown amid COVID-19 pandemic brought whole world to standstill in early 2020. Lockdown forced the people and health care system to undergo rapid changes. This study was done to study the effect of lockdown on type of Hand and Wrist Cases seen during specified pandemic period and compare it with homologue period during year 2019. **Method and Material:** Retrospective analysis of patients presenting to Orthopaedics Department in a tertiary care center in Uttarakhand with Hand and Wrist ailments between 24 March 2020 to 31 August 2020 was done and compared for demographic data and mode of injury with homologue period during 2019 to see change in spectrum of patients presenting during period of complete lockdown during year 2020. **Results:** There was unusual increase in Domestic Injuries, assault, and Self-inflicted injuries seen during study period, possibly as a result of rage and frustration of long confinement within home or exposure to unaccustomed household works. Increase in number of Chronic Repetitive Stress Injury patients was also observed when compared to previous year. Significant decrease in number of Road traffic accidents and occupational injury patients were seen during study period as expected due to lockdown. **Conclusion:** Covid -19 lockdown exposed people to unaccustomed household works and also spending more time for leisure activities with kids within home confinements leading to change in spectrum of injuries. We conclude that despite lockdown hand and wrist injuries continue to occur possibly at higher rates, thus adequate resources and provision for Hand injures patients must be maintained at any center catering to Hand injury patients even in case of any kind of complete lockdown in future.

INTRODUCTION

A worldwide lockdown was imposed after corona virus outbreak during early 2020, amid worldwide rapid increase in respiratory infections due to COVID-19 (Coronavirus Disease 2019), caused by contagious SARS-CoV-2.

First case of Corona Virus in India was reported from Kerala on 30 January 2020 in an Indian student who came from Wuhan, China.^[1] COVID-19 which is believed to have originated from Wuhan in China, spread locally and in no time worldwide emergence of cases were seen, leading to World Health Organization declaring it as a World-Wide Pandemic on 11-January 2020.^[2]

Nationwide lockdown was imposed in India on 25th March 2020 from 00 Hours bringing the country to a

standstill. Complete lockdown was done with an idea of "Prevention is better than Cure" in view of spreading COVID infection, considering the fact of having weaker health care system in India as compared to the developed nations. Lockdown was aimed at limiting the community spread of virus and helping in flattening of the disease curve.^[3] Nationwide lockdown restricted people to their homes. Public and private transportations were curbed except for essential and emergency services. Schools & Colleges were closed down and most of them gradually shifted to alternate mode of education (e-teaching). Offices were shut down and employees were advised to work from home. Couples came together working for their household and also towards earning their livelihood. Due to fear of spread of virus and for maintaining social

distancing, movement of household workers were also restricted.

This brought a sudden change in lifestyle of people including Work from Home for the major work force, sharing hand in common house hold work, including taking care of children who were now always at home and also taking care of older people and exposure to unaccustomed work for most people & total halt of e-commerce and transportation facilities. To add to this was fear of pandemic like situation, deterioration in business, fear of social and financial security amid lockdown.

All these social and family pressures exposed people to unaccustomed way of life and work, along with stress leading to various type of accidental or self-inflicted injuries, incidence of which escalated compared to pre-lockdown era.

The COVID-19 pandemic brought along sudden and major reorganization of healthcare services throughout world. Healthcare staff along with resources were reallocated to meet the needs associated with the huge surge in COVID-19 cases.^[4,5] Sudden rise in COVID cases also led to suspension in routine elective surgeries and non-emergent outpatient services resulting in a significant drop in patients visiting healthcare facilities to seek medical attention even for emergency conditions.^[6,7] Despite all this, patients with hand and wrist trauma continue to seek medical attention during the lockdown period.

Thus this study was carried out to evaluate change in spectrum of Hand and wrist patients during COVID-19 pandemic.

METHOD AND MATERIAL

We retrospectively analyzed data of patient presenting to Orthopaedics Department with Hand and Wrist complaints at Himalayan Hospital during lockdown period.

All the patients who presented with hand and wrist ailments to Himalayan Hospital during specified study period only were included in the study and subdivided into groups as per inclusion criteria below

- The inclusion period for Case group (Group A) was taken during complete lockdown in the state of Uttarakhand i.e. 24 March 2020 to 31st August 2020.
- Inclusion period for Control group (Group B) was taken during same time frame in year 2019 i.e. 24 March 2019 to 31st August 2019.

Data collected included patient demographics, date of attendance from OPD or Emergency Department, final diagnosis, side of limb involved (Right / Left), aetiology were recorded along with previous medical conditions if any were recorded.

Patients were categorized based on etiology as:

1. Trauma
 - (a) Road Traffic Accident: RTA
 - (b) Sports Injury: SI
 - (c) Fall from Height: FFH
 - (d) Domestic Accidents: DI
 - (e) Occupational Accidents including farm yard injuries: OI
 - (f) Self-Inflicted Injuries: SII
 - (g) Assault: AS
 1. Chronic Repetitive Stress Injury: RSI
 2. Infective: INF
 3. Inflammatory: IFL
 4. Misc: Which included: Tumors, Compressive Neuropathies, Avascular Necrosis

Patient Data was collected from OPD and Emergency Register of Orthopaedics Hand and Wrist Clinic, Department of Orthopaedics. Case files were assessed for patients who got admitted or underwent surgical procedure.

Statistical Analysis

Data was collected and entered in Microsoft Excel (Office) 2016 and evaluated using SPSS software version 22. Descriptive analysis and characterization of patients was done with simple frequency distribution table, central trend measures using mean and median. Chi-square test was used to compare groups with statistical significance defined as $p < 0.05$.

RESULTS

Total of 60 patients with acute and chronic hand ailments were seen during COVID-19 Lockdown in 2020 (24 March 2020 to 31 August 2020) while 45 patients were seen in homologue period during 2019 (24 March 2019 to 31 August 2019), enrolled in case (Group- A) and control group (Group-B) respectively.

Maximum number of patients were seen in 21-30 years age group in Group A (n=18; 30%) while maximum number of patients seen in Group B were from 41-50 years age group (n=13; 28.89%) as described in Table 1. Gender wise distribution in both groups were comparable with no significant difference in both groups, Group A Males 56.67% (n=34), Females: 43.33% (n=26) / Group B Males 55.56% (n=25) Females 44.44% (n=20)

Table 1: Age wise Distribution of patients in each group

Age Group	Group A (n=60)		Group B (n=45)	
	No.	%	No.	%
< 10	1	1.67	2	4.44
10 – 20	9	15.00	6	13.33
21 – 30	18	30.00	7	15.56
31 – 40	8	13.33	9	20.00

41 – 50	8	13.33	13	28.89
51 – 60	10	16.67	6	13.33
61 – 70	2	3.33	1	2.22
> 70	4	6.67	1	2.22

Table 2: Gender Wise Distribution

Gender	Group A (n=60)		Group B (n=45)	
	No.	%	No.	%
Male	34	56.67	25	55.56
Female	26	43.33	20	44.44

During lockdown period we observed significant decrease in Hand cases secondary to road traffic accident and occupational injuries. Total of 3 cases secondary to RTA (n=60, 5%) and 1 case due to industrial accident was seen (n=60, 1.67%) while in 2019 Hand ailments secondary to RTA and Occupational injuries together contributed to 33.33% of patients, RTA: 9 patients (n=45), Occupational injuries: 6 patients (n=45). This was as expected due to lockdown, shut down of non-essential industries and restrictions in travel seen during lockdown period.

Total of Fifteen patients with Domestic Injuries which included mixer grinder injuries, knife cut injuries, door or bed box injuries were seen during 2020 (25% n=60), compared to 7 during 2019 (15.56% n=45). 11 cases of Sports injuries were seen during lockdown period (18.33% n=60), these

included 5 cases of PIP joint fracture-dislocation, 3 cases of boutonnières injury and one of volar plate injury. 4 out of these were old neglected injuries who seek medical attention for the first time during lockdown period secondary to loss of range of motion or stiffness of finger. 1 case of mallet finger was seen who was a professional volley ball player and 1 case of old Ulnar collateral ligament injury sustained before lockdown. Compared to 6.67% during 2019.

We witnessed a total of 15 cases who sustained injury at home or home based work during lockdown period. Nine out of these sustained injury secondary to Fall at Home. 1 out of these was a 5 year old kid with distal radius and ulna fracture sustained secondary to fall from table rest were distal radius fractures, capitulum fracture, scapohid fracture [Table 3].

Table 3: Comparison of types of Injuries seen in each group.

Etiology	Group A (n=60)		Group B (n=45)	
	No.	%	No.	%
Domestic Accidents	15	25.00	7	15.56
Sports Injury	11	18.33	3	6.67
Repetitive Stress Injury	13	21.67	3	6.67
Fall From Height	5	8.33	1	2.22
Assault	3	5.00	2	4.44
Road Traffic Accident	3	5.00	9	20.00
Occupational Injury	1	1.67	6	13.33
Self Inflicted Injury	1	1.67	0	0.00
Inflammatory	2	3.33	6	13.33
Infective	2	3.33	1	2.22
MISC	4	6.67	7	15.56

One patient with Radial Collateral ligament injury was seen secondary to hand stuck in door while Three cases were of bed box injury in a 23 year old male and 52 year old female and 18 year old male with open fracture of middle phalanx, who was taken up for emergency surgery as per COVID protocol.

One patient with Fingertip injury was seen who accidentally cut her fingertip while chopping vegetables. One patient with washing machine injury a 18 year old female who tried to stop spinner with hand before it came to full halt, sustained Acute TFCC injury and lucky to have no other injury.

During lockdown we have seen 13 patients with one or other type of Repetitive Stress Injury mostly secondary to unaccustomed work, handling of kids, helping in household works, or extensive use of mobile. We have seen four patients with

extensor/flexor tendon tenosynovitis out of which 3 were males and all were related to unaccustomed household work.

We have seen three cases with Trigger Finger, three patients with De Quervain's Tenosynovitis, one case of intersection syndrome and two cases of Thoracic Outlet Syndrome both of them were females and related to extensive use of mobile phone /television which has also been reported as a common cause of Thoracic Outlet Syndrome in literature.^[8]

Apart from this Tuberculosis of Wrist, Tuberculosis of phalanx, Capitulum fracture, Boxer's fracture and brachial plexus injury patients were also seen. Three patients with Rheumatoid arthritis seek medical attention during this period two of them had Extensor Pollicis Rupture and one with severe painful hand deformities with severe restriction of work.

DISCUSSION

This is one of the first few papers from India reporting effect of lockdown on spectrum of Hand and Wrist injuries cases. As expected, due to restriction on travel and temporary halt in non-essential industries significant fall in Road traffic accidents and Occupational injuries patients was seen during period of lockdown.

All the patients underwent triage, thermal screening and quick assessment for COVID-19 as per guidelines issued by Govt of India. Gradually governments gave relaxations for travel for seeking medical attention, and also elective surgeries in some cases. All the patients presenting with open fractures, lacerations, or joint dislocations were regarded as emergency and those who underwent emergency surgical procedure were also screened for COVID-19 with Rapid Antigen Test as there was no time to wait for RT-PCR reports. However all standard precautions were taken during surgery.

Against our expectations number of Hand and Wrist cases secondary to assault were comparatively same in both the groups, while only one patient with Self Inflicted injury was seen during lockdown period in a fit of rage when patient smashed his hand on table top.

Garude *et al.* reported overall decrease in adult and pediatric caseload during the lockdown, along with significant increase in the proportion of household injuries. Author also noted an increase self-inflicted injury from 2.8% to 5.5%. Similarly, reduction in trauma cases was reported in a multicentric study by Playa *et al.*, however author also reported that no significant change in non-deferrable procedures.^[9,10] Our findings of present study are consistent with most of these reports, barring few which have reported no change in hand trauma work during lockdown.^[11]

Surge in COVID cases forced Surgical Specialties to revisit operative management guidelines to manage patients with limited resources and hands. For the patients, manageable with non-surgical methods, to reduce hospital stay and visits telemedicine was opted for follow ups. Telemedicine gained popularity during lockdown period, which came as boon for people in less assessable areas, however it can never replace need for clinical examination and assessment.

Pandemic also popularize use of Wide Awake Local Anaesthesia No Tourniquet Technique (WALANT) use along with use of social media platform and telemedicine for no – contact follow ups.^[12,13]

Limitations of Study

This study was done retrospectively to compare it with previous year data to analyze if COVID-19 has affected hospital footfall of patients with hand and wrist ailments or not. However we did not analyze number of patients that required or underwent surgical procedure during this time. Thus we assume that a multicentric study with analysis of number of

patient requiring surgery on emergent basis would be more apt and it was limitation we found in our study.

CONCLUSION

Worldwide pandemic brought along with significant changes in lifestyle of people around the world. people have seen and adapted to new normal for every domain of life. Medical and surgical specialties were never the less left untouched with it, from PPE Kits to N95 to telemedicine social distancing and reorganization of health system. Not only resources but also, healthcare staff were reallocated to meet the demands of pandemic. We conclude that despite of Lockdown Hand injury patients continue to seek medical attention from time to time and possibly at ever higher rates, thus adequate resources and provision for Hand injures patients must be maintained at any center catering to Hand injury patients in future in case of any kind of lockdown or emergency situations.

Acknowledgement

This study was done at Himalayan Institute of Medical Sciences, Swami Rama Himalayan University, Swami Ram Nagar, Dehradun, Uttarakhand, India.

REFERENCES

1. Raman Swathy Vaman, Mathew J. Valampampil, A.V. Ramdas, A. T. Manoj, Basil Varghese, Flory Joseph A confirmed case of COVID-19 among the first three from Kerala, India Indian J Med Res. 2020 May;151(5):493–494. doi: 10.4103/ijmr.IJMR_2205_20.
2. WHO, Director-General's opening remarks at the media briefing on COVID-19, 11 March 2020. <https://www.who.int/director-general/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19---11-march-2020> (Assessed on: 01-12-2021)
3. "COVID-19 lockdown in India." *Wikipedia*, Wikimedia Foundation, 25 March 2020, https://en.wikipedia.org/wiki/COVID-19_lockdown_in_India. (Assessed on: 01-12-2021)
4. WHO, NEWS: COVID-19 significantly impacts health services for noncommunicable diseases. <https://www.who.int/news/item/01-06-2020-covid-19-significantly-impacts-health-services-for-noncommunicable-diseases>. (Assessed on: 01-12-2021)
5. Office of Inspector General, U.S. Department of Health and Human Services. Annual publication, 2020 Top Management and Performance Challenges Facing HHS <https://oig.hhs.gov/oei/reports/oei-06-20-00300.pdf> Assessed on: 01-12-2021)
6. Uimonen M, Kuitunen I, Paloneva J, Launonen AP, Ponkilainen V, Mattila VM (2021) The impact of the COVID-19 pandemic on waiting times for elective surgery patients: A multicenter study. *PLoS ONE* 16(7). <https://doi.org/10.1371/journal.pone.0253875>
7. Ministry of health and Family Welfare, India. Advisory for Hospitals and Medical Institutions, 22 March 2020. <https://www.mohfw.gov.in/pdf/AdvisoryforHospitalsandMedicalInstitutions.pdf> (Assessed on: 01-12-2021)
8. Zirek E, Mustafaoglu R, Yasaci Z, Griffiths M.D., A systematic review of musculoskeletal complaints, symptoms, and pathologies related to mobile phone usage. *Musculoskelet Sci Pract.* 2020;49:102196. <https://doi.org/10.1016/j.msksp.2020.102196>.

9. **Garude K, Natalwala I, Hughes B, West C, Bhat W.** Patterns of adult and paediatric hand trauma during the COVID-19 Lockdown. *J Plast Reconstr Aesthet Surg.* 2020;73(8):1575–1592. <https://doi.org/10.1016/j.bjps.2020.05.087>.
10. **Martin-Playa P, Calzacorta-Muñoz P, Aparicio Elizalde L, Carrera-Casal O, García Gutiérrez JJ.** An overview of the situation of hand surgery in Spain during the peak of COVID-19 pandemic. *Hand Surg Rehabil.* 2020;39(5):454–458. <https://doi.org/10.1016/j.hansur.2020.06.002>.
11. **Hwee J, Chiew J, Sechachalam S.** The impact of coronavirus disease 2019 (COVID-19) on the practice of hand surgery in Singapore. *J Hand Surg Am.* 2020;45(6):536–541. <https://doi.org/10.1016/j.jhssa.2020.04.023>.
12. **Donald Lalonde.** Wide awake local anaesthesia no tourniquet technique (WALANT) *BMC Proc.* 2015; 9(Suppl 3): A81. <https://doi.org/10.1186/1753-6561-9-S3-A81>.
13. **Fady Atia, Sasa Pocnetz, Anna Selby, Peter Russell, Chris Bainbridge, Nick Johnson.** The effect of the COVID-19 lockdown on hand trauma surgery utilization *Bone Jt Open* 2020 Oct 12;1(10). <https://doi.org/10.1302/2633-1462.110.BJO-2020-0133.R1>