INTRODUCTION

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

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.

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.[6,7] 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
2. Occupational Accidents including farm yard injuries: OI
3. Self-Inflicted Injuries: SII
4. Assault: AS
5. Infective: INF
6. Inflammatory: IFL
7. 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 – 20 | 1 | 1.67 | 2 | 4.44 |
| 21 – 30 | 18 | 30.00 | 7 | 15.56 |
| 31 – 40 | 8 | 13.33 | 9 | 20.00 |

International Journal of Academic Medicine and Pharmacy (www.academicmed.org)
ISSN (O): 2687-5365; ISSN (P): 2753-6556

227
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 boutonnieres 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, capitullum fracture, scaphoid fracture [Table 3].

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

<table>
<thead>
<tr>
<th>Etiology</th>
<th>Group A (n=60)</th>
<th>Group B (n=45)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
</tr>
<tr>
<td>Domestic Accidents</td>
<td>15</td>
<td>25.00</td>
</tr>
<tr>
<td>Sports Injury</td>
<td>13</td>
<td>21.67</td>
</tr>
<tr>
<td>Repetitive Stress Injury</td>
<td>5</td>
<td>8.33</td>
</tr>
<tr>
<td>Fall From Height</td>
<td>3</td>
<td>5.00</td>
</tr>
<tr>
<td>Assault</td>
<td>3</td>
<td>5.00</td>
</tr>
<tr>
<td>Road Traffic Accident</td>
<td>1</td>
<td>1.67</td>
</tr>
<tr>
<td>Occupational Injury</td>
<td>1</td>
<td>1.67</td>
</tr>
<tr>
<td>Self Inflicted Injury</td>
<td>2</td>
<td>3.33</td>
</tr>
<tr>
<td>Inflammatory</td>
<td>2</td>
<td>3.33</td>
</tr>
<tr>
<td>Infective</td>
<td>4</td>
<td>6.67</td>
</tr>
</tbody>
</table>

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 accidently 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, Capitullum 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.

Table 2: Gender Wise Distribution

<table>
<thead>
<tr>
<th>Gender</th>
<th>Group A (n=60)</th>
<th>Group B (n=45)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
</tr>
<tr>
<td>Male</td>
<td>34</td>
<td>56.67</td>
</tr>
<tr>
<td>Female</td>
<td>26</td>
<td>43.33</td>
</tr>
</tbody>
</table>
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. 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.

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 Torniquet Technique (WALANT) use along with use of social media platform and telemedicine for no – contact follow ups.

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 specialities 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 injuries 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


