

Non Covid Ophthalmic Emergency During The Lockdown Period Of Covid-19 Pandemic

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Abstract:

Aim: To study the demographics, diagnosis and management of ocular emergencies and the distance that the patients had to travel before they could avail medical services seen during the lockdown period of COVID -19 pandemic.

Materials and Methods: We conducted a retrospective observational study of all the ocular emergencies seen in the Emergency department at a Medical teaching hospital located in a metropolitan city.

Results: There were a total of 29 cases, with a mean age of 29 years(1-78years). Males comprised 65.5% (19) of the cases. 51.7% of the cases were in the 20-39 Age group. The male to female ratio was 1.89. The patients requiring surgical management had travelled a mean distance of 58.6Km (Range:2-210Km) compared to patients requiring medical management who had travelled a mean distance of 3.9Km(Range 1-8Km). before they could avail specialist services.

Conclusion: The lockdown period of COVID 19 pandemic posed challenges to the delivery of healthcare system. The preparedness of the hospitals and their willingness to adapt and change to the new situation was the major determinant in providing the appropriate treatment for patients presenting with ocular emergencies.

Introduction: The evolving COVID-19 pandemic has posed varied challenges to everybody in the world. It has disrupted the healthcare delivery with increased emphasis on COVID- 19 patients, the non COVID conditions having taken a backstage. The nationwide lockdown which restricted all the out-patient departments and the in-patient services posed a huge challenge to patients in reaching the hospitals for non-COVID emergencies and also reduced the access to specialists. A survey done in India of 1260 ophthalmologists showed that 72.5% of the respondents were not seeing any patients. Ophthalmologists working in institutes, government and municipal hospitals were seeing significantly higher number of patients compared to private practitioners¹.

We present the cases that were seen in a Medical Teaching Hospital during the 2 months of lockdown. We have excluded cases that were seen in Out-patient department which were functioning within 2 weeks of lockdown period and have included only

cases which presented to the accident and emergency department.

Materials and methods:

We conducted a retrospective observational study of all the cases presented to Accident and Emergency (A & E) Department during the period of March 22nd 2020 to May 31st2020. The medical records of all patients who presented to A& E department and who were referred to the Ophthalmologist were analyzed. Demographics, the ocular findings, treatment given, the distance that patients had to travel to avail ophthalmology services, and the number of days they had symptoms prior to seeking medical help were noted.

Results: Twenty-nine patients were seen during this period in A& E department and this included 19 male patients (65.5%) and 10 (34.5%) females. The mean age of the patients was 29 years (1-78 years). The age distribution has been showed in table 1 with 51.7% of the cases in the 20-39 age group. Seventeen of them needed medical management while 12 needed surgical management. When we compared the type of intervention to age group, we found that 80% of the patients in the 20-39 age group were managed medically and discharged from the A&E (Table 2). While patients below 20 years and those above 60 years had a higher proportion of patients requiring surgical management. Both right and left eyes were equally involved with 13 cases each and 3 cases had bilateral affection.

When patients requiring medical management were compared to those requiring surgical management it was seen that medical management group were staying closer to the hospital with a mean distance of 3.9km +/- 2.8 Km whereas those requiring surgical management had to travel farther away with a mean distance of 58.6km (range of 2 km to 210 km). The reason could have been due to shut down of surgical services due to COVID 19 pandemic and these surgical cases were referred to higher centers as the preparedness to COVID -19 was lacking in most of the hospitals in second tier cities. The surgical cases had gone to multiple centers- a minimum of two before being seen in our institute.

Twenty patients who presented to the A&E department had history of injury, out of which 17 were accidental and 3 had self-fall. The diagnosis has been presented in the Table 1, showing 31 % of the cases were due to mechanical injury. When mode of

injury was analysed it was seen that nine cases that came with mechanical injury had varied modes of injury with 4 cases having hit by a stone, 3 cases in children had injury while playing, one case of ocular injury due to RTA and one case of corneal injury while opening a bottle cap.

Chemical injuries included one case having feviqwik injury, one had sanitizer splash and two had oil splash into the eye and one with hot water injury to the eye.

Two patients who presented with perforated corneal ulcer were on treatment for keratitis but due to lockdown could not get timely treatment and had corneal perforation and were then referred to our center for surgical management

Twenty-three cases presented with pain while the next common symptom was foreign body sensation. Twenty-seven cases had anterior segment lesions while only one had posterior segment lesion and one presented with eye affection secondary to fracture orbit.

Of the twelve requiring surgical management, nine cases were operated in our institute with a mean of five days of hospital stay and three cases wished to take second opinion and refused admission.

All the surgical cases were operated with full personal protection equipment and with all necessary steps to ensure safety of both patients and healthcare personnel.

Discussion:

The Ophthalmic emergencies may contribute to 5% of the total emergencies seen in the Emergency department. They usually range from minor diseases such as conjunctivitis, corneal abrasion, foreign body and dry eye to severe sight threatening globe injuries.² The incidence of ocular injuries can vary in different regions depending upon the socioeconomic factor with some studies reporting high proportion of the ocular emergencies especially in developing countries while some studies indicating them to be a minor fraction of the emergencies.⁽³⁾

Early management of ocular emergencies is very important to identify vision threatening complications and appropriately treat them. Hence these cases need to be seen by specialists to institute appropriate management at the earliest.

As reported in other studies, males accounted to 65.5% of the cases compared to females in our study. Maurya et al in their study of ocular trauma in North India have reported that male to female ratio was 2.7, due to increased outdoor activities.⁽⁴⁾ In our study too it was high with a ratio of 1.89 and was in concurrence when compared to other studies.

Injuries accounted for 54.1% (16) of the cases in our study. When compared to other studies where conjunctivitis and cataract were the commonest presentation, in our study injury was the commonest

presentation. This was probably because of COVID 19 lockdown only injury cases were perceived as emergency and patients sought medical help. That is the reason that we saw a higher proportion of surgical cases in our patients.⁵

Kumar LN et al in their study showed that 86% of the cases in their study reporting to a metropolitan eye emergency department were living in the metropolitan suburbs⁽⁵⁾. In our study during the COVID 19 pandemic we found that if it was a medical emergency patients (58%) patients lived within 3Km of the hospital whereas surgical cases(42%) had travelled a mean distance of 58 km to reach the hospital. The COVID19 pandemic had resulted in closure of surgical services in many towns and second tier cities and specialty specific services were also shut down.⁽¹⁾ Hence these patients had to travel a longer distance before they could be treated for their condition.

Cheung et al in their study on ocular emergencies reported that 39.4% required surgical intervention. In our study too the proportion of patients requiring surgical intervention was 41.4% and was similar to their study. The only difference being that patients were travelling for long distance before getting the appropriate treatment and thus reducing the visual prognosis due to delay in treatment. This is especially true for globe ruptures where delay in treatment can affect the visual prognosis.

COVID 19 pandemic has disrupted many healthcare services and has left both patients and healthcare unprepared for the situation. Hospitals which quickly adopted to COVID 19 pandemic by segregating patients and provision of personal protective equipment and who readily made changes to establish a safe working environment were able to deliver continued healthcare services⁽⁶⁾. Cases needing surgical intervention had difficulty in accessing specialist care immediately and had to travel to cities to get an appropriate care.

Limitations of our study: Because of the lockdown and restrictions to travel many minor cases may not have reached the hospitals and hence we saw very few cases in emergency. This could be the reason for low numbers nevertheless those who required surgical management had overcome these restrictions to reach hospital. More data from across states and comparing with other centers will help us to determine whether there was any difficulty in accessing healthcare services.

Conclusion: The ophthalmic emergencies did not vary during COVID 19 pandemic in terms of age, sex and mechanism of injury but however the surgical cases needed to travel long distance to get the appropriate treatment. The preparedness of the healthcare system in response to the COVID 19 pandemic was the major determinant in providing the appropriate treatment to the patients.

References:

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Table 3: Diagnosis

	Frequency	Percent
Mechanical Injury	9	31.0
Chemical injury	3	10.3
Infectious keratitis	3	10.3
Subconjunctival hemorrhage	2	6.9
foreign body	2	6.9
Ocular burns	4	13.8
Conjunctivitis	2	6.9
Pre-septal abscess	1	3.4
Traumatic iridocyclitis	1	3.4
Angioedema	1	3.4
Fracture roof of orbit	1	3.4
Total	29	100.0

Tables

Table 1- shows Age distribution of cases.

Age group	Frequency	Percent
1-19 years	9	31.0
20-39years	15	51.7
40-59years	1	3.4
>60years	4	13.8
Total	29	100.0

Table2: Age group distribution and the type of intervention

Age Group	Intervention		Total
	Medical	Surgical	
1-19 years	4 (44.4%)	5 (55.6%)	9
20-39years	12(80%)	3 (20%)	15
40-59years	0 (0%)	1 (110%)	1
>60	1(25%)	3 (75%)	4
	17	12	29