

## Impact of Covid-19 on the Morphology of Cataract

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### ABSTRACT

**Objective:** To see the impact of Covid-19 on the morphology of cataract during lockdown.

**Study Design:** Observational and interventional study.

**Place and Duration of Study:** Department of Ophthalmology, Niazi Medical and Dental College from 1<sup>st</sup> April 2020 to 30<sup>th</sup> September 2020.

**Methodology:** All the patients of eye related complaints were referred to eye department from emergency of hospital after screening them for Covid-19 suspected symptoms as well as patients coming directly to eye OPD from reception. Patients suffering from phacomorphic, phacolytic glaucoma and cataract of every type except traumatic type were included.

**Results:** The ratio of males and females patients was almost equal because cataract is a common age related problem in both sexes. Due to lock down there is a significant increase in the number of mature cataract as well as phacomorphic and phacolytic glaucoma which was decreased for last many years. Although the awareness increased regarding cataract surgery but due to stop of elective work like other specialties and COVID 19 become the focus point the morphology of cataract changed (mature and hypermature), complicated cataract (phacomorphic, phacolytic glaucoma) irrespective of socioeconomic status of patients.

**Conclusion:** During lockdown period there is increase in the maturity of cataracts and secondary glaucoma (phacolytic, phacomorphic). Although this pattern of cataract presentation has been decreased for last many years but due to covid 19 strong lock down occur and this pattern was again observed.

**Keywords:** Covid-19. Phacolytic glaucoma, Phacomorphic glauco

### INTRODUCTION

By December 2019 in the Wuhan city of China a Respiratory illness spread all over the province which was different from other viral illness of respiratory tract. In January 2020, the Chinese Scientists named this unknown virus as Covid-19. Then this outbreak of disease spread all over the world and declared as pandemic by the world Health Organization involving the more than 117 countries of the world.<sup>1</sup>

In our region it rapidly involved our neighbour countries as well. In Iran, they reported confirmed cases are 7161 and death count reported around 237 since mid February 2020 while the real number is believe to be higher up till now. On March 2020, Indian spokesman confirmed more than 40 deaths in India, Afghanistan, Bahrain, Iraq, Lebanon, Qatar, Saudi Arabia and our country Pakistan has also reported cases linked to Iran.<sup>2</sup> Pakistan reported 272 cases on March 18, 2020. Although in our country it is started at the end of January in the Karachi and interior Sindh due to religious people come from Iran after ziaratte but reported late.<sup>3</sup> The majority of cases in our country are reported in Sindh followed by Punjab and in next few weeks it rises rapidly.<sup>4,5</sup> The impact of that disease was too much high in all health disciplines all over the world and nothing was known about it and still many things are unknown about it.<sup>6</sup> So as a preventive measure like in other countries complete lockdown was done in our country particularly in Karachi and strict measures were done regarding Covid-19. So Covid-19 effect the every discipline of life badly. It badly effect the whole world socially, psychologically and economically.<sup>7</sup>

Being a doctor every specialty of health affected and all attention divert to covid-19. Our specialty particularly (eye) Ophthalmology effected. Because it is respiratory disease and ophthalmologists are very closer to the patients. So our OPD are completely closed only emergency patients are seen with the strict preventive measures using mask, protective shield, gloves and gown. Like every specialty our major percentage of surgery is cataract. It is major cause of Blindness all over the world. In our country patient like to operative for this surgery in moderate weather. They do not come from surgery in too much cold and too much hot and humid weather an old tradition coming from the era of ICCE. Although it is decreasing now but still most patients come

for surgery in spring season. Unluckily Covid-19 pandemic start all over the world in February and lock down started every where patients were waiting for cataract surgery from winter and this winter was very intense. So many were waiting from the last six months and complete lockdown started. When the lockdown partially opened the no of patients presenting in Eye Emergency due to phacomorphic and phacolytic glaucoma increased. Because their cataract after long waiting become mature and after that it is converted into secondary glaucoma.

### MATERIALS AND METHODS

This observational and interventional study was conducted at Niazi Medical and Dental College Sargodha from 1<sup>st</sup> April 2020 to 30<sup>th</sup> September 2020 and 100 patients were selected from the emergency and eye OPD department. Patients of all types of cataracts along with phacomorphic and phacolytic glaucoma were included. Patients presenting in emergency, due to angle closed glaucoma (Primary), traumatic cataract, migraine and neurological disorder were excluded. All the patients of eye related complaint are referred to eye department from the emergency of hospital and reception after screening them from Covid-19 suspected symptoms. After taking their history of ocular and systemic complaints, vision was taken then torch examination done. After that slit lamp examination was done under strict measures against Covid-19 for doctors as well as for patients. Patients presented with the history of pain in the eye, headache and few patients also give history of vomiting. On slit lamp mature cataract was seen along with shallow AC and mid dilated pupil. Digitally eyes were hard and on tonometry their pressure was in 40-50 mmHg range and we diagnosed them as phacomorphic glaucoma (Secondary glaucoma). In case of phacolytic glaucoma their chamber was deep, cataract was mature and proteinaceous material was come out from lens and blocking the angle and increasing the pressure of eye. In routine OPD patients, most patients presenting with decrease of vision and their cause was cataract. In most patients it was mature and hyper mature type morphology. All patients were advised for surgery except phacomorphic and phacolytic glaucoma (secondary glaucoma). They were first medically treated then their

surgery done. The data was entered and analyzed through SPSS-25.

**RESULTS**

There were 55 (55%) males and 45 (45%) females (Table 1). The frequency of type of morphology was presented in Table 2.

Table 1: Frequency of genders (n=100)

Gender	No.	%
Male	55	55.0
Female	45	45.0

Table 2: Frequency of type of morphology (n=100)

Type of morphology	No.	%
Phacomorphic glaucoma	9	9.0
Phacolytic glaucoma	5	5.0
Mature & hypermature cataract	58	58.0
Immature cataract	28	28.0

**DISCUSSION**

Cataract is the major cause of preventable blindness all over the world.<sup>8,9</sup> After modernization of world and increase in the awareness all over the world the cataract is operated early because it create problems in driving, reading and other routine activity of people. New technique are come like phacoemulsification which provide early rehabilitation and after surgery person can start his work on the very next day.<sup>10</sup>

But after Covid-19 pandemic break out every aspect of life badly affected. Complete lockdown done everywhere and doctors and paramedical staff are badly affected by this pandemic particularly eye, ENT, Dermatology and anesthesia specialty.<sup>11</sup> All elective surgery stop everywhere only Emergency surgery done and whole world focus on Covid-19.<sup>12</sup> In our country where patients like to operative in moderate season like spring, they cannot come for surgery due to lockdown because it start in spring. In this situation their cataract morphology going to be changed. In most patients it became mature, hypermature cataract and many patients presented as a phacolytic and phacomorphic glaucoma (secondary glaucoma). During lockdown period, because they were already waiting for cataract surgery for more than last six months. A significant number of patients presented in eye OPD and emergency as a secondary glaucoma due to maturity of cataract called phacomorphic and phacolytic glaucoma. These patients were operated after giving the medical treatment and they came in the category of complicated cataract. Another factor for cataract formation is systemic disorder, out of which diabetes mellitus is top of list. Uncontrolled diabetes mellitus promote cataract formation early and rapidly. In Covid-19 all elective work stop so the routine patients of systemic illness also affected, their metabolic disorder also disturbed. So this was another factor for the aggravation of mature cataract and secondary glaucoma. In our Ophthalmology department we operate significant number of cataract surgery patients under strict Covid-19 measures. In this

study we observe another important thing .For last many years due to advancement and awareness come in the society regarding cataract surgery there were significant and well demarked decrease in mature, hypermature, phacolytic and phacomorphic glaucoma (complicated cataract).Now a days it was the problem of low socioeconomic status. But after pandemic of covid-19 it affect the whole society and all socioeconomic status. Mostly these patients were mixed category. They belong to the rural as well as urban areas and also they belong to the all classes of socioeconomic status. Because most of the cataract was due to age related pathology so after lock down opened and even in emergency the patients present with the complication of secondary glaucoma due to hyper maturity of cataract irrespective of socioeconomic status. This was very important finding which we observed after Covid-19 pandemic break out. In the literature it is still not come in the written form. Although observed by a significant no of Ophthalmologist.

**CONCLUSION**

Covid-19 is novel virus which affect the every aspect of the whole world. Every day, every week we observed the new things and guidelines about it. Same in the ophthalmology a significant increase in the incidence of phacomorphic, phacolytic (secondary glaucoma) and mature cataract increase occur.

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