Research Paper

Surgery during Covid-19 Pandemic in Pacific Medical College and Hospital

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ABSTRACT

Background: Pacific Medical College and Hospital (PMCH) is a 900 bedded, multispecialty, tertiary level health care centre with state of the art equipment, infrastructure and a team of highly experienced, qualified, skilled and motivated teachers, doctors and technical manpower. The hospital has well established department and wards dedicated to COVID-19 positive patients and facilities for sample collection.

Keywords : COVID-19, Lockdown, Surgery.

INTRODUCTION

On January 30, 2020 Director General of World Health Organisation (WHO) declared novel corona virus as Public Health Emergency of International Concern (PHEIC) 1 as the outbreak continues to spread outside China. In the early March, an unanticipated high number COVID positive cases detected worldwide and coronavirus disease (COVID-19) was declared a pandemic on March 11, 20202 .The Indian Government announced a nationwide lockdown for 21 days3, on March 24, 2020 to break the chain of transmission of COVID-19 virus as the number of cases testing positive in the country reached above 500, however this lockdown was further extended. During the lockdown period, outpatient clinics and elective surgeries were decreased and majority of hospital resources were directed towards availing masks, PPE kit4 etc. and handling of COVID patients.

In the time span of 9 months, everything has changed5 .The pandemic of coronavirus disease 2019 (COVID-19) has torn through the fabric of our society and laid waste to the daily routines we practiced automatically5. The most basic assumptions of how we plan our day, how we organize our family life, and how we practice medicine are gone, and in their place we socially isolate, we home school, and we work less to decrease exposure5. The global impact of this invisible virus is horrific, and we as doctors and healthcare workers are on the front lines of this war, confronting our own mortality as we continually restrategize5.

Meanwhile the COVID-19 pandemic has fostered skills that we did not know we had. We have innovated so rapidly and learned from our colleagues internationally, using technology to facilitate discussion of issues and dissemination of knowledge5. The companies have found that their employees can work from home, school and colleges discovered that they can teach online and so on. I also believe that webinars and online publications are saving lives by sharing information. We at PMCH and even administrators to learn quickly, adapt our personal and institutional practice, and adopt policies to allow a new best practice, use personal protective equipment (PPE), and save our patients and ourselves5. As we determine how to pivot our practices in this rapidly changing environment, the issue of who should have surgery and how it should be performed has become the key

decision. On the basis of the suggestion that viruses can remain infectious and become dispersed in a plume of aerosolized conditions the risks to staff can be mitigated by patient triage and by modifications to operative technique5. The risks to operative staff should be minimized at all costs and that triage, testing, and protection should minimize surgery on patients who are COVID-19 positive, but that when emergency surgery is required for patients who are untested or COVID-19 positive, laparotomy is indicated to minimize the risks to operating room personnel by aerosols from laparoscopic surgery5. Our hospital has compiled the recommendations of WHO and Government of India to protect ourselves and our colleagues and patients while delivering health care.

METHODS

This study was conducted at our tertiary-care hospital. Retrospective study was conducted to collect information about number of patients visited surgery department and number of surgeries performed between March 2019 and October 2020. All patients were admitted to transit ward and in addition to routine and relevant investigations, nasal and/or throat swabs samples were collected for Covid-19 tests and sent for examination.

Protocols Followed for Management of Elective Surgery in NON-COVID Patients

All elective patients were admitted to transit ward initially. Swabs should be sent for all patients from there. After swab reports patients should be segregated into COVID /Non-COVID category. COVID POSITIVE swab patients were transferred to dedicated COVID ward. COVID Negative Swab patients should be transferred to respective unit wards. Repeat swab were sent for these patients from their respective wards 72 hours before proposed surgery. All OT personnel were instructed to follow COVID sanitisation protocols on entry to OT with repeated hand washing, social distancing and adequate protective gear. Visiting relatives of the patients insisted to undergo COVID test and have COVID Negative swab report prior to entry to OT/wards.

Protocols Followed for Management of Elective Surgery in COVID Patients

All emergency & invasive procedures – If the reports were inconclusive or delayed, surgeries were performed with all safety precautions. We considered them as COVID positive and tested (CT chest, CBC, LDH, AST/ALT). If these tests were well within normal, proceeded with routine OT precautions and performed surgery. All COVID-19 positive patients were operated in separately designated COVID POSITIVE operation Theatre.

If COVID Positive and Surgery could not be postponed – Patients were operated with following Measures:

Stopped Positive pressure & smoke extraction , intubation & extubation done in isolation room, minimal staff were permitted all wearing – PPE kit, N-95 respirator , face shield, double/ triple gloves, shoe cover, water resistant gloves.

PPE was made compulsory for all OT staff. Minimum 2 hours gap was maintained between two surgical procedures. Donning of PPE was done in OT room and Doffing was done in wash room. Laminar flow AC was not be started before intubation. Our OT's have negative pressure facility and smoke evacuation system. Post surgery all anaesthetic instruments to be cleaned with 1 % Na hypochlorite sol. OT slipper shall be washed with soap water immediately post surgery. Stretcher shall be sprayed with 1% Na hypochlorite solution.

High cleaning of the entire OT by Cleaning / Housekeeping staff wearing N-95 respirator, goggles, gown, heavy duty gloves, boots and hood was followed.

RESULTS

All age group of patients were included in this study. Patients visited surgical OPD in PMCH in year 2019 were 50166 and in year 2020 were 33217, which shows less number of patients visited in 2020. Significantly less number of patients visited the surgical OPD in April and May 2020 and subsequent months showed improvement in patients visit [Chart 1].

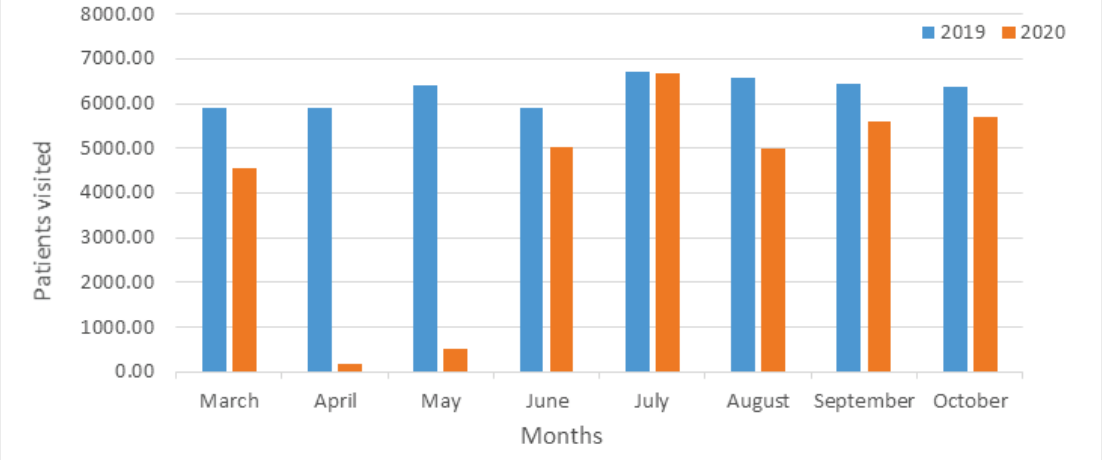

Chart 1. Patients visited OP surgery department, PMCH

Total number of patients admitted in surgical side in the year 2019 were 7664 and in the year 2020 were 4230. Patients admitted in the month of April (849) and May (864) in the year 2019 were more compared with corresponding months [April (28) and May (107)] in the year 2020 because patients with urgent need for treatment were admitted during April and May of year 2020 [Chart 2].

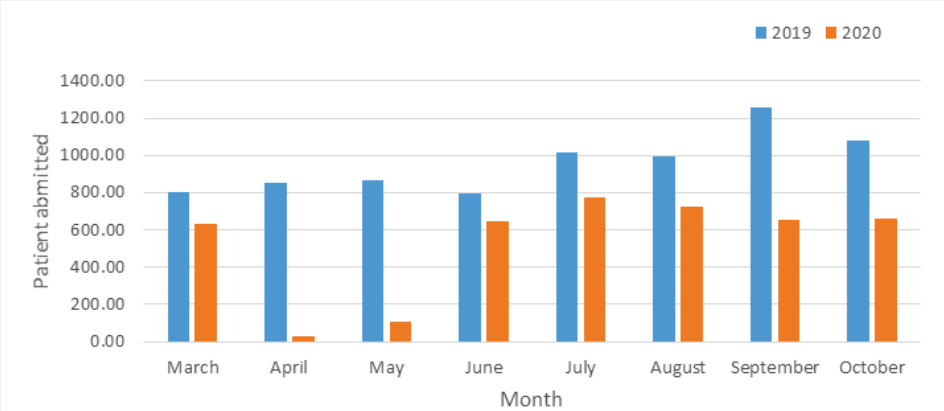

Chart 2. Patients admitted in surgery department PMCH

Major surgeries performed in 2019 were 3738 where as in 2020, 2508 major surgeries were performed. During lockdown in April (22) and May (30) of year 2020, only 52 major surgeries were performed [Chart 3].

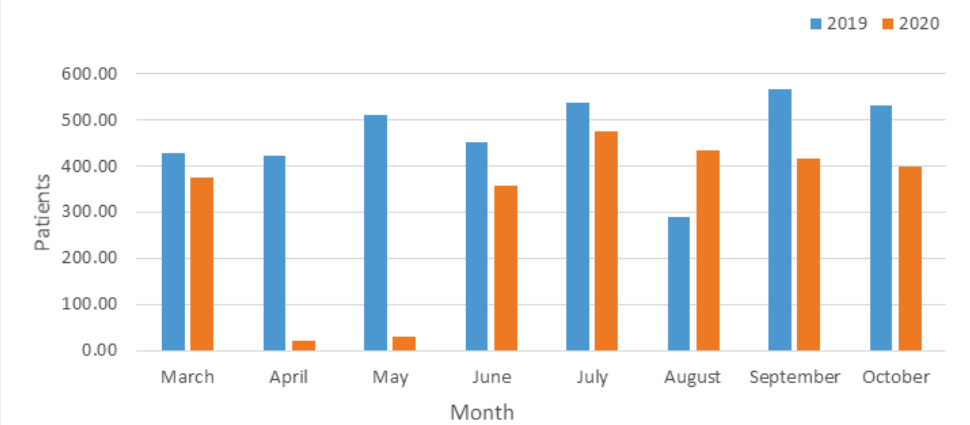

Chart 3. Major surgeries performed in Surgery Department PMCH

Minor surgeries performed in 2019 were 7320 and in the year 2020, 4566 minor operations were performed. During lockdown in the month of April (3) and May (45) in 2020, only 48 minor surgeries were performed [Chart 4].

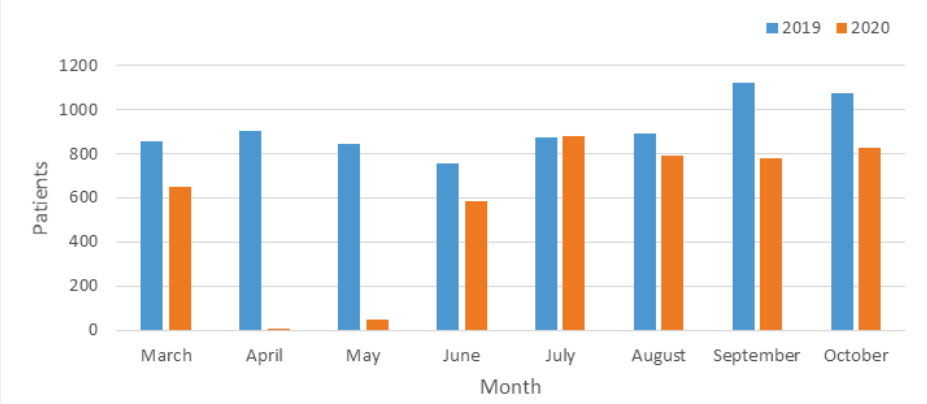

Chart 4. Minor surgeries performed in Surgery Department PMCH

The total numbers of major surgeries performed in year 2019 were 3738 and in year 2020 were 2110. Total number of minor surgeries performed in year 2019 were 7320 and in year 2020 were 4566 [chart 5]. The sharp reduction in minor operations performed in 2020 in comparison to 2019 is because large number of minor surgeries were not life threatening and hence postponed [Chart 5].

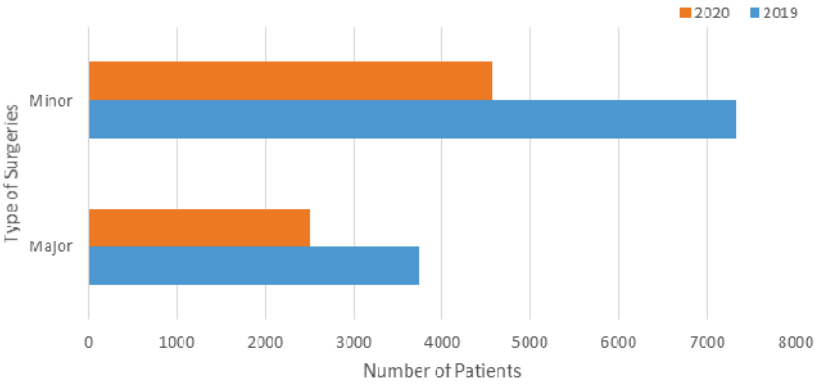

Chart 5.Comparision of total (major and minor) surgeries performed in 2019 and 2020

DISCUSSION

Corona Virus Disease (COVID-19) is an infectious disease caused by a newly discovered Severely Acute Respiratory Syndrome Corona virus -2 (SARS–CoV-2) that cause illness ranging from common cold to more severe diseases leading to death6. The mode of spread of these viruses are by respiratory droplets & contact (direct/indirect) though SARS- CoV-2 remained viable in aerosols under experimental conditions for at least three hours.

Suspected individuals are all symptomatic individuals who have undertaken international travel in the last 14 days or symptomatic contacts of laboratory confirmed cases or symptomatic healthcare personnel (HCP) or hospitalized patients with severe acute respiratory illness (SARI) (fever AND cough and/or shortness of breath) or asymptomatic direct and high risk contacts of a confirmed case (should be tested once between day 5 and day 14 after contact) 6. Symptomatic refers to those having fever/cough/shortness of breath and direct and high-risk contacts include those who live in the same household with a confirmed case and HCP who examined a confirmed case6.

Good infection prevention & control practices should be adhered by all categories of Healthcare workers (HCW) at all times of patient care as they are at a higher risk of infection. The Standard recommendations to prevent infection spread include standard precautions like basic hand hygiene, use of appropriate personal protective equipment (PPE kits), respiratory etiquettes, environmental disinfection, linen handling, sharps precaution and waste management.

COVID-19 Pandemic changed Surgical Practice and made us to innovate rapidly. We begin to share our knowledge, innovate and learn from our international colleagues to improvise our preventive techniques, with webinars and publications5. We learned a lot of life saving information7. Operation room staff is at higher risk of getting COVID-19 infection and spreading further to other patients also. Current Surgical Practice is more devoted to reduce risk to patients and staff with minimal exposure possible.

Hospitals have reduced number of non-emergency surgeries to minimise exposure to virus and utilise available resources for COVID-19 patients7.

We strongly recommend practicing Universal COVID precautions, triage, testing and use of personal protective equipment. Minimal person should be allowed to enter the operation theatres. Negative pressure ventilation helps to stop spread of aerosols in OT.

Adopting new innovative technique and educate hospital staff is key to fight against COVID Pandemic.

CONCLUSION

Our study suggest that surgeries performed during COVID Pandemic were less in number, contrast seen in months of April and May. Surgeries were postponed if it did not affect quality of life. Adopting new innovative practice, universal COVID precaution and proper use of protective equipment can allow us to halt transmission of virus.

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