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Covid 19 Vaccination:
India Gearing up for the Biggest Vaccination Programme in its History

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From the Desk of the Chief Editor

COVID-19 Vaccination: Effort towards ending the Pandemic

The World is in the midst of COVID-19 Pandemic. As World Health Organisation (WHO) and partner countries work together on the response- tracking the pandemic, advising on critical interventions, distributing vital medical supplies to those in need- they are racing to develop and deploy safe and effective vaccines.

Vaccines save millions of lives due to various diseases each year, vaccines work by training and preparing the body's natural defences –the immune system- to recognize and fight off the viruses and bacteria they target. As of 06 March 2021, at least eight different vaccines across three platforms have been rolled out in various countries. Vulnerable populations in all countries are being given highest priority for vaccination. At the same time more than 200 additional vaccine candidates are under development, of which more than 60 are in clinical development .COVAX is part of the ACT Accelerator, convened by CEPI,GAVI and WHO, aims to end the acute phase of COVID-19 Pandemic by speeding up the development of safe and effective vaccine against COVID-19.

Vaccines are a critical new tool in the battle against COVID -19 and it is highly encouraging to see many vaccines proving successful .India has already rolled out two vaccines against COVID-19 for its citizens from 16 January 2021 onwards. India's drug regulator has given emergency use approval for Oxford-Serum Institute's vaccine ,Covishield and Bharat Biotech's, Covaxin.

Covishield is a Recombinant Chimpanzee Adenovirus vector vaccine encoding the SARS-CoV-2 spike(s) glycoprotein with technology transfer from AstraZeneca/Oxford university (Ch AdOX1 n CoV-19 Vaccine).Covaxin is a whole virion inactivated SARS-CoV-2 vaccine. The overall efficacy for Covishield has been found to be 72% and for Covaxin,81%.Both the vaccines can be stored at 2 to 8 degrees Celsius in refrigerator. Two dosages of 0.5 ml each are required to be given by intra muscular route,28 days apart. So far around 1.9 Crores dosage have been given without any reported serious adverse reactions.

Though the safe and effective vaccines will be a game changer ,but, for the foreseeable future, we must continue wearing masks, maintain physical distancing, avoid crowded places, wash hands frequently and follow proper respiratory hygiene(coughing in the sleeves).Being vaccinated does not mean that we can throw caution to the winds and put ourselves and others at risk, particularly because it is still not clear the degree to which the vaccines can protect, not only against disease but also against infection and transmission.

ACKNOWLEDGEMENTS

I would like to place on record my sincere thanks to Shri Rahul ji Agarwal, Chairman, Pacific Medical University, Udaipur ,Mrs Priti Agarwal, Executive Director, PMCH, Dr A P Gupta, Vice Chancellor, Pacific Medical University, Dr D P Agarwal ,Advisor to the Chairman and former President PMU and my entire team as well as contributors of research papers for their whole hearted support in bringing out third issue of this Journal.

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Editorial

The Future of Medicine

Vision is the act or power of anticipating that which will or may come to be. Also, any vision of the future requires an appreciation of the past and drawing inspiration from it. From the nineteenth-century benches of microbiologists Louis Pasteur and Robert Koch to the sequencing of the human genome, the past 200 years have seen medicine advance at an extraordinary pace. People are now enjoying longer and healthier lives than their ancestors. But as any medical researcher will attest, ambitions go much further.

Historically, the availability of medical treatments and facilities has paralleled life's other “luxuries” and so was only available to the elite. However, most remedies and would-be cures were not very effective prior to the 20th century, with few notable exceptions. Among these, Digitalis, an extract from the Purple Foxglove (digitalis purpurea) was first used in the dark ages as a poison until its discovery in 1775 for the treatment of heart failure. More recently, the anti-malarial drug Artemether was extracted from the herb Qinghao, which had been used in China for over 2000 years.

In the 1920s, the emergence of more consistently effective pharmaceutical agents began, led by analgesics, including Aspirin and Morphine, Insulin, and Anti-infective agents such as Sulphonamides and Penicillin. However, it was soon realised that these potent new chemicals also carried risks. In 1937, investigators discovered, via a spate of reports to the American Medical Association, that an improperly prepared mixture of Elixir Sulfanilamide had killed over 100 people, prompting public outrage. This disaster led to the 1938 Federal Food, Drug, and Cosmetic Act to ensure that new drugs would be tested on animals and reviewed by the Food and Drug Administration. Subsequent amendments to the 1938 act introduced prescriptions for certain drugs (1951) and legislated for clinical trials (1962). Today, the post marketing surveillance of new medicines is much more sophisticated, and includes physician reports, patient outreach, Risk Evaluation and Mitigation Strategy programs, and the monitoring of electronic medical records. Such systems allow for enhanced safety via warning systems and the orderly withdrawal of drugs, though even this system suffers global inconsistencies.

As the pharmaceutical industry developed more effective medicines, quality of life of those suffering from many diseases clearly improved, as Corticosteroids controlled inflammatory diseases, Antihistamines controlled allergies, Xanthines aided asthma patients, and options were offered to mental illness sufferers as well. Indeed, the human life span lengthened as infectious disease, heart disease, lung disease, and increasingly, cancer could be ameliorated through a combination of public health initiatives and better medicines. Today, medicines are intrinsic in all our lives. However, rather than treating true disease pathology, the most intensively treated conditions generally at the population level are pain, high cholesterol, depression and diabetes, arguably compensating for lifestyle changes brought about by dietary changes and a more sedentary lifestyle and due, in part, to the business models that encourage "blockbuster" drugs.

Medicines need to be readily available and affordable. There is widespread recognition that the existing global systems for innovation and access to medicines need reform. "Market failures" prevent new drugs from being developed while factors such as high prices of medicines, weak health systems, corruption, and a lack of transparency, hinder efforts to distribute the medicines already available.

Antibiotics, as a class, and their usage warrant consideration in their own right, especially given that their efficacy relies partly upon the extent of their use in other patients.

Looking forward, global spending on pharmaceuticals is increasing due in to improved access, breakthrough innovations and cheaper drugs. A large portion of the growth is also occurring in India, China, Brazil and Indonesia, the so called "pharmemerging markets".

In the future, it is very likely that the use of medicines will be greatly influenced by technology, consumer education and self-awareness regarding lifestyle and diseases. Technology will be a key driver for change in the future, enhancing the medical skill-set of healthcare professionals facilitating updates and change in parallel with consumers. This could influence the way people use medicines and how healthcare professionals manage patients. Novel change could include tailor-made drugs on the basis of pharmacogenomic data or medicines manufactured locally and on demand through 3D

printing. Future personalised sensors could measure clinical parameters and blood biomarkers transmitting data in real time to a cloud or, for instance, sending alerts when a stroke is in its earliest stages.

In the old model of medicine, patients' health data was collected only intermittently, primarily in clinic visits, and scattered among paper files and electronic medical record systems. Today there's a far better option: personal technology that can monitor vital signs continuously and record health data comprehensively.

Flexible, electronic medical tattoos and stick-on sensors can take an electrocardiogram, measure respiratory rate, check blood sugar, and transmit results seamlessly via Bluetooth. It's mobile vital sign tracking, but at a level once found only in an intensive care unit.

Hearing aids or ear buds with embedded sensors will not only amplify sound but also track heart rate and movement. Such smart earpieces also could be integrated with a digital coach to cheer on a runner, or a guide to lend assistance to dementia patients.

Smart Contact Lenses in the future will be packed with thousands of biosensors, and engineered to pick up early indicators of cancer and other conditions. Lenses now in development may someday measure blood sugar values in tears, to help diabetics manage diet and medications.

A monitoring patch on a pregnant woman's belly can detect uterine muscle movement, the better to know when labor is progressing.

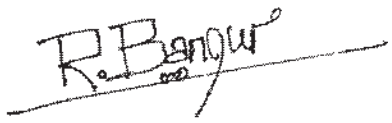
The widening array of digital tools paired with AI analytics almost certainly will boost diagnosticians' accuracy and speed, improving disease detection at early stages and thus raising the odds of successful treatment or cure.

There lies immense opportunity for the “data shadow” of smart-phones to aid in detecting depression, for patient-reported outcomes to improve self-management, for clinical trials to make their quantum leap, and for the value perceived by patients to flow back into the learning health system, perhaps supported by new forms of machine learning.

Beyond the colorful history that belongs to the emergence of pharmaceuticals in the last century, there will be an ongoing evolution in response to changing needs driven largely by consumer demand and expectations.

Today, as we are all aware, control of the music industry and the lay press has more or

less moved to the consumer. Such a move in the field of medicines might lead to accelerated discoveries and innovation that could theoretically outpace the entrenched players providing consumer benefits via lower prices and more rapid access as well as global equity. If we let patients help, they may well lead us into the future of medicine.



(Ravindra Bangar)
Editor

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PJMHS
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INDEX

Research Papers

Surgery during Covid-19 Pandemic in Pacific Medical College and Hospital **01**
Dr. Gurudutt Bhaskar Basrur, Dr. Devendra Pratap Punia

A Study of Prevalence of Allergic Rhinitis with SFAR Score and its Clinical Profile **06**
Dr. Richa Gupta, Dr. P.C. Jain, Dr. Sonali Jain

Case Reports

Delusion of Grandiosity Incongruent With Mood In Schizophrenia: A Rare Phenomenon **11**
Dr. Harmandeep Kaur, Dr. S. G. Mehta, Dr. Bhakti Murkey, Dr. Sangamjyot Kaur,
Dr. Versha Deepankar, Dr. S. K. Sharma

Impact of Psychosocial Stressors on Outcome of Major Depressive Disorder: A Case Report **15**
Dr. Sangamjyot Kaur, Dr. S. G. Mehta, Dr. Bhakti Murkey, Dr. Versha Deepankar,
Dr. Harmandeep Kaur, Dr. S. K. Sharma

Role of Psychosocial Factors in Management of Psychosomatic Disorder: A Case Report **19**
Dr. Versha Deepankar, Dr. S. G. Mehta, Dr. Bhakti Murkey, Dr. Harmandeep Kaur
Dr. Sangamjyot Kaur, Dr. S. K. Sharma

A Rare Case of Acute Myocarditis with Dengue Fever **23**
Dr. Tasha Purohit, Dr. K. R. Sharma, Dr. Maninder Patni, Dr. R. K. Sharma, Dr. Jagdish Vishnoi

Primary Tuberculosis of Breast: A Case Report **26**
Dr. Gurudutt Bhaskar Basrur, Dr. Ripudamanjit Kaur

Left Branchial Cleft Fistula with Ear Discharge in Elderly Male : A Case Report **29**
Dr. Richa Gupta, Dr. Rajendra Gorwara, Dr. Prerna Mandowara, Dr. Ravishu Kandhari
Dr. Drishti Nagpal

A Case Study on Tennis Elbow **31**
Dr. Narendra Tiwari (PT), Pankesh Kumar Sharma, Veer Singh Deora

Review Articles

Eye Stroke – A Warning Sign of Concurrent or Future Brain Stroke **33**
Dr. Virendra Singh Lodha

Commentary

The Curious Phenomenon of Doctor Shopping! **36**
Dr. Bhakti Murkey, Dr. Sureshkumar Mehta, Mr. Neeraj Kumar Tripathi, Dr. S K Sharma

Editor's Picks

New Drug Approvals **40**

Spectacular Medical Technology Innovations **45**

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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].

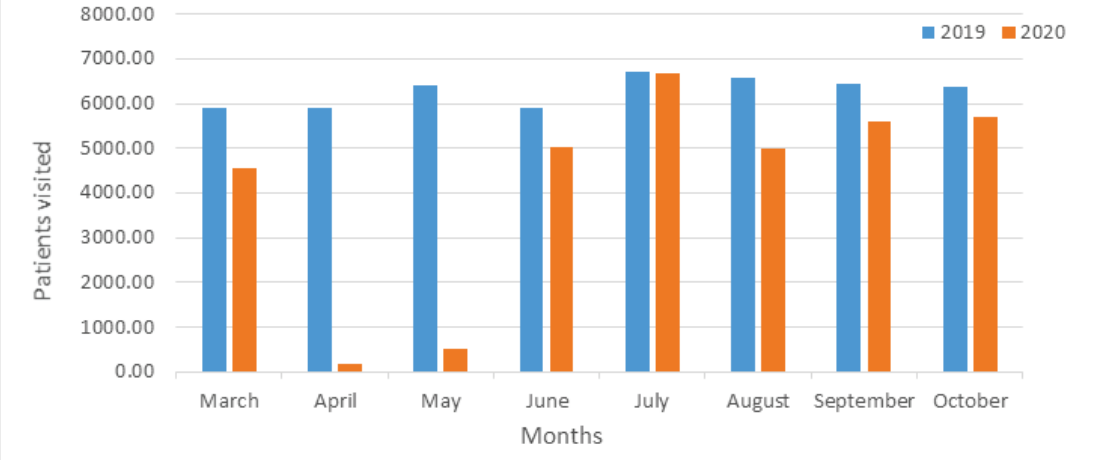

Chart 1. Patients visited OP surgery department, PMCH

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].

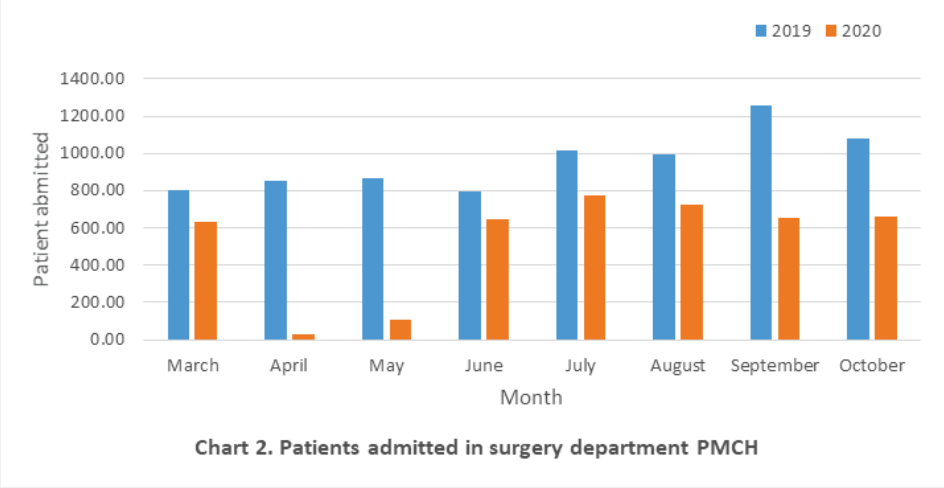

Chart 2. Patients admitted in surgery department PMCH

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].

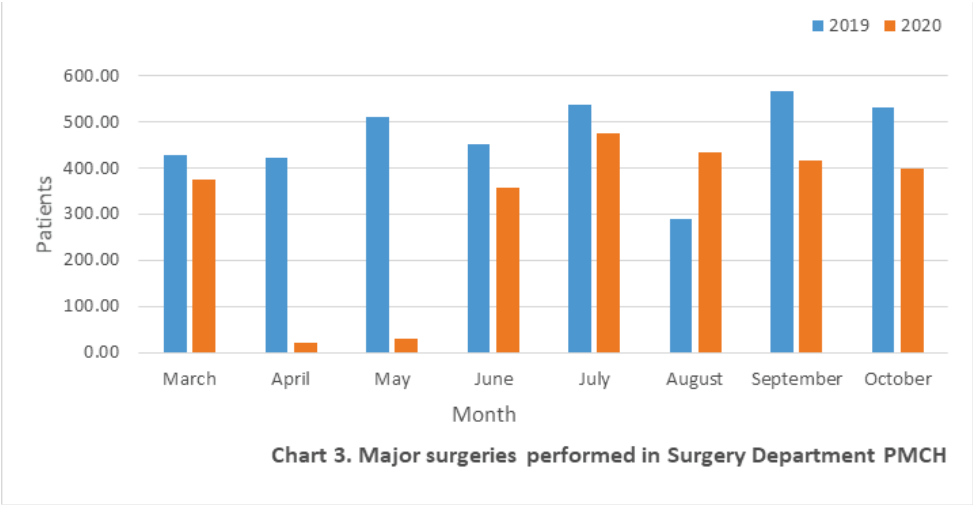

Chart 3. Major surgeries performed in Surgery Department PMCH

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].

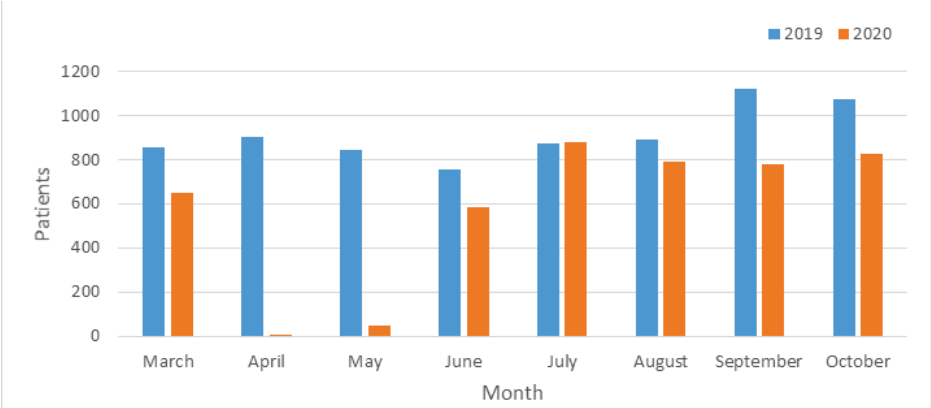

Chart 4. Minor surgeries performed in Surgery Department PMCH

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].

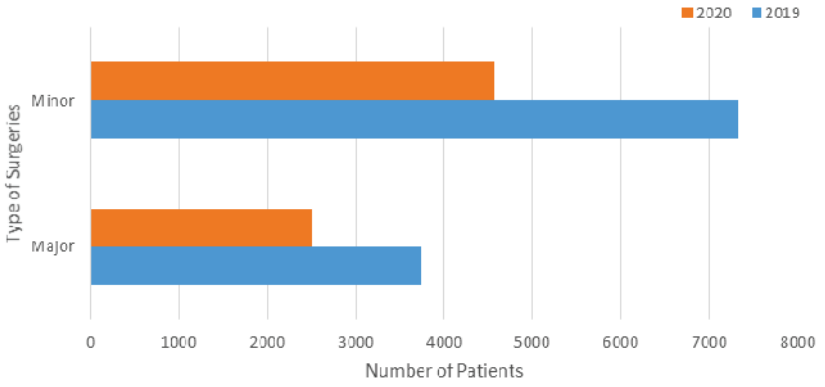

Chart 5.Comparision of total (major and minor) surgeries performed in 2019 and 2020

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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Research Paper

A Study of Prevalence of Allergic Rhinitis with SFAR Score and its Clinical Profile

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ABSTRACT

Background: The prevalence of Allergic Rhinitis (AR) has increased recently. The symptoms of Allergic rhinitis hamper the daily activity of an individual causing difficulty in concentrating at work. Before treating the patient of AR thorough symptomatic assessment should be done so that there is a relief in symptoms of the patient and ability to carry out work is efficient. Symptomatic score for Allergic rhinitis (SFAR) questionnaire is a scoring tool that is cheap, accessible and efficient to assess AR symptoms and its severity. It can be easily carried out on OPD basis and a faster way to treat the patient efficiently early.

Objective: To study symptomatic presentation of allergic rhinitis using SFAR scoring.

Design: Prospective

Period: From February 2019 to February 2020

Material and Methods: All patients that presented to ENT Outpatient department with allergic rhinitis were evaluated and assessed on the basis of SFAR scoring.

Result: In the present study of 138 patients 72(52.17) % were females while 66 (47.83 %) were male. Majority of cases were from age group of 21-30 years .House wives were found to be most commonly affected. Maximum number of patients 70 (50.72 %) presented with moderate to severe AR.

Conclusion: The presentation and the severity of AR of the patient using easy and efficient SFAR scoring can help in symptom specific treatment of the AR that in turn will improve patient well being.

Key Words: Allergic Rhinitis, Intermittent, Persistent, SFAR.

INTRODUCTION

Rhinitis can be broadly subdivided on the basis of etiological factor as allergic and non-allergic rhinitis (infectious, occupational, drug-induced, hormonal, irritant, tobacco, NARES, vasomotor).

Allergic rhinitis affects large number of people. The commonest type of rhinitis is allergic rhinitis with almost 10-20 percentage of population getting affected and rising trend of the disease among people.[1]

It is IgE mediated inflammation caused by inhaled allergens. It involves upper and lower respiratory tract mucosa as well as the conjunctiva. When an allergen present to the antigen presenting cell (dendritic cell) forming major histocompatibility complex (MHC-class II).The causes naive CD4 T cell to form activated allergen specific TH2 cell that secretes cytokines (IL-3,IL-4,IL-5 andIL-9). This causes activation of B-cell to release IgE to activate eosinophil, neutrophil and mast cell.

Nasal congestion, nasal itch, rhinorrhoea and sneezing are classic

symptoms due to inflammatory mediators like histamine, serine, proteases, heparin, leukotriene C4 prostaglandin D2, thromboxane and PAF.[2]

It can have early reaction (30 min) such as sneezing and rhinorrhoea or late reaction (6 Hrs) such as nasal obstruction. It can be subdivided as per the presentation as intermittent/persistent or mild/moderate/severe or seasonal/perennial. The Allergic Rhinitis and its Impact on Asthma (ARIA) guidelines have classified "intermittent" allergic rhinitis as symptoms less than 4 days per week or for less than 4 consecutive weeks, and "persistent" allergic rhinitis as more than 4 days/week and for more than 4 consecutive weeks.[3]

The moderate/ severe variety is termed so if they significantly affect sleep or activities of daily living, and/or if they are considered bothersome and mild when patients have no impairment in sleep and are able to perform normal activities. Allergic rhinitis hampers daily activity of the individual, affecting physical, mental and social wellness .The questionnaire to diagnose AR in a population properly is SFAR questionnaire.[4]

Scoring criterion	Score	Cumulative score
Nasal blocks	1	
Running nose	1	2
Sneezing	1	3
Perennial Cough	1	4
Seasonal/Perennial	1	5
Nasal symptoms with itchy-watery eyes	2	7
House Dust trigger nasal symptoms	1	8
Pollen trigger nasal symptoms	1	9
Perceived allergic status	2	11
Previous medical diagnosis of allergy	2	13
Previous positive tests of allergy	1	14
Family history of allergy	2	16
Total score		**16**

Specific allergic triggers can be diagnosed by Skin-prick testing. It involves pricking the skin through the drop of allergen e.g., pollen, animal dander on forearms or back. Early reaction (15–20 min) i.e. a wheal-and-flare response will occur if the test is positive. Other test such as Phadebas radioallergosorbent test (PhRAST) and radioallergosorbent tests (RASTs) measure specific IgE levels against particular allergens.[5] Therapeutic options are from simple avoidance measures and nasal saline irrigation to use of oral antihistamines, intranasal corticosteroids, combination intranasal corticosteroid/antihistamine sprays, leukotriene receptor antagonists (LTRAs), and allergen immunotherapy.[6]

However, Intranasal corticosteroids like fluticasone furoate, beclomethasone, fluticasone propionate, triamcinolone acetonide , mometasone furoate , ciclesonide and budesonide and Second-generation oral antihistamines like fexofenadine, loratadine, cetirizine, desloratadine) are the mainstay of treatment.[2]

MATERIALS AND METHODS

The present study was done on 627 cases between February 2019 to February 2020. All the patients and their attendants irrespective age and sex who attended ENT OPD, PMCH, Udaipur were taken for the study. Detailed history and extensive clinical examination was done to evaluate the patients. The detailed questionnaires were given to them and were asked to return it after filling it.

The patients were assessed on the basis of SFAR scoring. Also the patients were categorised on the basis of the symptoms presented as mild, moderate/severe as per ARIA guidelines.

Results

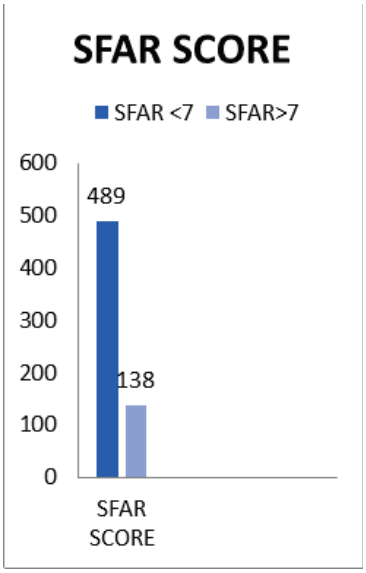

Figure 1- As per SFAR Score

In present study females were 72 (52.17) % while male were 66 (47.83) %.
The male to female ratio was 1.09:1 (Figure 2).

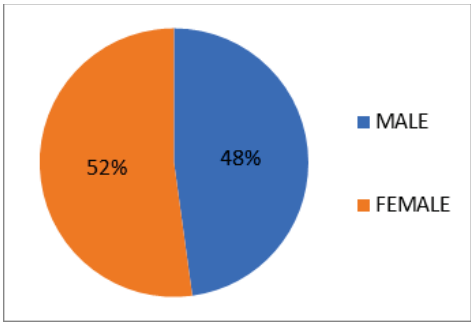

Figure 2 - As per Gender Distribution

The most common age group found to be affected was 21-30 years with 80 (56.9 %) patients. Youngest patient was 10 years old while oldest was 65 years old.

As per occupation of patients maximum patients were housewives 68 (49.27 %), farmers 44 (31.90%) miscellaneous 20 (14.49 %), business and clerk each had 3 patients (2.17%). (Figure 3)

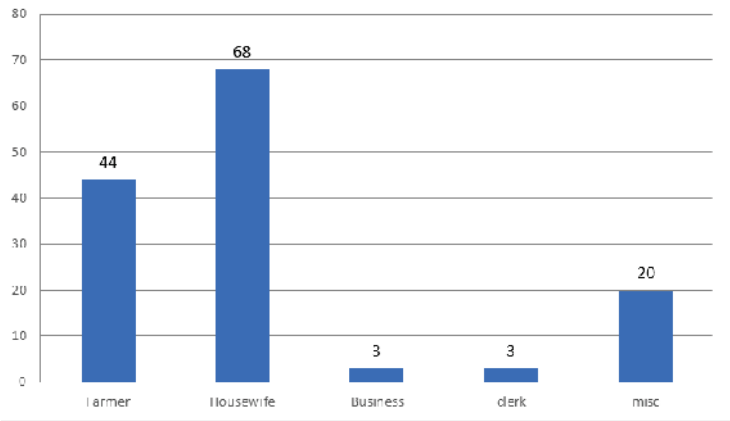

Figure 3 - As per Occupation

(X Axis: Occupation, Y Axis: Number of patients)

It was found that patient had more nasal complaints with sneezing 60 (44.2 %) nasal blockage 44 (31.8 %), running nose 30 (21.7 %) as compared to rest other symptoms.

The most common etiology was found to be household dust.

The mild AR was present in 42 (30.43 %) patients; moderate to severe AR was present in 96 (69.57 %) patients (Figure 4)

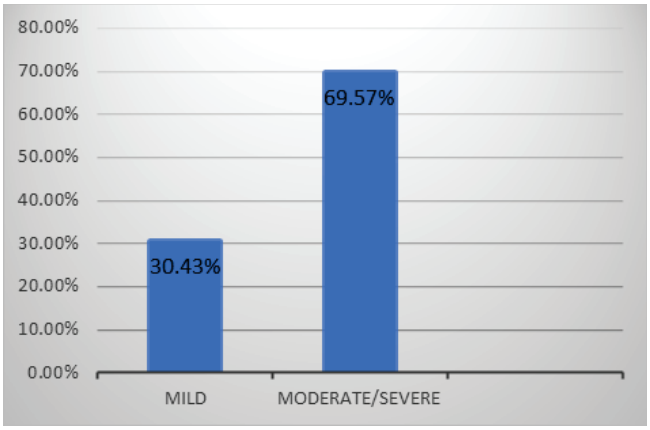

Figure 4 – As per Severity of AR

(X Axis represents severity of AR; Y Axis represents percentage of patients)

The persistent AR was seen in 56 (40.58%) and intermittent AR was seen in 82 (59.42%). (Figure 5)

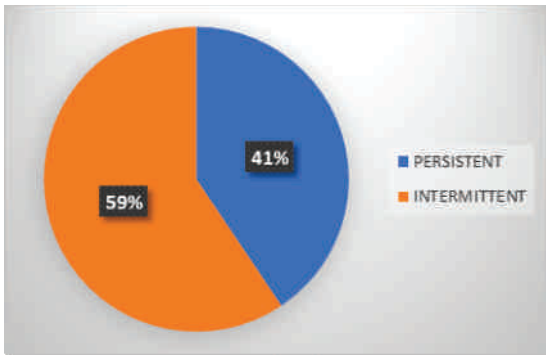

Figure 5 – As per Seasonal Variation

DISCUSSION

In present study the prevalence of AR was found to be 22 % using SFAR score. The studies done in other countries like Taiwan showed prevalence of 26.3 % [7].

In present study females were found to be predominant which is in accordance with previous study.[8]

Household dust, exposure to cold air, morning hours, history of smoking, presence of pets at home, family history of Allergic rhinitis were found to be the most commonly identified trigger factors. House dust-mite is the commonest allergen and the patients of allergic rhinitis are more prone to it.[9]

The commonest age group was found to be 21-30 year in our study. The past study [10] shows the similar findings and study done by Novina et al [9] showed slight different data with 23-34 years as more common age group. This difference might be because of prevalence of different weather conditions at various places in countries. The ecological diversities, status of living, socioeconomic factors, difference in population size contributes to range of diseases from low to high prevalence. This constitutes the loss of working hours for adults & loss of school days for children. The work efficiency is affected and leads to economic burden. Also this can lead to change in jobs and places for some people. Among the school going children there is increase in prevalence in AR rates .[11]

The prevalence of allergic rhinitis was found to be more in urban area 91 (65.94 %) as compared to rural areas 47 (34.06 %). The people living in urban areas have smaller families, different diet and lifestyle as compared to rural people. Also the consumption of antibiotics for minor ailments seems to be more in urban people which affects the existing healthy microorganisms of body and alters the natural flora. [12]The people exposed to farming develop a protective shield from several allergic diseases.

The number of patients as per severity of allergic rhinitis was more in moderate to severe variety followed by mild variety. Least cases were seen in severe rhinitis as compared to previous study done by Lee JE et al [13] The presence of variety of allergens in different parts of countries and in different parts of same country is considered to be responsible for varied presentation of allergic rhinitis. The patients with moderate to severe had history of treatment received prior before proper diagnosis as compared to patients with mild symptoms.

In present study the prevalence of intermittent AR cases was found to be predominant as compared to persistent cases. The studies done in past showed result of 62.8 % of intermittent cases. [14]

The treatment of allergic rhinitis varies from avoidance of exposure to allergens, identification of possible allergens, preventing allergy and symptomatic treatment by drugs.[15]

CONCLUSION

This study helped us in establishing that SFAR Score is a cost effective and convenient method to diagnose allergic rhinitis even in remote areas.

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Case Report

Delusion of Grandiosity Incongruent With Mood In Schizophrenia: A Rare Phenomenon

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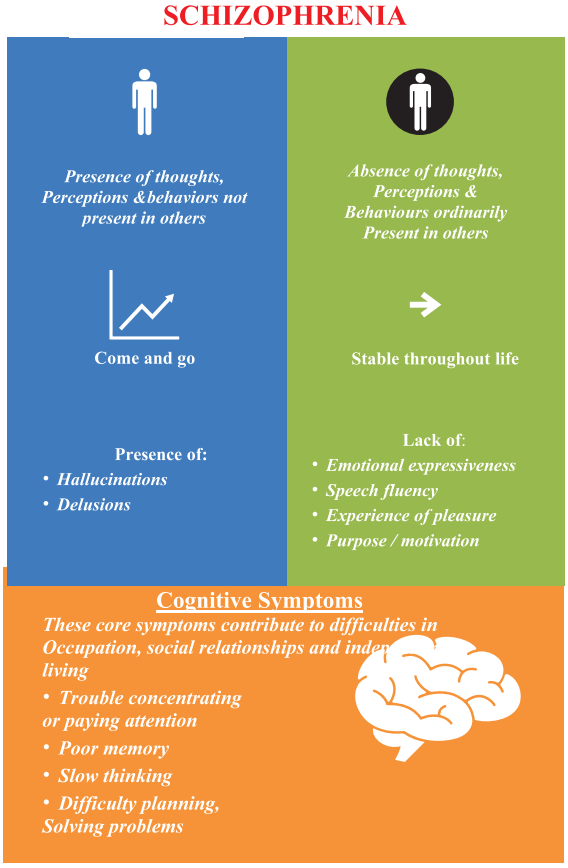
ABSTRACT

Schizophrenia is a known as a severe, chronic psychiatric disorder which affects a person's thoughts, perceptions, feelings and behaviour. The causal relationship between psychiatric disorders and chronic cannabis use is a debatable topic. Cannabis use has shown to affect a person's mental health, often presenting with symptoms resembling schizophrenia or mood disorders. There are evidences in its support but the connections are not completely understood. This article reports a case of a young adult presenting with depressive symptoms, which further evolved into psychosis, perhaps secondary to an underlying use of cannabis for a long period of time. This also discusses the rare phenomenological presentation of delusion of grandiosity in the absence of accompanying mood symptoms in the background.

Keywords : Depression, Mania, Cannabis, Schizophrenia, Grandiosity

INTRODUCTION



Mood disorders primarily influence one's emotional wellbeing through experiences of long periods of significant sadness, happiness, or both. Transient mood changes are normal, but symptoms must be

present for longer periods (weeks or months) to be diagnosed with a mood disorder. Mood disorders can adversely affect a person's routine, as well as occupational or interpersonal functioning. Depression and Bipolar Disorder are the most common mood disorders. Depression usually presents with sadness, loss of interest or pleasure, feelings of guilt or low self-worth and disturbed sleep. Mania presents as increased, rapid and big talk, decreased need for sleep, distractibility, more goal-directed activities and psychomotor agitation.[1,2] Similar presentation can however, be also observed in the initial phase of schizophrenia. About 75% of people with schizophrenia experience a prodromal phase, lasting from few weeks to even several years. This presentation can be similar to depressive illness when symptoms of memory problems or difficulty with attention and staying focused are found. Other symptoms can be mood swings, feelings of anxiety or guilt or mistrust in others. Suicidal thoughts can also be occasionally present. Other signs of prodrome include lack of energy or interest, sleep problems or reduced socializing, along with impairment in work or school performance. There could be noticeable changes in how a person looks and keeping up with hygiene might become an issue. The first rank symptoms of psychosis like auditory hallucinations or thinking that other people can hear their thoughts can be present.

Grandiosity is a core symptom of bipolar disorder, wherein a person often feels larger-than-life and harbours a feeling of superiority over others. Grandiosity is seen as an exaggerated state of one's importance, power or identity, despite little supporting evidence. Around two-thirds of bipolar disorder patients are known to experience grandiose delusions at some point of time. However, about half of those diagnosed with schizophrenia and many suffering from substance use disorders also experience grandiosity as an illness manifestation.[3] In this case, a polymorphic presentation of all the above symptoms created a diagnostic dilemma on cross sectional examination. Longitudinal assessments later helped with postulating the mood symptoms to be a part of prodrome of an evolving schizophrenic illness.

CASE PRESENTATION

An 18-years young man presented to the OPD with symptoms of increased worrying and decreased sleep since past 2 months, followed by anger outburst, irrelevant talk, crying and laughing spells and suspiciousness, for 5 days. The apparent stressors at the onset were heavy workload at his first job/ working experience and his mother not approving of his relationship with his girlfriend. The patient was apparently alright 2 months back when he started working at one of his father's businesses. According to the patient's father, the boy felt out of place, was constantly worried about not being familiar with work and not able to do things on his own. He seemed to have lost his confidence when co-owner constantly complained to his father about him being not good enough in Hindi language while most of the work required Hindi reading and writing skills. He often compared himself with his elder brother. These difficulties lasted for about 2 months following which he started experiencing sleeplessness. His sleep has reduced to 3-4hrs/day since last 5 days which was earlier 8-9hrs/day. He had problems in both initiating and maintaining sleep. The father added that since last 5 days he also started talking excessively and most of his talks did not make much sense. For example, when his mother would ask him to do some chores, he would reply with “hari hari om”. It was also noticed that he would laugh and cry without any apparent reason. When enquired from the patient, he mentioned he felt suspicious about something wrong happening with him, but the context was not specified. He said he often talks to himself about these wrong-doing sand he apologises to God. He added that he felt like he is supreme and has become very intelligent since last few days. He stated “mai sach jaan gaya hu, mai kuch krna chahu toh kar sakta hu”. He said he was able to read minds of people sitting next to him and also said that people can read his thoughts. His father further added that he would become aggressive without any significant provocation. A day before consulting with us, he got up in the middle of night with a knife in hand, pointing towards his family members. He was standing in a boxing posture, with protruding eyes and grimacing teeth and hopping movements. This lasted for nearly 30 seconds and nobody was hurt during this episode. This incident prompted his parents to consult in the Psychiatry OPD. Further enquiry revealed a history of substance use. He started using cannabis and alcohol under peer pressure, when he was 16years old. Since past 1 year, he had been smoking cannabis on a daily basis and in the last 2 days he had smoked in greater quantities than usual. He would typically drink a few beers on the weekends (varying amounts). His father reported about his occasional vomiting after drinking in binges. No history of passing out or withdrawal seizures or hospital admissions for the same was reported. He denied any other illicit drug use. The patient's functioning was impaired on social, occupational and interpersonal grounds. Before the onset of illness, he was described as a friendly person who enjoyed company of his friends and family get-togethers. However, his parents were unhappy with his social life and late-night outings. He used to avoid conversations with anyone when angry and used to keep things to himself. He enjoyed playing sports like boxing and swimming.

On examination he was conscious, calm, cooperative and well oriented to time, place and person. His eyes appeared to be red and he was frequently yawning. He appeared to be of his stated age. He was built athletically, tall, well-nourished but not groomed very well in context of his social setting and cultural background. His demeanour was guarded and rapport was built with difficulty. Throughout the interview he established eye contact, but did not sustain it. His psychomotor activity was reduced. His speech and language was non-spontaneous, comprehensible, and coherent and varied from relevant to irrelevant. Tone volume and pressure of speech were decreased. He reported his mood to be sad. Although his affect was euthymic and reactive, the range was labile and tearful at times. He had inappropriate smile during the interview and affect was incongruent to the thought content shared by the patient. His stream of thought was reduced and thought content included delusions of grandeur (I am very intelligent; I can read minds of people) and persecution (something wrong is happening with me). He denied inconsistently about experiencing auditory and visual hallucinations. He had poor insight into the reason behind these recent experiences but was willing to accept our help with the same (2/6).

On follow up, the parents observed that he felt nearly 50%

better on the prescribed medications but shared an incident wherein the patient spoke suspiciously of relatives in a recent family function, blaming them for pointing fingers at him, looking at him with protruding eyes and growling at him. He further added that the relatives were whispering and the context of conversation was that they wanted him to leave the place and disliked his presence in the gathering. Further conversation with the patient elicited absence of the delusion of grandiosity previously noted.

On the basis of history and examination, differential diagnoses of Prodromal Schizophrenia, Major Depression (with psychotic features), Substance-induced Psychosis and Bipolar Disorder (mania with psychotic features) were considered. The points in favour of prodromal phase of schizophrenia were the depressive mood, sleep disturbance, irritability, anger outburst and irrelevant talk. Although the major criteria for a depressive illness were met, this diagnosis was ruled out in the presence of frank positive symptoms of psychosis (delusions and hallucinations, including first rank symptoms). Substance-induced psychosis was ruled out due to lack of firm evidence of a temporal correlation with symptomatology and ongoing withdrawal period. Mania was a likely differential, but ruled out due to absence of sustained accompanying euphoric or irritable mood.

TREATMENT

When presenting to our OPD, the patient reported to have illness symptoms since approximately 2 months, with increase in severity for last 5 days. He was prescribed oral Olanzapine 7.5 mg at night and Clonazepam0.5mgon SOS basis for 15 days on his first visit. The family members were educated about the patient's illness, treatment options and expected course and prognosis. On the following visit, no adverse effects were reported and the treatment response was noted to be satisfactory. Treatment adherence and regular follow up were emphasized.

DISCUSSION

The concept of schizophrenia is an extremely old concept. Consistent with Emil Kraepelin's delineated symptomatology (1850) there is a standard course and outcome for the entity that he called as dementia precox. Later, Eugene Bleuler coined the term “schizophrenia” for the same clinical presentation. Schizophrenia is conceptualised as a neuro-developmental disorder that has an onset way before the particular presentation with frank psychotic symptoms. This period between latent onset and frank clinical presentation of symptoms is understood as the prodromal phase of schizophrenia. It is characterized by various changes or deterioration in the subjective experience or behaviour of a person and precedes the onset of actual psychotic symptoms. The concept of prodrome is retrospective, i.e. we cannot define it until there is an overt emergence of psychotic illness. These prodromal symptoms of schizophrenia could be often overlooked as they have a close resemblance with depression. Furthermore, social withdrawal, increased anxiety, difficulty concentrating, lack of motivation, changes to normal routine, neglect of personal hygiene and increased irritability may also indicate co-occurrence of multiple underlying psychopathologies. In this case, the onset of illness was with a similar presentation, confirmed to be a prodromal evolution of schizophrenia on longitudinal assessments.

The role of prolonged and concurrent psychoactive substance use in the form of cannabis smoking in this case can also not be overlooked. Cannabis use has been associated with both mania and acute psychosis through several studies, with grandiosity and irritability as the most prominent symptoms. [5-8] However, whether or not cannabis can cause schizophrenia and depressive disorder is debatable. The endo-cannabinoid system regulates neurotransmitters in the brain. Cannabis consumption potentially can disturb this regulation, causing inappropriate neuroplastic changes in the wiring of neurotransmitter circuits. Cannabis can cause complex interactions in transmission of dopamine, gamma amino-butyric acid (GABA) and glutamate in the brain, which can precipitate psychotic symptoms in vulnerable individuals.[7,8] An acute intoxication can present with redness of eyes, dry mouth, increased appetite and paranoia which was present in this case. Although the patient had no apparent genetic predisposition, smoking of cannabis since an early age was a risk factor for precipitating psychosis. The history of depressive symptoms earlier in the illness onset might have progressed to psychotic features due to the concurrent substance use, used as a coping method to allay his distress.

CONCLUSION

The above case intends to highlight the rare phenomenon of delusion of grandiosity without congruent mood changes, typically but rarely seen in Schizophrenia. Symptoms suggestive of different psychiatric illnesses (depression/ mania/ psychosis/ substance intoxication) were simultaneously present in this case, making it a unique clinical presentation. This report is an attempt to highlight the importance of identifying a delusion of grandeur in Schizophrenia, differentiating it with the grandiosity of a typical mood disorder, and optimizing the treatment accordingly, in view of early intervention and maximizing prognostic implications.

CONFLICTS OF INTEREST: None.

FINANCIAL SUPPORT: None.

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Case Report

Impact of Psychosocial Stressors on Outcome of Major Depressive Disorder: A Case Report

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ABSTRACT

Millions of individuals are affected by Depression, known as one of the most common mental illnesses worldwide. The role of psychological stresses in onset of depression and its numerous negative health outcomes is well established. The psychosocial impact of depression is deemed to be considered with respect to the psychological factors and social factors. However, taking a closer look at stress vulnerabilities in individuals is warranted for implementing adequate and appropriate interventions in management of depression. There are both pharmacological and non-pharmacological treatment modalities for management of depressive symptoms, of which the role of psychotherapy is considered to have a good potential. In addition, behavioural therapy, cognitive therapy and interpersonal psychotherapy are also considered to be efficacious. This case report illustrates how psychosocial stressors can impact presentation of major depressive disorder and describes the bidirectional nature of relationship between stress and mental health. This may help with better understanding of how mind-body therapies can benefit individuals with a higher risk of stress and/or Depression.

Keywords: Depression, Life events, Stress, Psychosocial Stressors.

INTRODUCTION

Mood is defined as an internal and persistent or sustained emotional state that impacts a person's perception of the world and resultant behaviour [1]. Affect is an outward manifestation of the mood. Mood disorders are a group of clinical conditions characterized by a subjective experience of distress and loss of sense of control. Depression is a mood disorder, which is the leading cause of disease burden across nations. It affects millions of individuals every year, particularly women. The lifetime risk of experiencing depression is estimated to be 10-25% in women [2]. The vulnerability of depression is seen to begin during puberty and continues through menopause [3]. Due to short term and long-term detrimental effects, depression is considered to be of remarkable public-health concern. It has been observed that depression is accompanied by high rates of anxiety, substance use and poor relationships and even suicidal ideation [3]. Patients with depression often experience loss of interest or pleasure in activities, feeling guilty, fatigue, concentration issues, reduced appetite and thoughts of ending life. Other signs can include changes activity level, speech and vegetative functions (sleep, appetite and sexual activity). According to DSM-IV-TR, major depression occurs in the absence of any manic, mixed or hypomanic episode and lasts for at least 2 weeks, with four or more symptoms from changes in appetite and weight, sleep and activity, lack of pleasure, feeling guilty, problems in thinking and making decisions, and recurring suicidal ideation. These disorders result in significant clinical distress and impairment in social, occupational and interpersonal functioning.

The etiology of depression still remains poorly understood. Genetic analysis recognizes unidentified "depression genes" to be responsible for the onset and cure of depression. Additionally, external factors involved in onset of depression include endocrinopathies (hypo/hyperthyroidism), cancers (carcinoma breast or pancreatic adenocarcinoma), side effects of drugs (such as interferons and isotretinoin) and stressful events (such as loss of loved one, losing a job, financial crisis, etc.). Such stressful events tend to cause psychological and physiological changes in an individual (through hypothalamic-pituitary-adrenal axis and sympathetic nervous system), i.e., the psychological stress response.

Stress is associated with Major Depression, the mechanism of which remains elusive. Long Term Potentiation (LTP) and long-term depression (LTD) are both influenced by stress. If LTP is considered to be crucial for normal learning, then a limited LTP and facilitated LTD together are responsible for storing stress related memories. There is a bidirectional relationship between stress and depression wherein either ends can act both as a cause and an effect [5]. When an individual is exposed to long-term stress, the neuronal and regulatory functions of the body are impaired, placing the individual in a stress cycle. The negative emotions result in decreased quality of life and increased morbidity and mortality.[6,7]

In the most recent surveys, major depressive disorder has been considered to have a lifetime prevalence of 17% of any psychiatric disorder. Annual incidence of major depression is 1.89% and 1.10% in women and men, respectively. Patients hospitalized for first episode depression have up to 50% chance of recovering in the first year of treatment. This percentage decreases with time and about 25% experience a recurrence in first 6 months after discharge. In the next 2 years recurrence can be seen in about 30-50% of patients, and nearly 50-75% in following 5 years.[1]

Patients with MDD with atypical features (reverse vegetative symptoms) may respond to treatment with Bupropion, MAOIs or SSRIs. Antidepressants which act on both serotonergic and noradrenergic receptors shows greater efficacy in patients with melancholic depressions. Depression during winters (seasonal depression) can be treated with light therapy. Major depressive disorder which presents along with psychotic disorders requires both antidepressant and an atypical antipsychotic for treatment. Several studies have shown ECT to be more effective than pharmacotherapy in such cases. For those with atypical symptom features, MAOIs are effective. [1]

Many patients experience persistence of depressive symptoms in spite of adequate care, which pushes them to seek help from complementary therapies.[8,9]A thorough examination of such cases warrants evaluation of the interpersonal relationships of an individual, his/her social background and the behavioural factors involved in onset and impact of depression. The case discussed below aims to focus on this particular aspect in order to shape an appropriate interventional plan.

CASE HISTORY

A 56 years old widowed Hindu female presented to the psychiatric OPD with complaints of sadness, reduced interest in daily activities, insomnia, reduced appetite, crying spells and body aches along with headache from past 7 months. She was apparently asymptomatic 5 years back when she had sudden onset of burning sensation in her chest, which she referred to as *'enlightenment of Almighty God in her soul'*. Following this incident, she started experiencing possession episodes of Kalka Maa (Goddess) which occurred on every full moon night and each episode was associated with fatigue and body-aches. This further led her to get excessively involved in religious activities. She started praying multiple times daily in her set ritualistic fashion. This continued in varying intensity for the next four years, without any formal treatments/intervention.

Approximately 11 months back, while reconstructing their ancestral place of worship, they shifted lord Bhairav's throne and idol which was placed next to Kalka Ma's. Soon after, her son also got ill and was later diagnosed with carcinoma bone approximately 7 months back. In response to this stressor, the patient perceived that the process of shifting idols was responsible for her son's illness and in order to please these idols, she started engaging more in religious activities. Over the year she spent approximately 1 lac rupees in the same, amounting to further financial burden and distress. The heavy expenditure on her son's chemotherapies also added to the financial crises in the family. She was pushed to eventually sell her property and gold jewelry to survive with the burden and that added more psychological distress on her mind.

Being a sole earner of the family after her husband's death, struggling with her son's illness and having no hands to support the family financially along with the medical expenditures together exacerbated her symptoms and she started experiencing sadness and reduced interest in daily activities, along with decreased energy levels. She has now restricted herself only to religious activities as the worries for her son preoccupies her. She even complained of reduced sleep as earlier she used to sleep for 8-9 hours a day which has been reduced to3-4 hours per day. This is associated with headache in frontal region, throbbing in nature, continuous throughout the day and generally not relieved upon taking medication. She further mentioned loss of appetite as her diet was reduced from 4 meals to 2 meals per day. She added about experiencing body aches which were not specified to any particular part of the body and persisted despite of taking medications.

The patient is third in birth order amongst 7 siblings and belongs to lower socio-economic status. She has never been to school and prefers to be a clay potter for earning. Her husband died 30 years back due to tuberculosis as he had been on treatment for coughing and hematemesis for 8 years. She is now living in an extended family type with her eldest son, daughter in law and 3 grandchildren. She has a total of 4 children, 3 sons and a daughter, all of which are married. There is no history of psychiatric complaints among the family members.

There is no history suggestive of seizures, prolonged fever, vomiting, neck stiffness or blurry vision which thus rules out probable underlying organicity. There is no history of increased/big talk, flight of ideas, pressure of speech, repetitive thoughts or impulsive activities, fearfulness, suspicion, muttering, or use of any psychoactive substance.

Though, she has been consuming tobacco for 40 years in the form of a paste which she rubs over her gums and teeth about 2-3 times a day. The patient is a known case of hypertension and hypothyroidism from past 5 years for which she has been under medication. She has been a defaulter and details about previously prescribed medications could not be retrieved.

Her pre-morbid personality revealed her to be a strong-minded lady by the way she supported her family both financially and emotionally after her husband passed away. She raised her family all alone by opting for multiple jobs such as being a house maid, a rag picker and a potter. Thus, there has been a history of various significant stressful life events in the form of being married at a young age, followed by her husband's prolonged illness leading to his untimely death and burden of rearing the family alone, and now her son's illness, associated with the financial crises owing to increased expenditures. The burden of care-giving in her close family members had led to expressed emotions in them, further worsening her symptoms.

On examination, the patient was conscious, cooperative and well-oriented during the interview. She was afebrile and her vital signs were within normal range. She showed signs of pallor but no icterus, cyanosis; clubbing, lymphadenopathy or oedema was noted. Systemic examination revealed no major abnormality. She presented as an elderly-women who appeared of her stated age of 56 years, was dressed up in Rajasthani attire. She was generally cooperative, easy to engage with and displayed eye contact which was established but not sustained. Her psychomotor activity was slowed down. She stated her mood to be sad and worried about her son's health issue. Speech was spontaneous, comprehensible, coherent, relevant, with reduced tone, volume and pressure. Her reaction time was prolonged. The evaluation of thought and perception was reported to be normal. She denied harboring any suicidal ideation. Her immediate and long-term memory was intact and her fund of knowledge was above average. However, she attributed her illness to external causes and did not accept her symptoms to be a part of a mental health condition.

After conducting routine blood investigations, including metabolic and thyroid profile, the values were suggestive of hypothyroidism (raised TSH & low T3 and T4). Imaging of the brain (CT Scan) showed no underlying lesion. Further assessment of her personality revealed no major abnormalities.

Based on the above history and clinical examination, the patient met the DSM-5 criteria for Depressive disorder with somatic complaints and without psychotic features. The criteria included either depressive mood or lack of pleasure accompanied by 4 additional symptoms, for two weeks and a change from previous functioning. As her symptoms seem to have been precipitated by her son's illness, a diagnosis of Adjustment disorder with depressive mood may have been be considered, but the duration of symptoms has exceeded the cut off criteria of 6 months. With no history of manic symptoms, a diagnosis of Bipolar Disorder was ruled out. With no abnormalities detected in physical health parameters (except co-morbid hypertension and subclinical hypothyroidism), Major Depressive Disorder secondary to general medical condition appeared to be less likely. Depressive symptoms also did not appear to be a direct physiological effect of chronic tobacco consumption, ruling out the possibility of substance-induced depressive disorder. Absence of symptoms suggestive of psychosis and no formal thought disorder found on examination ruled out presence of a Psychosis disorder (Schizophrenia).

TREATMENT

The patient presented to our OPD with persisting symptoms for more than 5 years, with the recent exacerbation from past 7 months. The patient was treatment-naïve until 1 year back, when she has received a trial of Amitriptyline (12.5mg) and Chlordiazepoxide (5mg) combination, along with Venlafaxine (37.5mg) and Flupentixol (0.5mg) and Melitracen (10mg) combination. She was also prescribed tablet Thyroxine (25 micrograms). On this regimen, she had reported some relief in her symptoms, but her financial crises in the past 7 months and the nation-wide lockdown imposed in wake of the Covid-19 pandemic, she was not compliant with her medication. She reported no adverse effects with the above medicines.

DISCUSSION

Mood disorders are postulated to be a result of interactions between environment and individual biological factors, which was attempted to be highlighted in this case report. On similar note, a cross-sectional study conducted by Jansen and colleagues used the Mini International Neuropsychiatric Interviews and the Social Readjustment Rating Scale to evaluate mood disorders and stressful life events respectively, on a sample of 1172 and found the following percentages of stressful events in various categories: 38.87% in finances, 42.4% loss of social support, 50.9% environmental changes, 53.8% work, 61.1% personal difficulties, and 63.8% family. This reiterates the significant relationship between stress and mood disorders, depicting a psychosocial interaction between the two[10].

Acuteorchronic burden of accumulated life stressors is known to precipitate depressive symptoms by a complex interaction with each other. The tendency of experiencing stressful episodes is also heightened by the experience of depression. Whenever the stressors are persistent and profound, they tend to prevent the regulatory mechanisms from adjusting appropriately and also results in neurobiological dysregulations leading to poor health outcomes[11].

Vulnerabilities regarding the psychosocial environment in the form of lower socioeconomic status, lesser perceived social support, poor lifestyle or adverse interpersonal situations have an important impact on depression. There is a clear link between lower socio-economic background and higher stress vulnerability, with impaired coping mechanisms and lesser educational and financial opportunities, unhealthy lifestyle choices and worse health outcomes [12]. Domestic violence (intimate partner violence) and lesser perceived support add to a person's vulnerability for stress-induced depression.

Treating MDD may become more difficult because of the accumulation of stress-related memories from previous exposures to various psychological stresses that can further bias cognitions and behaviours. In order to prevent the relapse and development of MDD, certain anti-stress therapies can be offered. Such approaches are found to be helpful in even

lowering the biomarkers related to physiological stress[13].

An untreated episode of depression is usually self-limiting and lasts for about 6 months or more. The absence of psychotic features and no hospital stay in the past, along with the absence of any psychiatric co-morbidity are positive prognostic indicators for this patient's illness. The negative prognostic factors in her case include her co-morbid hypothyroidism and life stressors like early death of husband, burden of care-giving for her son, concern for son's illness, and financial strain. As per the Life Change Index Scale, the stressful life events experienced by the patient amounted to a score of 319, which implies that the odds of her attaining the depressive illness secondary to these stressors were raised to about 80%.

LIFE EVENTS	MEAN VALUE
Death of the spouse	100
Personal Illness	53
Change in health of family member	44
Change in financial status	38
Change to a different line of work	36
Change in responsibility at work	29
Change in social activities	19
TOTAL	**319**

CONCLUSION

This case report is to highlight the impact of psychosocial stressors on major depressive disorders. It attempts to elaborate on the importance of external factors (stressors) involved in the onset of depression and its practical considerations in management. This also emphasizes that early screening of mood symptoms, timely recognition of stressors, relaxation therapies and non-pharmacological treatment modalities in addition to pharmacological are of equal importance in reducing depressive morbidity. The aim is to provide holistic care, achieve maximum treatment response and minimize overall psychological distress in the patient.

CONFLICT OF INTEREST: None.

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Case Report

Role of Psychosocial Factors in Management of Psychosomatic Disorder: A Case Report

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ABSTRACT

Psychosomatic Disorder is an illness which includes mind and body as a whole. The symptoms of these diseases have physical causes which originate from emotional or mental stress, anxiety or depression. Psychological and behavioural factors have been seen to affect the course of many medical illnesses. Psychosomatic disorders (according to DSM II, 1968) are defined as "psychosomatic symptoms that are caused by emotional factors and which involve a single organ system are usually under autonomic nervous system innervations". The combination of both pharmacological and psychosocial factors is used for the management of Psychosomatic Disorders. Failure of the psychiatrist or physician to establish a good rapport is the postulated as a major reason for the ineffectiveness of treatments. This case report presents a young female with psychosomatic disorder.

Keywords : Psychosomatic disorder, Stress, Relaxation, Behaviour therapy

INTRODUCTION

Psychosomatic disorder is now-a-days known as Psychological Factors Affecting Other Medical Conditions (F54) according to DSM-5.[1] German psychiatrist Heinroth first used the term Psychosomatic in 1818. In the year 1978, Hyman G A, Zegarelli E V and Kutscher A H later classified psychosomatic disorders as:

1. **Psycho-neurotic** (basic characteristic of feeling of anxiety): It entails different types of neurotic symptoms, namely:
   - Phobia
   - Obsession
   - Depression and
   - Conversion
2. **Psycho-physiologic** stress induced physiological dysfunction which leads to tissue damage, rather than psychotic withdrawal or any neurotic defenses.
3. **Personality** patterns of actions or behavior in response to stress in an individual, rather than physical, psychological or emotional symptoms.
4. **Psychotic** breakdown of one's personality interfering with the ability to perceive and test one's reality. [2]

Psychological and behavioural factors have been seen to affect the course of many medical illnesses.[3] According to DSM II, "psychosomatic symptoms that are caused by emotional factors and which involve a single organ system are usually under autonomic nervous system innervations.[4,5]

Psychosomatic disorders include migraine, hypertension, joint pain, respiratory diseases, gastrointestinal disturbance, etc. Some psychiatrists have a difference of opinion regarding the etiology of these disorders. Two growing fields on role of the psychological factors in the illness manifestation are: Health psychology and Behavioural medicine. Some believe that each physical parameter is indicative of a special psychic change in an individual, with reference to his/her past experiences and personality. Some others believe hypertension to be related to anger. An example quoted is the inability to overcome past, strong authority in parents, and introjection of anger creating problems with blood circulation.

A recent emphasis on interaction between the psychological, biological and social states of an individual reiterates the history of psychological – physical diseases, with impact of early disturbing and turbulent experiences in an individual's life. Excessive anxiety or worry, or lack of parent's love and overprotection or intensive limitations in childhood can affect a person by refraining him/her from enjoying emotional or social relationships with other children and people of similar age.[2]Many patients with psychosomatic symptoms respond to drug therapy and/or behaviour therapy including psychoanalysis. Often, failure of the psychiatrist or physician to establish a good rapport with the patient is a major reason for ineffectiveness of the treatment.[6]Although the exact etiology for psychosomatic symptoms is not known yet, numerous theories propose certain risk factors such as childhood neglect, sexual abuse, chaotic lifestyle and alcohol and other substance abuse.[7] In view of above literature, this report presents a case of a young woman and her journey through her psychiatric illness.

CASE HISTORY

A 26 year-old married female was referred for a psychiatric opinion. She presented with the complaints of pain in knee joints, pain in arms including small joints of whole body, reduced appetite, weight loss and disturbed sleep. On further inquiry she revealed that she is tensed about her illness, and over thinks that if it will lead to any major disease or any cancer. Her daily routine was disturbed due to the stress caused by these bodily symptoms and was unable to concentrate on her training which is compulsory for the completion of her B.Ed. degree. She stated that the pain had become so bad that she had missed a few days of training and had cancelled an outing with her husband. She was so preoccupied with her illness that her appetite just reduced to half of her actual diet

which eventually leads to weight loss, fatigue and weakness and so feeling of palpitations was present while walking but it occurred hardly two times in the past ten days. During this episode of her illness, she was unable to maintain her proper sleep cycle as she used to have earlier. Most of the times now, she would wake up in the middle of the night thinking about the illness that whether she will get any better or the symptoms will worsen in the future.

Youngest born of three siblings, the patient belongs to the lower socio-economic class and resides in a rural area. She is educated up to B.Ed. and is in training while preparing for further studies. She prefers to be a homemaker. Married for10 years now, she has two children.

She has been experiencing these symptoms for about one and a half year. The symptoms had an acute onset and progressed slowly over time. While the symptoms remained somewhat similar, the patient's perceived stress and fear of physical illness got worse over time. She tried changing her routine and doing other household chores but nothing seemed to help. She sometimes tried to sit and relax without involving in any physical activity but the pain only seemed to become more frequent and severe.

The symptoms were on and off with no other related symptoms such as shortness of breath, tremors, chest pain or headache. There was no history of major mood changes or any substance use. Underlying trauma, tumour, pain during neck movements, vomiting, urinary or fecal incontinence or surgical illness were ruled out. Family history of psychiatric illness of father was present (details of which could not be elicited) and was fully recovered after two years of treatment, as stated by the patient. In her past history, she had no developmental delay and was otherwise well adjusted in new surrounding and environment. Her pre-morbid personality can be mentioned as a good, obedient and hardworking child. She was always a meritorious and disciplined student. In her family, both the parents were reported to have anxious personality and her father had a bit of irritable nature. The parenting style was authoritarian, tending towards punishment and strict discipline. But no significant distress or dysfunction was reported during childhood and adolescence. No apparent stressor in the recent past was identified. However, unsatisfactory response to treatment received so far, along with the costs endured added to her hopelessness and stress.

TREATMENT

When presenting in our OPD, the patient had been suffering with her symptoms for nearly a year and a half. Over this time period, she has resorted to help from a multitude of physicians from one state to another. She reported a history of unsatisfactory response to previously prescribed medications. A detailed history of the entire course of her symptoms was taken and thorough physical examination was performed along with laboratory tests to evaluate for autoimmune disorders and other underlying organic health conditions. All the investigations including CT scan of the abdomen and thorax, blood investigations and ECG were reported to be normal. The report was positive for Typhoid IgM antibodies and pus cells in urine microscopic examination, diagnosed as enteric fever with urinary tract infection. Antibiotic sensitivity testing suggested few antibiotics which were given along with symptomatic treatment. A psychiatric diagnosis of Psychosomatic Disorder based on DSM-5 criteria was made. The patient was initiated on Amitriptyline 12.5 mg and Chlordiazepoxide 5mg and relaxation therapy was started for further few weeks on follow-up.

Exploration of family interaction may provide major clues for the outcome of psychological treatment of psychosomatic disorders. Hence, her parents and spouse were taught correct communication techniques and referred for family therapy in view of anxiety management. The patient was also taught relaxation techniques and provided supportive psychotherapy for her anxiety. Deep relaxation for 20-30 minutes is known to reduce anxiety and is also good for sleeplessness and fatigue. It can further improve one's self-confidence. The supportive therapy imparted to her was helpful in learning healthy coping styles. She was encouraged to carefully pay attention to her positive and rational thoughts and feelings. The patient responded well to treatment and resumed her training eventually.

DISCUSSION

Believing in the subconscious nature of a patient's psychosomatic symptoms continues to be a challenge for mental health professionals. French philosopher and psychologist of the 1800s, Pierre Janet was crucially important in developing the concept of the subconscious. Consciousness is described as the sensory experiences and thoughts in active awareness, whereas subconscious stores information which is not immediately available to the conscious mind. A disconnection between the conscious and subconscious makes our feelings exist in parallel in both sections, referred to as dissociation. Psychological trauma could cause these symptoms, and psychiatrists are encouraged to be vigilant of this diagnosis, while being compassionate towards the sufferers. [8]

Treating psychosomatic symptoms is often challenging as the demonstrations may not clearly fit into a usual pattern of an illness and its treatment. Psychosomatic disorders can be chronically disabling and may require consistent reassurance. The aim should be at improving the quality of life and one's social participation. Management of such cases is a team work & role of psychiatrist and psychologist is also important in these cases. Most of physical illnesses have added psychosocial stressor therefore looking into these aspects by physician will lead to overall improvement. Research has showed that unintentional social reinforcement by hospital members and close relations encourage the progress of behavioral symptoms, person related with treatment can become discriminative stimuli for social attention and thereby provoke symptom behaviours and by adapting the social boosting, any negative event related with treatment protocols, the recurrence of psychosomatic symptoms can be reduced without any changes in the quality of medical care and social interaction.[9]

Skilled interviewing and examination remain highly important in diagnosing and treating psychosomatic disorders. Treatment of these patients is difficult and prolonged. They respond unprecedented to a psychologically oriented physician who is

able and prepared to take final responsibility for both physical and psychological care. Describing an illness as psychosomatic is not a diagnosis, nor is it an excuse for not making a diagnosis. There are many specific psychiatric conditions, most commonly depression, anxiety and hysteria, which may cause or be associated with somatic symptoms. The specific diagnosis should be made or at least sought in all cases.

It is a poor approach to use the term psychosomatic when describing to patients the results of the diagnostic assessment. The very fact that the patient's conflicts are being expressed in physical symptoms suggests that the symptoms serve a protective purpose. For the physician to tell the patient that his illness is psychosomatic without preparing the ground in terms of the physician-patient relationship may be perceived by the patient as physician not believing in his/her experience. The net result may be loss of confidence in the physician and if repeated, in the medical profession as a whole.

Disastrous results can occur when a number of physicians share clinical responsibility but communicate inadequately. This can lead to conflicting recommendations and an opportunity for unwitting manipulation by the patient. Eventually the patient may develop overt or covert hostility towards individual physician. By the time this stage has been reached management can becomevery challenging.

Too often the psychiatric referral is made as a last resort. Organic disease has been ruled out; hence, it is concluded that the illness must be functional. Some patients (particularly those with illnessphobias- fear of diseases such as cancer or heart disease) are helped and reassured by the exclusion of serious physical disease. Many others however, are extraordinarily threatened by the sudden confrontation with the possibility that their symptom may be psychosomatic. They become hostile and defensive and the attempt to complete the psychiatric evaluation is doomed.

The appropriate time to assess psychiatric and psychosocial factors is early in the course of the disease, along-side other investigative procedures. The possibility of a psychosomatic disorder will have been considered early in the clinicalassessment and differential diagnosis, and this aspect will have been evaluated together with the physical aspects. Under these conditions the patient will find the psychiatric assessmentless threatening, will have time to ponder the possibility that psychosocial factors may be relevant, and will be more ready to accept and act upon these when the final diagnosis is made.[10]

CONCLUSION

This shows that stress disorders can be exhibited in the form of psychosomatic symptoms and hence psychosomatic symptoms need further exploration for a comprehensive treatment. It is felt that most of the patients will benefit from psychological counseling as this will aid in building better coping strategies. Presentation of medically unexplained physical symptoms should be assessed and treated with a multidisciplinary approach keeping in mind the biological, psychological and social aspects.

CONFLICT OF INTEREST: None.

FINANCIAL SUPPORT: None.

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Case Report

A Rare Case of Acute Myocarditis with Dengue Fever

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ABSTRACT

We report a rare case of a19-year old boy suffering from Dengue Fever who presented with shortness of breath, bradytachyrrythmias, hypotension, hypercarbia with acute myocarditis where L.V.E.F. was only 20%. Instead of administering very high dose of liberal fluid therapy,he was restricted to only oral liquids and supportive measures in Medical ICU. The patient improved clinically with resolution of cardiac function at the time of discharge from hospital.

Keywords : Dengue fever, Myocarditis, Liberal fluid therapy, Hypotension.

INTRODUCTION

Dengue is an arboviral disease caused by a flavi virus, transmitted by the Aedes aegypti mosquito. Dengue virus has four antigenically distinct stereotypes (DEN 1, DEN 2, DEN 3 and DEN 4).

Dengue may remain asymptomatic or manifest as undifferentiated fever (or viral syndromes), dengue fever, dengue shock syndrome (DSS) or Dengue Haemorrhagic Fever (DHF). An increasing number of cases of dengue arebeing reported with atypical presentations as frequent epidemics are occurring.

CASE REPORT

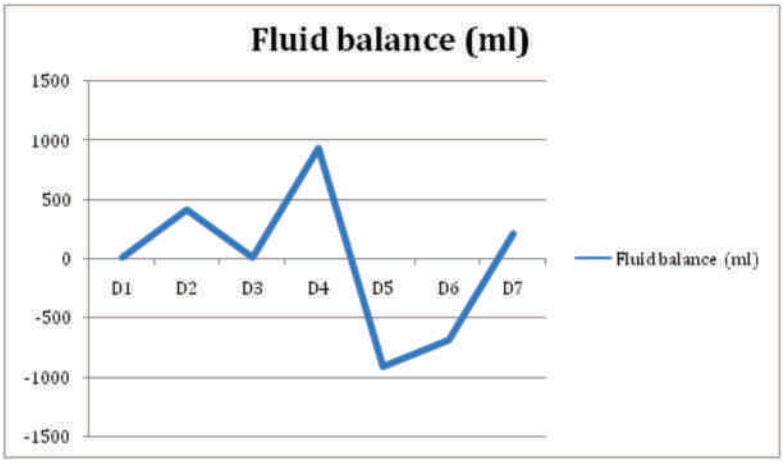
A 19 year old boy was admitted with complaints of fever, retro orbital pain, myalgia, shortness of breath, bradycardia. His investigations revealed thrombocytopenia with positive Dengue NS1 antigen. There was no history of joint pain throughout the illness.At the time of admission in Medical Intensive Care Unit(MICU), patient had pulse rate of 38 beats/ min, BP 88/60 mm of Hg, ABG(Arterial Blood Gas) revealed hypercarbia (pCO2 56 mm of Hg). Four units of platelets were transfused. The patient developed tachycardia but was otherwise asymptomatic and haemodynamically stable. His investigations were suggestive of raised haematocrit (51.6) which was an indication for a liberal fluid therapy. We preferred Venous Blood Gas (VBG) to ABG for fear of bleeding, which was suggestive of hypercarbia and hypoxia.We did not attach importance to the low pO2 levels in the VBG as SpO2 was ~ 99%. We could not ascertain the cause of raised pCO2 as the patient did not have any bronchospasm.

As a part of our ICU protocol we decided to check for IVC collapsibility and cardiac status before giving fluids to the patient. The Echocardiography revealed a minimal IVC collapsibility and a very poor LV function with an EF of ~ 20% with LV global hypokinesia. So we decided to hold on to liberal fluid therapy(10 ml/kg/hr) and we closely monitored the fluid balance. The patient was allowed to take oral feeds as and when desired. The diagnosis of myocarditis was further supported by the increased levels of cardiac enzymes. With minimal intervention and with simple supportive treatment the condition of the patient improved satisfactorily.

Investigations

Date	15/10/ 19	16/10/ 19	17/10/19	20/10/19	On discharge
Haemoglobin (g/dl)	17.8	16.1	17.1	14.1	11.4
Haematocrit %	53.8	47.9	51.6	41.5	35.5
Platelet count (lakh/cumm)	0.10	0.20	0.25	1.40	2.87
TLC (/cumm)	3000	5100	11800	6300	8000
CPK(MB)(1.39-22) (ng/ml)		39.61		4.86	1.26
Troponin T(<0.014) (ng/ml)		0.561		0.203	0.017
LVEF %	20		30		60

Fluid Balance Graph



DISCUSSION

Myocarditis or inflammation of the myocardium associated with infectious diseases especially dengue and chikungunya fever is well recognized but is a rare manifestation of the disease. Thought to be a benign disease, it has been now reported as a chronic disorder. Acute myocarditis presenting as acute MI has also been reported. Myocardial damage is a very rare entity as it is a direct consequence of virus invasion causing damage to muscle fibres.

Hypersensitivity or autoimmune reaction damage has also been postulated; as the insult may persist it makes the myocardium prone to recurrent damage. Pericardium involvement has also been attributed to dengue infection along with myocarditis. The symptomatology is so vague and non-specific that unawareness of its existence in relation to a particular infection may lead to a missed diagnosis and a treatment which can be harmful. Pathological mechanisms and the incidence of myocardial manifestations are obscure. Though in many cases the disease is self-limiting, occasionally it may cause fatal myocarditis. The pathologic mechanism of cardiac dysfunction is not well established though altered autonomic tone and prolonged hypotension may play a significant role. Derangement of calcium storage in the infected cells also contributes to the myocardial damage[1]. Myocardial dysfunction is seen in patients with DHF and in approximately 20% of these, LVEF was <50% which returned to normal within a few weeks. Arbovirus myocarditis as a sequel in patients suffering with dengue has now been a known complication in a chronic form.[2] Patient with severe dengue have evidence of systolic and diastolic cardiac impairment with the septal and right ventricular wall being predominantly effected.[3]

In a report from North India, only 1 out of 115 cases had evidence of myocarditis.[4] The patient had sinus tachycardia, bilateral pleural effusion, echocardiography revealed mild pericardial effusion and global left ventricular hypokinesia. The initial ejection fraction of 40% rose to 56% at hospital discharge.

Fatal dengue myocarditis despite support with Extra Corporeal Membrane Oxygenator (ECMO) has been documented by Yee-Huang Ku et al.[5] This patient was haemodynamically unstable, had ST-T changes on ECG and rising Troponin I levels. Echocardiography showed hypokinesia of anteroseptal region of the left ventricle with ejection fraction of 34%.Ejection Fraction deteriorated to 10% and severe pulmonary edema occurred. Patient died on 6th day in spite of all supportive measures. Another case of fulminant dengue myocarditis with shock and fatal outcome despite IABP support was reported by Lin TC et al.[6]

A study of 100 cases of dengue from South India specifically looking at cardiac manifestations could not document any case with echocardiographic evidence of myocarditis.[7]

In another study from South India involving 120 patients, cardiac manifestations were noted in 44.[8]None of the patients in this study had significant echocardiographic abnormalities.

CONCLUSION

Dengue fever can have varied and multi systemic presentation with typical and atypical manifestations. The patients of myocarditis may not display overtly symptomatic and subtle signs. Nevertheless, signs such as breathlessness, bradycardia or tachycardia should not be ignored. It is always better to check for the cardiac status of the patient as the fluid therapy advised in the guidelines might prove to be counterproductive.

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Case Report

Primary Tuberculosis of Breast: A Case Report

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ABSTRACT

Tuberculosis (TB) of breast is considered as one of the rarest form of extra-pulmonary tuberculosis. With millions and billions of people affected with tuberculosis worldwide, primary TB of breast is still rarely reported; even secondary TB of breast (metastasized from any primary source such as pulmonary TB) is sparsely seen. TB of breast can often be mistakenly misdiagnosed as a case of breast carcinoma or breast abscess due to similar clinical presentation. TB breast is most commonly seen in reproductive age of female, multiparous, lactating mothers; however women of older age with primary TB breast have been infrequently reported[1].

Keywords : Carcinoma, Tuberculosis, Abscess, Metastasis.

INTRODUCTION

Tuberculosis is very old disease as *Mycobacterium tuberculosis* (bacilli) has co-existed in human since centuries. According to studies TB continues to be one of the common causes of morbidity and mortality. Currently, in every second one person is detected tuberculosis positive worldwide. Although TB mostly affects lungs as it is airborne disease but any organ can be affected by hematogenous spread (secondary TB). Mammary gland and spleenic tissue are considered to offer resistance to multiplication of tuberculosis bacilli and hence, secondaries in these are rarely seen [1].TB of breast is uncommon with incidence of 0.1-3% of all breast diseases treated surgically [1]. However, incidence is higher in undeveloped than developed countries[1].

CASE REPORT

A 60 year old female came with complains of painless lump over her right breast since 2 months which was gradual in onset and progressive in nature. No history of fever, pain, any nipple discharge, weight loss and night sweat. No history of hypertension, diabetes, thyroid disease or tuberculosis. No history of similar complains in the past. No history of tuberculosis or any malignancy in the family. On examination lump was about 5x4cm and involves inner upper and lower quadrants of right breast along with nipple involvement. Both breasts lie at same level with nipples also at same level but right nipple was mildly retracted; surrounding skin of the lump was red, smooth, and shiny. No visible scar or skin pigmentation over breast, no discharge from nipple, no crack/fissure, and no ulcer over nipple was noticed. No diminution of size of areola. No oedema of the corresponding arm. There was no local rise of temperature and the lump was not tender. It was firm, non-mobile, irregular, fixed to overlying skin but not fixed to underlying muscles or chest wall, margins ill defined. Fluctuation test negative. Axillary LN was palpable.

Suspecting the patient to be a case breast cancer, she was advised for routine blood tests and FNAC.

Figure 1: shows large lump involving inner upper and

Lower quadrants of right breast with nipple retraction

Her Hb was 11.3 gm/dl; TLC 9800/cumm, with 69% neutrophils, 20% lymphocytes; Platelet count 4.22 lac/cumm; Blood urea 25.7 mg/dl; BUN 12.8 mg/dl; Serum creatinine 0.46 mg/dl; Serum uric acid 2.6 mg/dl; Total bilirubin 0.20 mg/dl; direct bilirubin 0.10 mg/dl; indirect bilirubin 0.10 mg/dl. she had mildly raised ALP (137.0 /L), S. Globulin (4.5g/dL) and low A/G ratio (0.79) as serum albumin was 3.56 g/dl. No other significant routine test findings were seen.

Following this FNAC was done which revealed “Numerous well defined epitheliod cells granulomas comprising of epitheloid cells, lymphocytes and histiocytes against background of caseous necrosis and acute supportive inflammation” on microscopic examination. Findings were suggestive of "Granulomatous Mastitis (Possibly tubercular)”. Trucut needle biopsy also confirmed diagnosis of tubercular right breast.

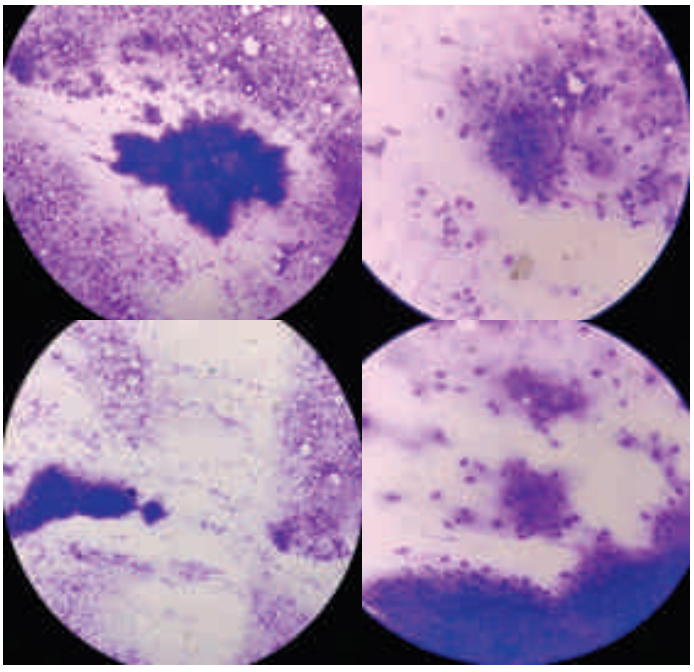

Figure 2: FNAC Showing well defined epitheloid granulomas against the background of caseous necrosis.

Mammography was also done. CC and MLO views of right breast on mammography showed "large ill defined area of radio density seen in subareolar region of right breast with involvement of adjacent soft tissue and extending upto skin and nipple areola complex."Impression of "BIRADS-3 lesion in right breast" was confirmed on mammography.

Aspiration of the lump and RTPCR of the caseating material was done which further confirmed it to be tubercular. Patient was thus, confirmed to be case of primary tuberculosis of breast as she had no detected source of spread of tuberculosis. Anti tubercular treatment was started according to ATT protocol and patient was advised regular follow up and review of mammography after 6 months to rule out the suspicion. Monthly follow-up showed regression of the lump with the treatment; even mammography repeated after 6 months showed resolution of the lump.

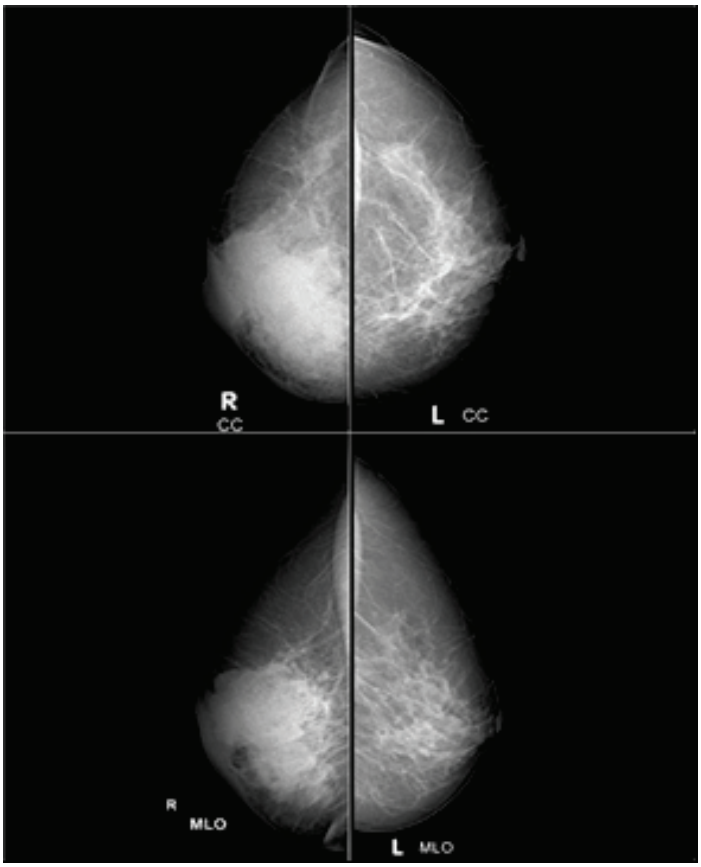

Figure 3: Mammography showing large ill defined area of radio density in sub-areolar region of right breast.

DISCUSSION

Lactating women appear to be at higher risk, probably due to increased blood supply to breasts and to dilated ducts that makes them more vulnerable to infections. [1] Tuberculosis mastitis often presents unilaterally than bilaterally and is more common in males than females. [3] Breast tuberculosis can be primary when no other foci of infection detected or can be secondary when there is detectable source of spread of infection. It can have spread to breast via hematogenous route, lymphatic or by direct extension from axillary lymph nodes or by inoculation of traumatized skin or ducts[2].

Most of the authors consider almost all cases of breast TB as secondary even if primary location is occult[2].

Primary breast TB is considered to be caused by infection of breast through skin abrasions or through main ducts of nipple. Patient mostly presents with lump, painful or painless, mostly in upper outer quadrant of the breast. [3] Lump mimics breast carcinoma, as it is firm in consistency with irregular border, fixed either to skin, muscle or to chest wall. Lump if untreated can lead to abscess formation, followed by inflammation, skin ulceration and diffuse mastitis. Therefore, recurrent abscesses of breast which do not respond to drainage and antibiotic therapy raises suspiciousness of breast tuberculosis.

All lumps in the breast in an elderly female are not Carcinoma, as in our country tuberculosis is very common and since, breast tuberculosis mimics cancer it's always better to get all relevant investigations done to reach the diagnosis. Therefore, the surgeon should be aware of this fact before contemplating any definite procedure

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Case Report

Left Branchial Cleft Fistula with Ear Discharge in Elderly Male: A Case Report

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ABSTRACT

Introduction: The embryological development defects mostly present as anomalies of Branchial arch such as sinus, cyst and fistula. The most common presentation is unilateral discharge from neck and recurrent infection.

Case Report: We are presenting a case of 66 year old male patient who had been diagnosed with unilateral left branchial cleft fistula with ear discharge.

Conclusion: Detailed history and clinical examination followed by appropriate imaging leads to delineation of entire tract which in turns leads to complete excision with low recurrence rate.

Keywords: Brachial, Unilateral, Fistula.

INTRODUCTION

Branchial cleft cysts come to medical attention between the ages of 11 and 30. However fistulas and sinuses can be present during initial years of life[1]. It may occur at any age.

During embryological development the branchial arch develop in 4th week of intrauterine life. Branchial arches are six in number develop in craniocaudal succession in vicinity to pharyngeal foregut. Sixth arch because of its small size appears as part of fourth arch while fifth arch either disappears or rudimentry[2,3]

CASE REPORT

A 66 year old male patient came to the Outpatient department of ENT, Pacific medical college and hospital, Udaipur with the chief complaints of discharge from Left side of neck and Left ear off and on from past 30 years. Patient had few episodes of acute infections with discharge being sero-mucoid in nature, scanty and not blood stained. There was no aggravating factor and relieved with antibiotics course. Oral examination revealed grade I Tonsil hypertrophy. There was no history of trauma. The discharge from ear was insidious in onset, intermittent, gradually progressive, serous in nature, scanty in amount, non-foul smelling, not blood stained, not associated with pain, relieved with ear drops, and there was no aggravating factor. Tympanic membrane was normal. It was associated with tinnitus which was intermittent in nature with diurnal variation and worse at night. There was history of frequent self-cleaning of ear with ear buds. Patient reported decreased hearing in Left ear since 10 years which was insidious in onset, gradually progressive and was unable to hear loud voices. There was also history of itching in Left ear. Audiogram was moderate with Sensorineural hearing loss.

There was no history of fistula in other family members or any other associated congenital syndromes

He was a known case of Hypertension and Thyroid since last 5 years and was on regular medication. Patient also has a history of prostrate surgery two weeks back.

On general physical examination, patient was well nourished with average built, conscious and oriented to place, date and time. There was no sign of pallor, icterus, clubbing, cyanosis and generalised lymphadenopathy.

On local examination opening was seen on left side of neck which on pressure application had discharge.

The CECT Neck with Fistulogram (Figure 1) was done and revealed there is thick walled (with foci of calcification) fistulous tract in left side of neck. The external opening of tract is seen in skin below submandibular region. The tract is traversing supero-medially through submandibular soft tissue into the parenchyma of deep lobe of parotid (medial to retromandibular vein) and having internal opening within inferior wall of external auditory canal. During fistulogram spillage of contrast is seen coming through external auditory canal. These findings are likely to represent Type I Branchial Cleft Fistula.

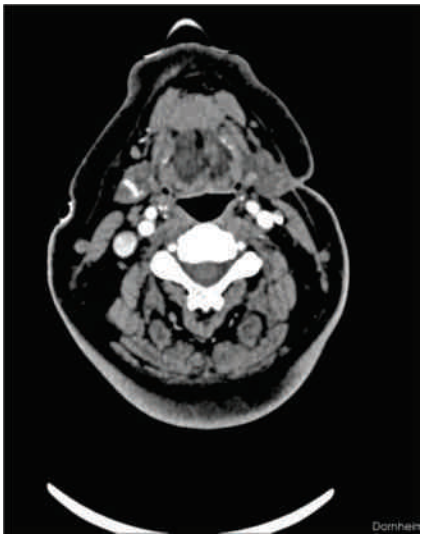

FIGURE-1 The CECT Neck with Fistulogram

DISCUSSION

The branchial apparatus were first described by Von Baer while its anomalies were first described by von Ascheroni[4]

As the branchial arch develops, the failed obliteration of the branchial clefts often leads to the development of branchial arch anomalies, whereby they may present as cysts, sinuses, or fistulas[2].

The most common presentation of Second branchial cleft anomalies was cysts followed by sinuses and fistulae. These cases emerge as a persistent unilateral discharging defect usually at the right side of the neck which worsens upon the consumption of drinks[5]. In present case the patient had recurrent infections and unilateral discharge at the opening in neck.

During embryological development the disappearance of endoderm leads to fistula formation in most cases. Hence on affected side of neck a tract is formed at upper two third and lower one third of the sternocleidomastoid muscle[6].

The lesion can be evaluated using meticulous history and complete physical examination. The course of tract can be visualized by appropriate radiological imaging before performing operative procedure. This helps in minimizing the chances of recurrence and the relation of tract to the vital structures[7].

They have previously been classified into four different subtypes by Bailey in 1929 Type I-Most superficial and lies along the anterior surface of sternocleidomastoid deep to the platysma, but not in contact with the carotid sheath Type II-Most common type where the branchial cleft cyst lies anterior to the sternocleidomastoid muscle, posterior to the submandibular gland, adjacent and lateral to the carotid sheath Type III-Extends medially between the bifurcation of the internal and external carotid arteries, lateral to the pharyngeal wall Type IV-Lies deep to the carotid sheath within the pharyngeal mucosal space and opens into the pharynx Types I-III are the most frequently occurring second arch anomalies, with type II being the most common[8]. In our case it was type 1 brachial fistula.

The surgical approaches for excision include transcervical approach and combined pull-through technique. As described by Bailey the stepladder approach is a standard one with low rate of recurrence with two incisions the upper one being bigger than the lower one because of its proximity to neurovascular bundle. Canaloplasty was done in present case we operated the patient by stepladder approach. Recurrence was not seen.

CONCLUSION

Radiological imaging such as fistulogram is most commonly done. CT fistulogram is preferred investigation to delineate the complete tract and its relation with important structures so that excision can be planned and recurrence can be avoided.

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Case Report

A Case Study on Tennis Elbow

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A CASE STUDY ON TENNIS ELBOW

A case study on classical tennis elbow of a lady, Mrs. Singh of 59 years old. Inthis typical presentation of the case, practice shows it is not only important to just look at the painful spot but also consider several additional problems. Those considered problemsmust be dealt well in order to get a good result.

Subjective Assessment for the case–Patient of the case felt pain on the outside of the left elbow with referral to top of shoulder and into the forearm. The pain was felt by the patient most of the time and turned to be severe and sharp when used. Tingling sensation was felt by patient at worst. There is no pain in cervical and thoracic region.

Aggravating factors – Lifting of objects,extension of wrist, kept in static positionsfor long time.

Easing factors – The patient can rest but not for too long as it stiffens.

24 hrs – Feels very stiff for 45 minutes to an hour in the morning. Minor ache in evening. Sharp ache depending on activities done by the patient.

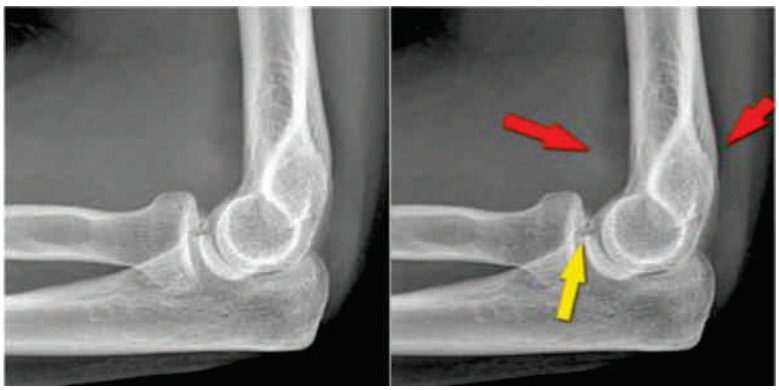
History – The patient had a gradual onset over two years, worse in the last three months since she was preparing for her daughter's marriage. Neither any particular reason for starting nor any obvious trauma.

Social History – The patient is a housewife, uses the gym and some machines that can affect her condition.

Past Medical History – The patient of the case did not have any previous problems in arm. It should be noted that the patient of case was previously treated for foot problem in the year 2013.

The patient was apparently all right with no symptoms of diabetes, epilepsy, high blood pressure, haemophilia, fits. No Rheumatoid Arthritis history in the patient`s family. The patient does not have any noted allergies. No Pacemaker. The patient is neither pregnant nor has any circulatory issues during treatment.

Drug History –No medication noted.



Radiological Finding of the patient

Objective Observation – Bad and improper posture, hyper flexion of thoracic spine, extension of neck. Muscle wasting in left forearm as compared to right forearm. No noticeable swelling.

Neck. Good range of motion to the left-side rotation. No referred pain even on hold. Both shoulder joints have full ranges motion in all directions, without any pain and stiffness. Proper shoulder stability and control but the outer neck muscles were stiff. Joint impingement test was found negative. Stiffness and tightness were noticed on first and second ribs.

LEFT ELBOW ASSESSMENT

Active movements. Slight stiffness on the movement of the elbow (by Patient). Pain in the end range ofwrist extension. Wrist flexion produced a stretch in the muscles of the forearm. Painful gripping.

Passive movements. Full range of motion in elbow joint when movement was performed by the Physiotherapist. Wrist Flexion with elbow extension aggravates pain at elbow.

Muscles. There was no pain in elbow flexion and extension in all ranges. Gripping wrist, extension of thumb and finger and hand causes pain in the forearm muscles and tendon at the level of lateral epicondyle.

Additional Tests Nerve stretch test was found positive and pain in the forearm.

Other tests likecervical spine palpation, stiffness and pain in C4/C5/C6 on the left side. Tenderness infirst and Second ribs. Tightness and tenderness in muscles on the lateral side of the neck.

Palpation Pain and swelling in forearm muscles and tendonbelow lateral epicondyle.

PROBLEM LIST

1. Dysfunction of cervical spine at C4/C5/C6 with problems related to postures
2. Tightness in muscles of lateral side of neck associated with stiffness in first rib and second rib.
3. Neck and rib problems associated with nerve stretch test.
4. Tendon tear on lateral side of elbow along with scarred swollen tissue.

TREATMENT PLAN

1. Mobilisation of neck and ribs. Focused on correction of muscular imbalances in shoulder girdle by manual techniques and exercise based techniques.
2. For Nerve tension signs – mobilising of the nerve tissue will reduce Nerve tension.
3. Deep tissue mobilisation of the scarred musculo-tendinous junction.
4. Planned exercise routine for the restoring tissue structures back to normal.
5. Focus to reduce the local inflammation.

Tapping of elbow joint in tennis elbow patient

OVERVIEW OF TREATMENT TECHNIQUES USED

1. Neck manipulation and mobilisation – trigger points released with MFR and MET.
2. Nerve tension positions in arm relieved bymobilisation of nerve tissue.
3. Local deep mobilisation of painful area in extensor tendon with extensors on stretch.
4. Exercises for loading of muscle and tendon, nerve mobilisation and neck muscle stretching and self-neck mobilisations.
5. Acupuncture and electrotherapy. Possible use of braces to off-load the area in the short term to allow healing.

The mentioned assessment, treatment and home exercise prescribed to the subject would take place on the first visit. For this kind of condition with a two years history, I would expect to have to see the patient about 5 to 8 times over a couple of months to clear all the problems. Subsequent treatments will vary accordingly as per progress in the condition. It is important to involve the patient in their treatment ensuring they will understand what has happened to them and what can be done by themselves to help them for their faster recovery. The main aim of this case study is to clear all of the symptoms.

Review Article

Eye Stroke – A Warning Sign of Concurrent or Future Brain Stroke

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ABSTRACT

The aim of this review is to discuss vascular etiological factors causing visual loss and emphasizing in recognizing their importance as a warning signal of future or concurrent brain stroke because risk and etiological factors are common for both conditions. Patients often do not take visual loss as seriously as a brain stroke and often delay seeking consultation or are unaware of the similarity of risk factors responsible for these two events. Sometimes ophthalmologists also do not realize the importance and urgency to be considered in referring the patient for stroke protocol workup at neurology and cardiac centre so that timely and appropriate remedial measures can be undertaken for treating and controlling modifiable risk factors to prevent future brain strokes.

Keywords : Eye Stroke, Ocular Ischemic Syndrome, Central Retinal Artery Occlusion.

INTRODUCTION

Sudden loss of vision in an eye may be caused by acute compromised blood supply to the ocular tissues especially retina and optic nerve and the term eye stroke may be used similar to brain stroke. Using the term eye stroke emphasises the importance of the gravity of the condition and its proper management because factors which are responsible for reduction in blood supply to the eye are similar to the factors responsible for causing brain stroke. Similarly amaurosis fugax (transient loss of vision) may be compared to transient ischemic attack (TIA) of brain and caused by same etiological factors. Similar to TIA of brain transient loss of vision may be caused by reversible blockage of blood supply to the eye by occlusion or narrowing of blood vessels i.e. arteries supplying the blood to the retina and optic nerve. Incidence and mortality was observed to be higher due to Ischemic heart disease and stroke in persons who have suffered amaurosis fugax.[1] Hence early and thorough evaluation and management of conditions responsible for an eye stroke may help in preventing future brain stroke.[2] Eye stroke and brain stroke (non-hemorrhagic), both are caused by reduction in blood supply and have same risk factors.

Causes of eye stroke and amaurosis fugax may be following:

Central retinal artery occlusion (CRAO) and branch retinal artery occlusion (BRAO)

Central retinal vein occlusion (CRVO) and branch retinal vein occlusion

Carotid artery disease

Ischemic optic neuropathy

Papilloedema

Brain tumour

Migraine

Multiple sclerosis

Head injury

Systemic lupus erythmatosus

In the present review only the diminution of vision, permanent or temporary caused by vascular pathologies are discussed which may be a warning signal of future neurological sequelae or stroke.

PREDISPOSING FACTORS FOR ISCHEMIC EYE AND BRAIN STROKE ARE –

Hypertension

Diabetes mellitus

Hyperlipidemia

Hyperviscocity of blood

Aging

Substance (cocaine) and alcohol abuse

Vasospasm

Smoking

CENTRAL RETINAL ARTERY OCCLUSION (CRAO) AND BRANCH RETINAL ARTERY OCCLUSION (BRAO)

CRAO was first described by von Graefe in 1859 who attributed the cause to be embolism.[3] CRAO is characterized by acute, severe, painless monocular loss of vision. In some patients presence of cilioretinal artery may help preserving central vision. But the condition is not often taken as seriously as brain stroke by patients resulting in delay in treatment and hence usually poor visual prognosis or the occlusion occurred during sleep at night and visual loss observed only in the morning. CRAO may be nonateritic CRVO (NA-CRAO), NA-CRAO with cilioretinal artery sparing, transient NA-CRAO or artertic CRAO (A-CRAO).4 Majority of cases are of NA-CRAO type, 96%) with or without presence of cilioretinal artery or transient NA-CRAO causing amuorosis fugax and only 4% patients have A-CRAO.[4] The most common cause of NA-CRAO is embolism, embolus arising from carotid artery or heart and associated stenosis of internal carotid artery (18%).[5] Amaurosis fugax may be caused by transient constriction of central retinal artery or a small embolus which migrated distally. Other associated conditions like Diabetes Mellitus, Hypertension and hyperlipidemia, crotid artery disease, hyperuricemia and chronic smoking also contribute significantly for plaque formation in heart and carotid arteries leading to embolism.[6,7]The incidence of developing ischemic stroke after CRAO is highest during first week after occurrence of CRVO, hence every patient of CRVO needs urgent stroke workup so that preventive measures can be taken in time.[8] It has been reported that 89% of brain strokes developing after CRAO, branch retinal artery occlusion or amaurosis due to retinal TIA are silent.[9]

CAROTID ARTERY DISEASE

Narrowing or stenosis of common or internal carotid artery is the most cause of reduced ocular blood supply. The most common cause of carotid artery narrowing is atheroma formation, less common causes include dissection, arteriris or external compression. Release of emboli from an atheromatous plaque which may get lodged in the central retinal artery, its branches or other cerebral arteries. Reduced blood supply to the eye leads to stasis of outflow of blood and retinal ischemia, a condition which was earlier named "Venous stasis retinopathy"but was later changed to ocular ischemic syndrome (OIS).[10] The most common cause of stenosis of carotid artery responsible for producing OIS is formation of atheromatous plaque.[11,12]

GIANT CELL ARTERITIS (ARTERITIC CRAO)

Giant cell arteritis (GCA) has also been reported to cause OIS by affecting and narrowing internal carotid artery.[13] Stroke though rare but can occur in 3-4% patients of GCA due to stenosis of carotid, vertebral or basilar arteries with high morbidity and mortality.[14]

NON-ARTERITIC ANTERIOR ISCHEMIC OPTIC NEUROPATHY

Persons who have suffered from nonarteritic anterior ischemic optic neuropathy (NAION) have been found to have an increased risk of developing ischemic stroke.[15] All such patients should have systemic evaluation for vasculopathy and control of risk factors to prevent brain stroke in future.

CONCLUSION

In a study it was observed that 25% patients who had retinal ischemia were found to have asymptomatic strokes discovered on magnetic resonance imaging (MRI) performed with diffusion weighted imaging (DWI). In another study it was found that patients suffering from monocular visual loss due to vascular aetiology had a 19.5% risk of developing ischemic stroke simultaneously which may be silent.[16,17] From this review of literature it may be emphasized that whenever a patient presents to an ophthalmologist for visual loss and diagnosed to have a vascular aetiology for the event, the patient should promptly be referred for neurological evaluation for a complete workup (stroke protocol) including complete cardiovascular studies to diagnose concurrent silent stroke and to prevent brain stroke in future. Hence it is to be emphasized that the ophthalmologist should consider referring a patient of visual loss due to vascular pathology with utmost urgency to a neurological centre for complete workup under stroke protocol so that precise etiological factor can be identified and measures can be undertaken to prevent serious neurological events like stroke in future.

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Commentary

The Curious Phenomenon of Doctor Shopping!

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INTRODUCTION

In medical practice clinicians frequently encounter numerous unexplained symptoms or vague physical complaints as common clinical presentations. Very often, a difference of opinion exists between physicians and mental health professionals or patients and caregivers, as to what remains the underlying root cause of such physical symptoms, which appear in an apparently normal functioning body. These differences become a major cause for impaired doctor-patient and doctor-doctor relationships, and play a significant role in hindering implementation of psychosocial aspects of management.

There is no dearth of medical professionals in the country. Under conflicted circumstances or when a patient is unsure or dissatisfied with the ongoing treatment, s/he usually resorts to taking another consultation from a different healthcare professional, sometimes even allied medicines like *unani, ayurveda* or homeopathy. This behaviour is identified in layman terms as 'doctor shopping' and is widely acknowledged by healthcare professionals across the world. Many researchers have attempted to define doctor shopping in their own meaningful and relevant terms. For example, Lo and colleagues define it as 'the changing of doctors without professional referral during an illness episode'. [1] Macpherson quantifies it as 'three or more sites for consultations during a single illness.'[2] Pradel mentions 'simultaneous use of several physicians', whereas Lineberry defines doctor-shopping as 'visiting multiple physicians simply to procure more prescriptions.'[3, 4] Hall and colleagues characterize this phenomenon as 'obtaining prescriptions for controlled substances from five or more clinicians during the preceding year'. [5]During these visits, the patient usually does not reveal previous consultations or his/her relationship with the primary healthcare professional.

The prevalence of doctor shopping varies from 6.3 -56%.[6]It is most commonly seen amongst people suffering from substance use disorders or illicit drug suppliers, or patients of somatoform disorders, hypochondriasis, factitious (Munchausen) or Munchausen by proxy disorder, or adult attention deficit disorders (causing indiscriminate use of stimulants). Thus, medicines commonly involved in prescription frauds are narcotics, stimulants, benzodiazepines and barbiturates and commonly come under thorough investigations by law enforcement officers especially in view of Mediclaim/ health insurance claims.

There are various reasons postulated to be behind doctor shopping, and can be broadly understood as physician and patient related factors. According to surveys, extended waiting hours, physician's strict attitude, inconvenient hours or location of consultation and insufficient time given during doctor-patient communication were amongst the most commonly reported reasons for patient dissatisfaction and attrition. [7, 8, 9]Patient-related factors include illness variables as well as psychological dysfunction. For example, symptom persistence, lack of understanding of one's diagnosis & treatment, and chronic course of illness amount to multiple consultations.[1,10,11] As per

Norton and colleagues, doctor shopping is indicative of an underlying psychiatric illness. Some have even found its association with "serious emotional problem within the family". [12, 13]Similarly, Fink and de Zwaan & Muller reported higher rates of multiple physician visits with somatic preoccupation and nonspecific emotional dysfunction.[14,15]

Some of these patients will visit multiple doctors as a 'new/ first visit' patient or 'visiting from out of town' patient who exaggerates or feigns symptoms and insists on prescribed medications for longer durations. Sometimes, it almost borders malingering of symptoms, specifically presented for procuring drug prescriptions. Physicians may hesitate from suspecting a malingerer owing to fear of falsely accusing a patient or judgement error in a genuinely suffering patient.

Another section of these patients visits multiple health care professionals with varying specialities (physicians, gastroenterologists, cardiologists, gynaecologists, neurologists, oncologists, plastic surgeons and ultimately psychiatrists), without specific requests for prescriptions or intent for material gains. These patients even spend enormous amounts of money and time in frequent consultations and repeated investigations, as they are unable to feel satisfied with the assessments and treatment plans offered by different doctors. The reason behind this behaviour is attributed to presence of underlying somatoform disorders, including hypochondriasis and/ or body dysmorphia, which present with somatic symptoms of anxiety, illness anxiety and reassurance seeking as behavioural symptom manifestation.

Vague and fluctuating somatic symptoms, often dramatic, inconsistent or disorganized, along with a thick file of test reports including invasive investigations, and exaggeration of symptoms when attended to are some indicators of identifying this cluster of patients. Most of their reports will show normal findings, in contrast to the patient's clinical presentation. As a result, the patient will keep changing doctors and specialities of doctors in search of a convincing answer. A feedback of normalcy in the test reports and physical examination and diagnosis is perceived negatively by the patient and s/he will often move on to another 'better' doctor for repeating the process all over again. Sometimes, these patients create counter-transference in their treating doctors, who find them to be problematic, difficult to manage and a sheer waste of time and effort during their precious busy consultation hours. This in turn aggravates more specialist referrals from the doctors' end, further potentiating the cycle of 'doctor shopping'.

From the patient's perspective, when s/he experiences psychological distress of physical symptoms not responding to repeated evaluations and prolonged treatments, it also speaks of low self-esteem, low frustration tolerance, high vulnerability to stress and even underlying clinical depression or anxiety. But denial of a psychological cause and resistance for psychiatric consultation hinders an appropriate resolution of the same. Sometimes, physicians are partly to blame for this attitude in patients through insensitive labels of phrases like 'it's only in your head' or 'don't overthink it'. Such dismissive comments create a sense of rejection and anger in the sufferers and propel them towards another consultation in search of an answer from someone who understands them wisely.

In a study exploring the determinants of doctor-shopping, certain observations were made with regards to influencing factors. Age and gender both appear to play a significant role in the attitudes and expectations towards, and health service utilization by a patient. The findings state that male doctor-shoppers are more likely to be middle aged (OR=2.81) or have chronic medical illnesses (OR=3.08). Female doctor-shoppers are more likely to be younger (OR=4.25) or have acute symptom presentations (OR=2.12). Underlying illness significantly affects doctor-shopping in males, in both acute illnesses (OR=9.03) and chronic problems (OR=10.84). Female doctor-shoppers seem more likely to be dissatisfied with health services (OR=2.62) than males, and common determinants of this dissatisfaction were high expectation for information exchange between the doctor and patient (OR=2.92) and disappointment in receiving an expedite recovery from injectable treatments (OR=2.95). In this study, the reasons reported for doctor shopping were persistence of symptoms, lack of trust in doctor or medicines, dislike for the doctor's attitude, lack of professional referrals, and costs or inconvenience in availing services.[16]

Lineberry and Bostwick in their study, indicated doctor-shopping as a traditional method for acquiring drugs illicitly.[4] In a Norwegian study, Winther and Bramness found 9.5 times higher % of doctor-shopping in patients of addictive drug use than non-addictive.[17]Wilsey and colleagues reported that amongst such drugs prescriptions, opioids were the most common (12.8%), followed by benzodiazepines (4.2%), stimulants (1.4%), and weight-loss medications (0.9%).[18]Presence of mental health disorders, including alcohol dependence and other substance use disorders seems to increase the risk of such doctor-shopping, especially in young patients from lower socioeconomic strata of society.[19,20]A good rapport and trust in the doctor and positive experiences on the other hand, seem to help in prevention of doctor-shopping.[21]

Ready provision of prescriptions by health professionals has its peculiar perils. Hall and colleagues examined unintentional pharmaceutical overdose fatalities and found an evidence of doctor-shopping before death in 21.4% of the decedents.[5]With a pandemic of prescription drug overdose strangling the country's young generation, the authorities have made stringent drug dispensing regulations and mandated documentation of the same. Narcotic Drugs and Psychotropic Substances (NDPS) Act, 1985 by Parliament of India prohibits the production, possession, sale, purchase, transport, storage and consumption of any narcotic drug or psychotropic substances, including amphetamines and opioids. The punishment for violating the same varies from rigorous imprisonment between 1 and 20 years, to a fine of Rs 10000 up to 2 lakhs, depending upon the quantity of substance involved. [22]Hence, one must refrain from providing prescriptions without patient examination or providing them online without corroborative or reliable information, or having an oversight for red flags of doctor shopping. This will not only safeguard the healthcare professionals from incurring legal liabilities upon themselves, but also protect the patients from unwarranted costs or unintended harm.

As doctors or caregivers or even probable patients, we must be

watchful for the warning signs of imminent doctor shopping, psychologically or ulteriorly motivated. You may observe that your loved one mentions feeling unhappy with ongoing medication or it's not working like it used to before, and wish to seek another doctor for consultation. They may miss work or parties or gatherings due to their persistent unexplained complaints. They may behave erratically; have mood swings or anger outbursts. For picking up underlying drug addictions, look for red flags like bloodshot eyes, unkempt hygiene and general decline in overall appearance. At times they may even mention of facing financial issues like debt or unpaid loans and ask for borrowed money. Besides these, there are subtle indicators of doctor shopping for underlying drug addictions that we may casually overlook. For example, frequent excuses of losing medications, visiting far off doctors, asking for specific brands of medications of a specific dose, asking for longer duration of prescriptions and defensiveness on being questioned about any of these.

What seems to be a sensible and rational approach in handling such cases in clinical practice is to remember the basic guiding principles of doctor-patient relationship. Working patiently on establishing trust and rapport with the patient is of prime importance. Explain the mind-body paradigm to the patient, while discussing the biological interactions between emotions and bodily changes. Remember to validate the patent's symptoms as real ones, and get minimum investigations with minimum medicines prescribed at a fixed schedule. It is wise to refrain from prescribing medicines for SOS use by the patient who can misuse them as per need, while the onus of its consequences lies on the treating doctor. Rather, maximizing the role of psychosocial modalities like physical exercise, proper nutrition and hobbies or relaxation in daily routine, would be a more effective component of the complete treatment plan. Discourage emergency visits and schedule regular follow ups. When appropriate, we can even gently communicate with the patient about what doctor-shopping means, and how it is not helpful in the long run.

Following the tenets of preventive healthcare, early recognition of patients with somatization tendencies can be beneficial for initiating effective treatment early in the course of illness. Scheduling appointments in a time contingent manner and avoiding repetition of tests despite patients' demands will help in not exacerbating the disorder. Investing in motivational conversations at primary contact with the doctor and offering counselling or psychotherapy inputs over time can be recommended.

The increasing use of mobile devices in today's era makes multiple parallel consultations or online doctor-shopping a continuous activity.[23] What appears to be a comprehensive and resourceful interface on the surface, continues to remain a potentially dangerous, unreliable and irresponsible platform beneath. Hence, as healthcare professionals, we need to be more watchful for suspected doctor-shopping behaviour, while being meticulous with online consultations and impeccable with the patient's clinical record keeping.

To conclude, let us remember that seeking contentment is human nature. Patients can be prone to engage in doctor shopping for their own personal reasons. It is prudent to remember that not all doctor shopping is driven by suspect motivations. Having a careful demeanour, non-judgemental approach and solution-focused attitude will help minimise the magnitude of this complex problem.

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Editor's Pick

New Drug Approvals

The following drugs have recently been approved by the FDA. Includes newly approved drugs and new indications for drugs already approved.

- **Sutab (Sodium Sulfate, Magnesium Sulfate, and Potassium Chloride) Tablets**

  Company: Sebela Pharmaceuticals, Inc. Treatment for: Bowel Preparation

  Sutab (Sodium Sulfate, Magnesium Sulfate, and Potassium Chloride) is a sulfate-based tablet preparation for colonoscopy, providing an alternative to liquid-based colonoscopy preparations.

  FDA Approves Sutab (Sodium Sulfate, Magnesium Sulfate, and Potassium Chloride) Tablets for Colonoscopy Preparation - November 10, 2020

- **Sesquient (Fosphenytoin Sodium) for Injection**

  Company: Sedor Pharmaceuticals, LLC

  Treatment for: Status Epilepticus

  Sesquient (Fosphenytoin Sodium for injection) is a Captisol-enabled™, room-temperature stable formulation of fosphenytoin sodium indicated for the treatment of status epilepticus in adults and children.

  FDA Approves Sesquient (Fosphenytoin Sodium) for the Treatment of Status Epilepticus in Adult and Pediatric Patients - November 9, 2020

  Bronchitol

- **(Mannitol) Inhalation Powder**

  Company: Chiesi USA, Inc.

  Treatment for: Cystic Fibrosis

  Bronchitol (Mannitol) is an inhaled dry powder formulation of the sugar alcohol mannitol indicated as add-on maintenance therapy to improve pulmonary function in adult patients 18 years of age and older with cystic fibrosis.

  FDA Approves Bronchitol (Mannitol) Inhalation Powder to Improve Pulmonary Function in Adult Patients with Cystic Fibrosis - November 2, 2020

  Eysuvis

- **(Loteprednol Etabonate) Ophthalmic Suspension**

  Company: Kala Pharmaceuticals, Inc.

  Treatment for: Dry Eye Disease

  Eysuvis (Loteprednol Etabonate) is an ophthalmic corticosteroid formulation for the temporary relief of signs and symptoms of dry eye disease.

  FDA Approves Eysuvis (Loteprednol Etabonate) Ophthalmic Suspension for the Short-Term Treatment of the Signs and Symptoms of Dry Eye Disease - October 27, 2020

  Veklury

- **(Remdesivir) Injection**

  Company: Gilead Sciences, Inc.

  Treatment for: COVID-19

  Veklury (Remdesivir) is a SARS-CoV-2 nucleotide analog RNA polymerase inhibitor indicated for the treatment of COVID-19 patients who require hospitalization.

  FDA Approves Veklury (Remdesivir) for the Treatment of COVID-19 - October 22, 2020

  Inmazeb

- **(Atoltivimab, Maftivimab, and Odesivimab-ebgn) Injection**

  Company: Regeneron Pharmaceuticals, Inc.

  Treatment for: Zaire EbolavirusInfection

  Inmazeb is (Atoltivimab, Maftivimab, and Odesivimab) is a monoclonal antibody combination indicated for the treatment of Zaire ebolavirus infection in adults and children, including newborns of mothers who have tested positive for the virus.

  FDA Approves Inmazeb (Atoltivimab, Maftivimab and Odesivimab-ebgn) Antibody Cocktail for Ebola (Zaire Ebolavirus) - October 14, 2020

  Alkindi Sprinkle

- **(Hydrocortisone) Oral Granules**

  Company: Eton Pharmaceuticals, Inc.

  Treatment for: Adrenocortical Insufficiency

  Alkindi Sprinkle (Hydrocortisone granules in capsules for opening) is an immediate-release pediatric formulation of the approved glucocorticoid hydrocortisone for the treatment of adrenocortical insufficiency in infants, children and adolescents.

  FDA Approves Alkindi Sprinkle (Hydrocortisone oral granules) for Pediatric Adrenocortical Insufficiency - September 30, 2020

  Gavreto

- **(Pralsetinib) Capsules**

  Company: Genentech, Inc.

  Treatment for: Non-Small Cell Lung Cancer

  Gavreto (Pralsetinib) is an oral selective RET kinase inhibitor for the treatment of adult patients with metastatic rearranged during transfection (RET) fusion- positive non-small cell lung cancer (NSCLC) as detected by an FDA approved test.

  FDA Approves Gavreto (Pralsetinib) for the Treatment of Adults With Metastatic RET Fusion-Positive Non-Small Cell Lung Cancer - September 4, 2020

  Detectnet

- **(Copper Cu 64 Dotatate) Injection**

  Company: RadioMedix Inc.

  Treatment for: Positron Emission Tomography Imaging

  Detectnet (Copper Cu 64 Dotatate) is a radioactive diagnostic agent indicated for use with positron emission tomography (PET) for localization of somatostatin receptor positive neuroendocrine tumors (NETs) in adult

patients.

FDA Approves Detectnet (Copper Cu 64 Dotatate injection) Positron Emission Tomography (PET) Agent - September 8, 2020

Onureg

- **(Azacitidine) Tablets**

  Company: Bristol-Myers Squibb Company

  Treatment for: Acute Myeloid Leukemia

  Onureg (Azacitidine) is a nucleoside metabolic inhibitor indicated for the continued treatment of adult patients with acute myeloid leukemia.

  FDA Approves Onureg (Azacitidine tablets) as Continued Treatment for Adults in First Remission with Acute Myeloid Leukemia - September 1, 2020

  Qdolo

- **(Tramadol Hydrochloride) Oral Solution**

  Company: Athena Bioscience, LLC

  Treatment for: Pain

  Qdolo (Tramadol Hydrochloride) is an opioid agonist indicated in adults for the management of pain severe enough to require an opioid analgesic and for which alternative treatments are inadequate.

  FDA Approves Qdolo (Tramadol Hydrochloride) Oral Solution for the Management of Severe Pain - September 8, 2020

  Xaracoll

- **(Bupivacaine Hydrochloride) Implant**

  Company: Innocoll Holdings Limited

  Treatment for: Postsurgical Pain Relief Following Open Inguinal Hernia

  Xaracoll (Bupivacaine Hydrochloride) is a fully bioresorbable collagen implant containing the local anesthetic bupivacaine indicated for acute postsurgical pain relief for up to 24 hours in adults following open inguinal hernia repair.

  FDA Approves Xaracoll (Bupivacaine Hydrochloride) Implant for Acute Postsurgical Pain Relief Following Open Inguinal Hernia Repair - August 31, 2020

  Sogroya

- **(Somapacitan-beco) Injection**

  Company: Novo Nordisk

  Treatment for: Adult Human Growth Hormone Deficiency

  Sogroya (Somapacitan-beco) is a human growth hormone analog indicated for the replacement of endogenous growth hormone in adults with growth hormone deficiency.

  FDA Approves Sogroya (Somapacitan-beco) a Once-Weekly Treatment for Adult Growth Hormone Deficiency - August 28, 2020

  Winlevi

- **(Clascoterone) Cream**

  Company: Cassiopea SpA

  Treatment for: Acne

  Winlevi (Clascoterone) cream is a first-in-class topical androgen receptor inhibitor indicated for the topical treatment of acne vulgaris in patients 12 years of age and older.

  FDA Approves Winlevi (Clascoterone) Cream for the Treatment of Acne - August 27, 2020

  Kesimpta

- **(Ofatumumab) Injection**

  Company: Novartis Pharmaceuticals Corporation

  Treatment for: Multiple Sclerosis

  Kesimpta (Ofatumumab) is a CD20-directed cytolytic antibody indicated for the treatment of relapsing forms of multiple sclerosis (MS), to include clinically isolated syndrome, relapsing-remitting disease, and active secondary progressive disease, in adults.

  FDA Approves Kesimpta (Ofatumumab) Targeted B-cell Therapy for Patients with Relapsing Multiple Sclerosis - August 20, 2020

  Cystadrops

- **(Cysteamine Hydrochloride) Ophthalmic Solution**

  Company: Recordati Rare Diseases Inc.

  Treatment for: Corneal Cystine Crystal Accumulation

  Cystadrops (Cysteamine Hydrochloride) is a cystine-depleting agent indicated for the treatment of corneal cystine crystal deposits in adults and children with cystinosis.

  FDA Approves Cystadrops (Cysteamine) Ophthalmic Solution for the Ocular Manifestations of Cystinosis - August 26, 2020

  Enspryng

- **(Satralizumab-mwge) Injection**

  Company: Genentech, Inc.

  Treatment for: Neuromyelitis Optica Spectrum Disorder

  Enspryng (Satralizumab-mwge) is an interleukin-6 (IL-6) receptor antagonist indicated for the treatment of neuromyelitis optica spectrum disorder (NMOSD) in adult patients who are anti-aquaporin-4 (AQP4) antibody positive.

  FDA Approves Enspryng (Satralizumab-mwge) for Neuromyelitis Optica Spectrum Disorder - August 14, 2020

  Viltepso

- **(Viltolarsen) Injection**

  Company: NS Pharma, Inc.

  Treatment for: Duchenne Muscular Dystrophy

  Viltepso (Viltolarsen) is an antisense oliogonucleotide indicated for the treatment of Duchenne muscular dystrophy (DMD) in patients who have a confirmed mutation of the DMD gene that is amenable to exon 53 skipping.

  FDA Approves Viltepso (Viltolarsen) for the Treatment of Duchenne Muscular Dystrophy in Patients Amenable

to Exon 53 Skipping Therapy - August 12, 2020

Evrysdi

- **(Risdiplam) for Oral Solution**

  Company: Genentech, Inc.

  Treatment for: Spinal Muscular Atrophy

  Evrysdi (Risdiplam) is a survival of motor neuron 2 (SMN2) splicing modifier indicated for the treatment of spinal muscular atrophy (SMA) in patients 2 months of age and older.

  FDA Approves Evrysdi (Risdiplam) for Treatment of Spinal Muscular Atrophy (SMA) in Adults and Children 2 Months and Older - August 7, 2020

  Olinvyk

- **(Oliceridine) Injection - formerly Olinvo**

  Company: Trevena, Inc.

  Treatment for: Pain

  Olinvyk (Oliceridine) is an opioid agonist for the management of moderate to severe acute pain in adults.

  FDA Approves Olinvyk (Oliceridine) Injection for the Management of Severe Acute Pain - August 10, 2020

Spectacular Medical Technology Innovations

1. Augmented, Virtual, and Mixed reality are all technologies opening new worlds for the human senses. Augmented Reality (AR) can be used by surgeons for projecting potentially life-saving information into their eyesight during operations, Virtual Reality (VR) can be used in psychiatry to treat phobias efficiently, and Mixed Reality is able to bring revolutionary novelties to medical education, or pre-operative surgical planning, among others.

2. Research has geared up lately in the area of brain-computer interfaces (BCI). The first neuroprosthetics is already on the market: you can purchase cochlear implants, and retinal implants. Also in use, are brain implant therapies for people paralyzed by spinal cord injury or other neurological damage. A chip inserted into the brain reads off electrical signals that are translated by a computer to restore some movement and communication.

3. Cyborgs Advances in future medical technology will not just repair physical disadvantages such as impaired eyesight but will also create superhuman powers from having the eyesight of an eagle to possessing the hearing of a bat. Hearing aids powered with artificial intelligence, earbuds making you multilingual, or RFID chips already point to that direction.

4. 3D Printing Drugs: The FDA has approved an epilepsy drug called Spritam that is made by 3D printers. It prints out the powdered drug layer by layer to make it dissolve faster than average pills.

5. Voice as Diagnostic and Medical Support Tool: Researchers and medical professionals have noticed in the last years how useful voice-based solutions can prove to be in healthcare – both in diagnostics as well as in supporting their daily tasks, such as administration.

   Scientists found that characteristics of patients' voices – or as medicine labels them, Vocal Biomarkers – reveal a lot about their health; and help in detecting serious diseases and health risks. For example, an Israeli company, 'Beyond Verbal' deals with emotion analytics and provides voice analysis software. It has announced that its algorithms were successful in helping to detect the presence of coronary artery disease (CAD) in a group of patients. Another initiative, Sonde Health Inc., a Boston-based company develops a voice-based technology platform for monitoring and diagnosing mental and physical medical conditions.

6. Digital Tattoos for a more invisible healthcare: With the development in 3D printing as well as circuit printing technologies, flexible electronics and materials, applying so-called digital tattoos or electronic tattoos on the skin for some days or even weeks became possible. Some researchers use gold nanorods, others graphine or various polymers with rubber backing to apply the tattoo on the skin without causing irritation. These flexible, waterproof materials impervious to stretching and twisting coupled with tiny electrodes are able to record and transmit information about the wearer to smartphones or other connected devices. They could allow healthcare experts to monitor and diagnose critical health conditions such as heart arrhythmia, heart activities of premature babies, sleep disorders and brain activities noninvasively. Moreover, by tracking vital signs 24 hours a day, without the need for a charger, it is especially suited for following patients with high risks of stroke.

7. Wearable sensor monitors health, administers drugs using saliva and tears: A new kind of wearable health device would deliver real-time medical data to those with eye or mouth diseases. The sensors would be placed near the tear duct or mouth to collect samples, which would then produce data viewable on a user's smartphone or sent to their doctor. The tears- and saliva-sensing technology can help manage diseases like oral ulcers, oral cancer, eye wrinkles and oral or eye infections like keratitis, which is inflammation of the clear tissue on the front of the eye.

8. Nanomedicine : Nanomedicine is the medical application of nanotechnology, the technology that operates on the atomic, molecular, or supramolecular scale. For something of such a small size, the potential is huge: nanomedicine has applications in imaging, sensing, diagnosis, and delivery through medical devices. Researchers are finding new ways to use nanomedicine to target individual cells, and in 2021, that research will be put into action. CytImmune Sciences, a leader in cancer nanomedicine, has recently completed a Phase I trial of using gold nanoparticles to target drug delivery to tumors; BlueWillow Biologics, a biopharmaceutical company, has developed nanotech that fights viruses and bacteria.

9. 5G-enabled devices: If the biggest drivers of cutting-edge technology — AI, IoT, and Big Data — are to reach their full potential in healthcare, they need a reliable and lightning-fast internet connection. Enter 5G. With a reliable real-time connection, the most immediate benefits will be seen in telemedicine, expanding access to care for millions. But that's only the beginning. More connected devices, with more authentic data streams, open up the possibility of a revolutionized healthcare system. With next-to-zero latency, 5G-connected sensors and medical devices can capture and transmit data nearly instantaneously. That will improve patient monitoring, which will in turn improve patient outcomes. Futurists are already considering the benefits of a marriage between 5G, healthcare, and robotics.

10. Tricorders: Basil Leaf Technologies has rolled out a very real tricorder, known as DxtER. It can be used by the patient, in their own home, without any medical training. With a sophisticated diagnostics engine, DxtER pulls patient data from multiple sources and runs them through algorithms that recognize 34 different health conditions, including stroke, tuberculosis, pneumonia, and diabetes. Live long, and prosper.

11. Healthcare's Digital Assistants: Digital assistants like Alexa and Google Home have changed the way people interact with technology; in 2021, those digital assistants are taking on a similar role in healthcare. Natural language processing and ambient listening have natural applications in the capture, analysis, and utilization of health data. In 2020, Epic and Cerner, the designers of the two largest electronic health records (EHR) systems, began integrating voice-enabled virtual assistants on their software. AI startup Saykara has launched a new voice assistant that can listen to, and understand, a physician-patient conversation, without being prompted through voice commands.

12. Smart Pacemakers: The artificial pacemaker, which dates back over 100 years, is still a critical piece of medical technology: over a million patients use them. By delivering electrical impulses to heart muscle chambers, they can prevent or correct life-threatening heart arrhythmias. Remotely monitoring these devices is an essential part of their functionality. Traditionally, that monitoring has been far from optimal, relying on complex interfaces that the patient may not fully understand. In 2021, pacemakers will get a little bit smarter. By enabling pacemakers with Bluetooth technology, they can be linked with smartphone-based mobile apps that patients better understand and utilize. That, in turn, will improve remote monitoring, and, as a result, patient outcomes. Medtronic, one of the largest medical technology companies in the world, has already rolled out its next-gen patient monitoring system for pacemakers. More will follow.

13. A Lab on Chip: If it's taking too long to get samples to the lab, why not bring the lab to the samples? That was the idea of researchers at Stanford University, who recently developed what they call “a lab on a chip” based on CRISPR enzyme Cas12. About half the size of a credit card, it contains a complex network of channels smaller than the width of a human hair and can deliver a coronavirus test's results in under 30 minutes. Researchers say that the test could be modified to detect other infections, too, by recalibrating the CRISPR enzyme for a different genetic marker. As the Covid-19 pandemic taught the world, testing is the first step in combating infectious disease. With a lab on a chip, that testing can be done quickly, safely, cheaply, and more efficiently.

14. Wearables with a Purpose: Fitness trackers have been on the rise for years: FitBit shipped 9.9 million of its wearable devices in 2019. But the next trend in wearables for medical technology is more specific. For diabetes patients, wearable continuous glucose monitors (CGMs) are set to become thpe new normal. Wearable CGMs remove the need for intermittent glucose testing and instead keep track of one's blood sugar levels in real time. This allows users to see the immediate impacts of food and exercise, and shape their lifestyles accordingly. It can also catch cases of hyperglycemia immediately. Medical technology companies are jumping in with two feet: Dexcom, a CGM developer, had revenue of $1.9 billion in 2020 and expects a 15 to 20 percent jump in 2021.

Call for Papers

Pacific Journal of Medical and Health Sciences (ISSN No: 2456-7450) is a quarterly journal of the Pacific Group of Institutions in the Medical and Health Sciences. The subject areas for publication include, but are not limited to, the following fields: Anatomy, Anesthesia, Biochemistry, Biomedical Sciences, Cancer, Cardiology, Community Medicine, Dermatology and Venereal Diseases, Diabetes, Endocrinology, Epidemiology and Public Health, Forensic Science, Gastroenterology, Geriatric Medicine, Hematology, Immunology, Infectious Diseases, Internal Medicine, Microbiology, Nephrology, Neurology, Neurosurgery, Obstetrics and Gynecology, Ophthalmology, Orthopedics, Otorhinolaryngology, Pediatrics, Pathology, Psychiatry, Pulmonary Medicine, Radiology, Toxicology, Dentistry, Nursing, Health Informatics, Occupation Safety and Health. Its key aims are to provide interpretations of growing points in medical knowledge by trusted experts in the field, and to assist practitioners in incorporating not just evidence but new conceptual ways of thinking into their practice.

Invitation for Manuscripts

The *Pacific Journal of Medical and Health Sciences* invites original research based papers, medical case studies and paper reviews. The manuscripts received are sent to referees and are accepted on their recommendation only.

Guidelines for Authors

The *Pacific Journal of Medical and Health Sciences* is keen to promote high quality original research based papers, medical case studies and paper reviews based on sound evidence. Sufficient information should be given in the paper for it to be capable of reproduction by other authors and added to as more data become available.

Your paper should be approximately 8-15 pages in length, including abstract, all figures and tables and references.

Preparation of Manuscript

Please remember that your article should be an original piece of work in its own right and be written without the extensive reuse of previously published material. All source material should be fully acknowledged and referenced.

As part of the Cross-check initiative to detect and prevent plagiarism, the *Pacific Journal of Medical and Health Sciences* screens all accepted manuscripts. Plagiarism, including duplicate publication of the author's own work, in whole, or in part without proper citation is not accepted by the journal.

References

Number references consecutively in the order in which they are first mentioned. Identify references in text, tables, and captions by Arabic numerals superscripted above the line.

Abbreviations and Units

Only use standard abbreviations. SI units should always be used.

Trade Units

These should be marked with ® and proprietary drug names should be capitalised e.g. Cifran.

Manuscript Order

- TITLE page
    - Full title of the article
    - Initials (or first name) and surname of each author as they should appear in the chapter (Degrees and appointments will NOT be included)
    - Department and institution to which the work should be attributed
    - Name, full postal address, telephone and fax numbers and email address of author responsible for correspondence

- STRUCTURED ABSTRACT of no more than 150 words. The abstract headings should include:
    - Introduction or background
    - Sources of data
    - Areas of agreement
    - Areas of controversy
    - Growing points
- KEY WORDS: a minimum of 3 key words which reflect the content of the review
- TEXT to follow a similar general format to the abstract. Authors should ensure that technical language used is understandable to a scientific but general readership. A glossary may be a useful addendum where appropriate.
- DISCUSSION OR CONCLUSIONS, which gives more detail of areas of agreement, controversy, growing points and areas timely for developing research.
- ACKNOWLEDGEMENTS
- REFERENCES listed in numerical sequence according to their order of appearance in the text. Avoid using abstracts as references.

Journals

If there are more than 6 authors of a paper (see 19 in example below), abbreviate to the first 3 names and then add 'et al'. Use abbreviated journal title as given in Index Medicus.

Examples:

18. Candis JH. Artificial joint materials. J Biomed Eng 1994; 45: 54-78
19. Paul KN, Smith ADF, Manners M et al. Coagulation mechanisms. J Cell Biol 1993; 430: 200-30

Books

Authors and title of chapter are followed by the editor(s) of the book, title of book, main town of publisher, publisher's name (omit 'Press', '& Sons', 'Inc' etc), year and page range.

Examples:

20. Acorn AD, Management of rheumatoid arthritis. In: Brown CC, Davies GH. (eds) Inflammatory diseases. 3rd edn. London: Apple, 1992; 203-30
21. Dunlop E, David BC, Winston WDC. (eds) Diabetes update. New York: Pullworth, 1983

Electronic Source (Website/Web Page/Online Journal Article)

The publication is listed first followed by the article title, web address, publication date, and the date last accessed.

Example:

Public Health Laboratory Service. Antimicrobial Resistance in 2000: England and Wales. http://www.hpa.org.uk./infections/topics_az/antimicrobial_resistance/amr.pdf (7 January 2004, date last accessed).

Figures

The use of figures is strongly encouraged where they can assist the reader in the understanding of the article and replace lengthy passages of text. Number figures consecutively and, where figures are related, number them 1(a), 1(b), 1(c) etc.

Photographs

These should be of sufficiently high quality with respect to detail, contrast and fineness of grain.

Tables

Number tables consecutively and place a descriptive heading above each table. Give each column a short heading. Explain in footnotes all non-standard abbreviations used in a table.

Figure Captions

Captions should be brief descriptions of each figure or illustration (e.g. Fig. 1 The diagram shows…). Where relevant, captions should also include definitions for all symbols used.

Submission of Manuscript

Pacific Journal of Medical and Health Sciences accepts original research papers/articles and book reviews in Microsoft Word format via e-mail, ***pmchresearchjournal@gmail.com.***

Format of Manuscript

Submission of manuscript must have a cover letter showing the full name of author(s) along with correspondence address including e-mail and contact numbers. The title should appear on the first page of the manuscript, as we use peer-review process, so that we can remove the identity of the author(s) before sending it to referees.

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Guidelines for Formatting the Paper

Paper be typed	MS Word
Font	Times New Roman
Font size	16pt. and Bold for Title of the Paper, 14pt and Bold for heading in the paper, 12pt. for text.
Line spacing	1.5
Margin	1 inch on all sides.
Layout	Use a single column layout with both left and right margins justified.
Language	English and Hindi
The title page	It should contain title of the paper, followed by name(s) of author(s), designation, affiliation, e-mail, phone, fax with STD code and Postal Address. Authors should not write their name and affiliations anywhere else in the paper.
Tables, graphs, and charts etc.	In the text, the references for table should be mentioned as Table-1 and so on, not as above table. Same should be followed in case of graphs and charts. Each table, graph and chart should have its own heading and source.
Abstract	500 words
Full length paper	5000 words
References	APA with hanging format.

(Editorial Team)

Peer-Review Policy
Double-blind Peer Review Process

Peer-review is the system used to assess the quality of a manuscript before it is published. Independent researchers in the relevant research area assess submitted manuscripts for originality, validity and significance to help editors determine whether the manuscript should be published in their journal.

In cases where the journal is unable to find sufficient peer reviewers, the Editorial Board may identify suitable reviewers and provide reports to avoid further delays for authors. Manuscripts submitted to Pacific Journal of Medical and Health Sciences are first assessed by our editors.

The aim and objective of the Pacific Journal of Medical and Health Sciences is to ensure the high standards of the original and scientific research papers and articles. With our Journal, a double-blind peer review system is in operation.

In the case of proposed publications, our editorial board will judge and evaluate the proposed manuscript on certain parameters like relevance of the submitted work with the aims and scope of the journal, scientific quality the work and contribution of the work in respective branch of knowledge. If, the proposed work found suitable in quick review by the editorial board than editor will forward copies of an author's work to two experts ("referees" or "reviewers") in the respective field by e-mail or through a web-based manuscript processing system.

These referees or reviewers will return an evaluation of the proposed work to the editor in prescribed format along with weaknesses, problems, and suggestions for improvement. Further, this evaluation will be forwarded by editor after reviewing the comments of referees in context with the scope of the journal to the author for consideration and improvement of the proposed work.

Referees' evaluations usually include an explicit recommendation of what to do with the manuscript or proposed work as per the options available in the prescribed format.

During this peer review process, the role of the referees is advisory, and the editor is typically under no formal obligation to accept the opinions of the referees. Moreover, in the process of scientific publication, the referees do not communicate with each other, do not act as a group, and are not aware of each other’s identities or comments.

In particular situations, where the referees disagree considerably about the quality of a manuscript, there are a number of strategies for reaching a decision. When the editor receives positive and negative reviews for the same manuscript by two different reviewers, the editor will ask for one or more additional reviews or on the basis of comments of one reviewer, the edit may take his/her decision about the respective manuscript.

Reviewers Guidelines

ETHICS AND RESPONSIBILITY

We are committed to upholding the integrity of the work we publish. Pacific Journal of Medical and Health Sciences takes issues of copyright infringement, plagiarism or other breaches of best practice in publication very seriously. We seek to protect the rights of our authors and we always investigate claims of plagiarism or misuse of published articles. Equally, we seek to protect the reputation of our journal against malpractice. Submitted articles may be checked with duplication-checking software. Where an article is found to have plagiarized other work or included third-party copyright material without permission or with insufficient acknowledgement, or where the authorship of the article is contested, we reserve the right to take action including, but not limited to: publishing an erratum or corrigendum (correction); retracting the article (removing it from the journal); taking up the matter with the Head of Department or Dean of the author's institution and/or relevant academic bodies or societies; banning the author from publication in the journal in question or appropriate legal action.

We recommend that if reviewers suspect any of the following problems with any article that they are reviewing that they contact the journal editor to discuss the situation without delay. Reviewers should keep all information about such matters confidential and not discuss them with colleagues other than the journal editor.

1. If you suspect that the paper has been either published or submitted to another journal.
2. If you suspect that the paper is duplicating the work of others.
3. If you suspect that there might be problems with the ethics of the research conducted.
4. If you suspect that there might be an undeclared conflict of interest attached to the paper (Editors might have more information about this than you do so it is best to check).

We recommend that reviewers should think carefully about their own potential conflicts of interest relating to the paper before undertaking the review. They should also notify the editor if they become aware of the identity of the author during blind peer review. Additionally, reviewers should be careful not to make judgments about the paper based on personal, financial, intellectual biases or any other considerations than the quality of the research and written presentation of the paper.

PURPOSE OF PEER REVIEW

It is widely accepted that Peer Review is the most valid form of research evaluation and it is a cornerstone in the process of bringing academic research to publication in the following ways:

Evaluation - Peer review is an effective form of research evaluation to help select the highest quality articles for publication.

Integrity - Peer review ensures the integrity of the publishing process and the scholarly record. Reviewers are independent of journal publications and the research being conducted.

Quality - The filtering process and revision advice improve the quality of the final research article as well as offering the author new insights into their research methods and the results that they have compiled. Peer review gives authors access to the opinions of experts in the field who can provide support and insight.

TYPE OF PEER REVIEW OF JOURNAL

Double blind peer review - names are hidden from both reviewers and the authors.

HOW TO REVIEW ARTICLES

Referees are sent invitations to review papers by journal editors. These requests are made via email. If you are asked to provide a review, in order to avoid delays, we would be grateful if you could let us know as soon as possible if you are unable to complete it at the time or if a problem arises after the invitation has been accepted. Suggestions for alternative reviewers are always gratefully received!

Below we present some advice and guidance about how to conduct a review and put together a reviewer report that will be effective and beneficial to authors:

ETIQUETTE

Timeliness - We understand that our reviewers are busy so it won't always be possible for invitations to be accepted. Please let us know as soon as possible if they need to refuse a review or if a problem arises after the invitation has been accepted. Most journal editors are grateful to receive suggestions about someone else that might be suitable to do the review if you have to decline the invitation.

Conflict of Interest - it is important to highlight to the journal editor any conflict of interest that you feel might occur if you review the paper. Please do so as discretely and as quickly as possible.

Discussion -- it is important to discuss with the journal editor any concerns that you have about the paper or their specific requirements for review if you are being invited to review for the first time. Editors are usually open to discussing their expectations and journal requirements with reviewers.

Ethics -Refer ethics and responsibility related to peer review.

INDIVIDUAL JOURNAL REVIEWER GUIDELINES

These guidelines include a list of questions and will usually offer the reviewer the chance to make general comments

- Read the paper very carefully.
- Relevance to the publication (most editors will reject at submission those articles that do not match the aims and scope of the journal, but it is worth considering this as you read the paper).
- Significance of the research within the field.
- Originality of the work conducted. It is also important to consider whether the author has ever published a substantially similar paper elsewhere (if you suspect the work may not be original, please view our ethics page for information about how to deal with a variety of situations).
- The methodology employed during the research.
- Technical accuracy.

STRUCTURE AND COMMUNICATION

- Accuracy of references
- Overall Structure of the paper, communication of main points and flow of argument
- Quality of written language and structure of the article
- Effectiveness of the article abstract and introduction (some journals will request
- Whether the argument is clear and logical and the conclusions presented are supported by the results or evidence presented
- Whether the title of the article is suitable or effective
- Whether the abstract is a good summary of the article
- Whether the work meets with the article types accepted by the journal

The accessibility of the paper to a broad readership

Whether the paper is internally consistent

FEEDBACK IN YOUR REVIEWER REPORT - GIVING ADVICE TO AUTHORS AND SUGGESTING REVISIONS

- Be as objective as possible in your comments and criticisms and avoid making negative comments about work referenced in the article

- Be specific and as constructive as possible in your criticism. Be clear about what needs to be added or revised.
- If relevant, make suggestions about additional literature that the author might read to enrich or improve their arguments
- You should ensure that you are clear which of your comments you are happy for the author to see and which are meant specifically for the journal editor in order to avoid confusion or bad feeling
- While peer reviewers should feel free to make general comments on written quality and make suggestions about how articles might be improved by broadening reading of other literature, it is not the job of the peer reviewer to rewrite articles or suggest detailed changes to wording

MAKING A DECISION

> Recommend whether a paper should be accepted, rejected or revised (major or minor revisions)

> Most importantly, keep all activity, content and comments relating to the paper confidential

Most important - keep all activity, content and comments relating to the paper confidential.

Publication Ethics and Publication Malpractice Statement

Our publication ethics and publication malpractice statement is mainly based on the Code of Conduct and Best-Practice Guidelines for Journal Editors (Committee on Publication Ethics, 2011).

EDITORS' RESPONSIBILITIES

Publication Decisions

The editor is responsible for deciding which of the papers submitted to the journal will be published. The editor will evaluate manuscripts without regard to the authors' race, gender, sexual orientation, religious belief, ethnic origin, citizenship, or political philosophy. The decision will be based on the paper's importance, originality and clarity, and the study's validity and its relevance to the journal's scope. Current legal requirements regarding libel, copyright infringement, and plagiarism should also beconsidered.

Confidentiality

The editor and any editorial staff must not disclose any information about a submitted manuscript to anyone other than the corresponding author, reviewers, potential reviewers, other editorial advisers, and the publisher, as appropriate.

Disclosure and Conflicts of Interest

Unpublished materials disclosed in a submitted paper will not be used by the editor or the members of the editorial board for their own research purposes without the author's explicit written consent.

REVIEWERS' RESPONSIBILITIES

Contribution to Editorial Decisions

The peer-reviewing process assists the editor and the editorial board in making editorial decisions and may also serve the author in improving the paper.

Promptness

Any selected referee who feels unqualified to review the research reported in manuscript or knows that its prompt review will be impossible should notify the editor and withdraw from the review process.

Confidentiality

Any manuscripts received for review must be treated as confidential documents. They must not be disclosed to or discussed with others except as authorized by the editor.

Standards of Objectivity

Reviews should be conducted objectively. Personal criticism of the author is inappropriate. Referees should express their views clearly with supporting arguments.

Disclosure and Conflict of Interest

Privileged information or ideas obtained through peer review must be kept confidential and not used for personal advantage. Reviewers should not consider manuscripts in which they have conflicts of interest resulting from competitive, collaborative, or other relationships or connections with any of the authors, companies, or institutions associated with the papers.

AUTHORS' DUTIES

Reporting Standards

Authors of original research reports should present an accurate account of the work performed as well as an objective discussion of its significance. Underlying data should be represented accurately in the paper. A paper should contain sufficient detail and references to permit others to replicate the work. Fraudulent or knowingly inaccurate statements constitute unethical behavior and are unacceptable.

Originality, Plagiarism and Acknowledgement of Sources

Authors will submit only entirely original works, and will appropriately cite or quote the work and/or words of others. Publications that have been influential in determining the nature of the reported work should also be cited.

Multiple, Redundant or Concurrent Publication

In general, papers describing essentially the same research should not be published in more than one journal. Submitting the same paper to more than one journal constitutes unethical publishing behavior and is unacceptable. Manuscripts which have been published as copyrighted material elsewhere cannot be submitted. In addition, manuscripts under review by the journal should not be resubmitted to copyrighted publications. However, by submitting a manuscript, the author(s) retain the rights to the published material.

Authorship of the Paper

Authorship should be limited to those who have made a significant contribution to the conception, design, execution, or interpretation of the reported study. All those who have made significant contributions should be listed as co-authors. The corresponding author ensures that all contributing co-authors and no uninvolved persons are included in the author list. The corresponding author will also verify that all co-authors have approved the final version of the paper and have agreed to its submission for publication. Disclosure and conflicts of interest

All authors should include a statement disclosing any financial or other substantive conflicts of interest that may be construed to influence the results or interpretation of their manuscript. All sources of financial support for the project should be disclosed.

Fundamental errors in published works

When an author discovers a significant error or inaccuracy in his/her own published work, it is the author's obligation to promptly notify the journal editor or publisher and to cooperate with the editor to retract or correct the paper in form of an erratum.

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