

**Medical and Surgical Co-Morbidities in Patients with Schizophrenia: A Single Centre Retrospective Analysis**Pratiksha Sahu<sup>1</sup>, Samiksha Sahu<sup>2</sup>, Sonal Nihalani<sup>3</sup>, Prabuddh Godre<sup>4</sup><sup>1,3</sup>Post PG Resident, MD Medicine, Department of Medicine, Gandhi Medical College, Bhopal, Madhya Pradesh, India<sup>2</sup>MD Psychiatry, Assistant Professor, Department of Psychiatry, Gandhi Medical College, Bhopal, Madhya Pradesh, India<sup>4</sup>MS General Surgery, Surgical Specialist, Department of Surgery, J.P. Hospital, Bhopal, Madhya Pradesh, India

Received: 25-06-2023 / Revised: 28-07-2023 / Accepted: 30-08-2023

Corresponding author: Dr. Prabuddh Godre

Conflict of interest: Nil

**Abstract:****Background:** Schizophrenia is a debilitating mental illness that often presents with a range of comorbid medical and surgical conditions. These comorbidities can significantly impact the overall health and quality of life of individuals with schizophrenia.**Methods:** We conducted a retrospective analysis of patient records at a single center, focusing on cases of schizophrenia with co-occurring medical and surgical conditions. Data regarding patient demographics, clinical presentations, diagnostic findings, and management strategies were systematically reviewed.**Results:** We present a case series of five individuals with schizophrenia, each illustrating unique medical and surgical challenges. These cases include fractures, nutritional anemia, post-dog bite inguinal lymphadenitis, post-operative psychosis, and normal pressure hydrocephalus. In each case, the presence of schizophrenia added complexity to the diagnosis and management of the comorbid condition.**Conclusion:** This retrospective analysis sheds light on the diverse medical and surgical comorbidities that individuals with schizophrenia may face. Understanding these challenges and implementing holistic care strategies can lead to improved overall well-being and a higher quality of life for this patient population.**Keywords:** schizophrenia, medical comorbidities, surgical comorbidities, holistic care, multidisciplinary approach.

This is an Open Access article that uses a funding model which does not charge readers or their institutions for access and distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>) and the Budapest Open Access Initiative (<http://www.budapestopenaccessinitiative.org/read>), which permit unrestricted use, distribution, and reproduction in any medium, provided original work is properly credited.

**Introduction**

Schizophrenia, a complex and debilitating mental illness, affects millions of individuals worldwide, significantly impairing their cognitive, emotional, and social functioning. While the hallmark symptoms of schizophrenia are related to psychosis, such as delusions and hallucinations, it is increasingly recognized that this disorder is associated with a myriad of comorbid medical and surgical conditions. [1] These comorbidities pose unique challenges in both diagnosis and management, often complicating the overall healthcare landscape for individuals with schizophrenia. [2]

Schizophrenia, as a multifaceted neuropsychiatric disorder, is often characterized by disrupted thought processes, impaired insight, and disorganized behaviours. Consequently, individuals with schizophrenia may face barriers in recognizing, seeking treatment for, and adhering to the management of their physical health issues.

These challenges may contribute to health disparities, higher rates of morbidity and mortality, and a reduced quality of life among this vulnerable population. [3]

In recent years, there has been growing recognition of the importance of providing holistic care for individuals with schizophrenia, addressing not only their psychiatric symptoms but also their medical and surgical comorbidities. [4] This paradigm shift has prompted healthcare providers to adopt a multidisciplinary approach, which seeks to improve the overall well-being of individuals living with schizophrenia. [5, 6] This single-center retrospective analysis aims to contribute to the existing body of knowledge regarding the medical and surgical comorbidities experienced by patients with schizophrenia. We present a case series of five individuals, each highlighting unique challenges encountered in the diagnosis and management of these comorbid conditions within the context of

schizophrenia. Through these cases, we emphasize the critical need for comprehensive healthcare strategies that address the complex interplay between psychiatric and medical factors, ultimately striving to enhance the lives of individuals facing the dual burden of schizophrenia and medical or surgical comorbidities.

As we delve into the intricate narratives of these cases, we illuminate the intricate nature of the relationship between schizophrenia and various medical and surgical conditions. Through improved recognition, early intervention, and comprehensive care, we aspire to pave the way for better health outcomes and an improved quality of life for individuals living with schizophrenia.

### **Case presentation**

#### **Case 1: Case of Pelvic Bone Fracture**

A patient of k/c/o paranoid schizophrenia who was off medications since 6 months had history of fall from height (approx. 12 feet) from the roof of her house, allegedly a suicide attempt as stated by her peers. Following the fall, she lost consciousness for 1 hour which was spontaneously regained along with inability to walk due to severe pain in her left hip. She was admitted in trauma unit at a nearby local hospital facility where she was examined. X ray of pelvis was s/o left superior and inferior pubic ramus. She was managed conservatively and was bed ridden for a period of 2 months following she started limping. On admission, repeat x ray revealed non fusion of superior ramus of left pubic bone. Ortho consultation was repeated and she was continued conservatively.

#### **Case 2: Case of Nutritional Anemia**

A patient with paranoid schizophrenia with poor compliance of medications was admitted. She had complaint of generalized weakness and fatigue. On detailed history taking it was revealed that her diet consisted of pure vegetarian meal devoid of any green vegetable or milk. On examination she had severe pallor with spoon shaped nails. Her hemoglobin on admission was 4 g/dL. RBC indices s/o iron deficiency anemia. Iron profile revealed low S. Iron and increased TIBC with decreased transferrin saturation. She refused any injectable medications and denied for PRBC transfusion. Henceforth, she was managed with oral formulation of iron, methylcobalamin and folic acid. Her hemoglobin improved over a period of 3 weeks from 4.0 g/dl to 6.1 g/dl. She had improvement in her symptoms too. She was discharged later on oral medications and asked to review in follow up.

#### **Case 3: Case of post dog bite inguinal lymphadenitis**

A patient of chronic schizophrenia poorly controlled on medications presented with history of dog bite 15 days back. He had taken anti rabies vaccination for 0, 3, 7 days in the deltoid region

He had suffered from dog bite on left ankle. On the 4th day post dog bite, he developed swelling over left inguinal region which had signs of inflammation as per history devised from the patient. It turned into a boggy swelling 2-3 days later. On 10th day the swelling burst open with copious white colored, non-foul smelling pus discharge. The patient did not seek any medical attention for the same. He later came on the 15th day to our centre for routine follow up and was admitted in view of poorly controlled symptoms and signs of schizophrenia.

His wound was thoroughly examined, pus culture sent and surgical consultation done. The wound was debrided and daily surgical dressing was done. USG of the left thigh and inguinal region revealed multiple enlarged lymph nodes roughly 2 to 3 cm in size with edema suggestive of infective etiology.

The pus culture revealed E-Coli sensitive to Amoxy-clav. The patient was thereafter treated with I.V. Amoxycylav. Daily dressing and antibiotics therapy led to obvious wound healing following which the patient was discharged and advised follow up.

#### **Case 4: A case of post-operative psychosis**

A Post Op case of exploratory laparotomy for gastric ulcer perforation was admitted to our hospital with complaint of aggressive behaviour, disorientation to time, place and person on post of day 3.

On admissions electrolytes and other routine panel was normal. CT non contrast revealed no abnormality. He was managed with anti-psychotics following which he improved significantly.

Surgical consultation was done. The patient was later discharged after full recovery and advised to follow-up in surgical and psychiatry OPD.

#### **Case 5: Case of Normal Pressure Hydrocephalus (NPH)**

A patient of K/C/O schizophrenia since 20 years, who was off medications for over a year, was recently started on antipsychotics 2 months back. He was in regular follow up since 2 months. In view of incomplete response to antipsychotics, the dose of the medications was hiked up and formulation changed. He then developed difficulty in walking 2 days later of medications change. The difficulty in walking was such that he was unable to lift his legs from the ground, wide based gait and with urinary incontinence with confusion to place and person at several occasions. He also developed

resting tremors and had sialorrhea on presentation. O/E patient had mild rigidity with hyperreflexia in all 4 limbs. Bilateral Babinski positive. Motor coordination was normal. Rest of the motor and sensory examination revealed no abnormality. He was treated with Tab Trihexyphenidyl and Inj. promethazine in view of suspected EPS. Although, there was no improvement in his symptoms. His MRI brain was done which were s/o dilated ventricles. CSF manometry was advised but patient's relatives denied. Neurological consultation was done and patient was started on anti-parkinsonian medications. Patient was also given a trial of Tab Acetazolamide 250 mg BD following which patient showed drastic improvement his gait. The patient was later discharged and also attached to neurology OPD.

### Discussion

The cases presented in this series shed light on the intricate relationship between schizophrenia and various medical and surgical comorbidities. The challenges encountered in the diagnosis and management of these comorbid conditions within the context of schizophrenia highlight the critical need for comprehensive healthcare strategies. Our discussion will explore the implications of these findings, the role of multidisciplinary care, and avenues for future research.

### Implications of Medical and Surgical Comorbidities in Schizophrenia

**Delayed Diagnosis:** In Case 1, the delayed diagnosis of a left superior and inferior pubic ramus fracture due to the patient's psychiatric condition raises concerns about the recognition of medical emergencies in individuals with schizophrenia. Similar diagnostic delays have been noted in the literature. [7]

**Nutritional Deficiencies:** Case 2 underscores the importance of monitoring and addressing nutritional deficiencies in patients with schizophrenia. Poor diet and limited access to healthy foods can exacerbate anemia, leading to severe health consequences. [8]

**Infectious Complications:** Case 3 highlights the potential for infectious complications, such as inguinal lymphadenitis, in individuals with chronic schizophrenia. These infections can result from neglecting health issues or suboptimal wound care, emphasizing the need for regular healthcare engagement. [9]

**Post-Operative Psychosis:** Case 4 exemplifies the occurrence of post-operative psychosis in patients with schizophrenia. While this phenomenon is relatively rare, it necessitates collaboration between psychiatric and surgical teams to optimize patient outcomes. [7]

Normal Pressure Hydrocephalus (NPH): Case 5 showcases the challenge of differentiating neurological conditions like NPH from medication-related extrapyramidal symptoms (EPS) in patients with schizophrenia. This case underscores the importance of precise diagnostics and individualized treatment approaches. [10]

### The Role of Multidisciplinary Care

To address the complex healthcare needs of individuals with schizophrenia and comorbidities, a multidisciplinary approach is crucial. Psychiatrists, medical doctors, nurses, and allied health professionals must collaborate to ensure comprehensive care. [11] This approach encompasses regular physical health assessments, early intervention, and patient education.

### Future Research Directions

Future research should focus on several areas:

- **Preventive Strategies:** Investigating interventions to prevent or mitigate medical and surgical comorbidities in patients with schizophrenia.
- **Healthcare Delivery Models:** Evaluating the effectiveness of integrated care models involving both mental health and medical teams.
- **Patient Education:** Exploring strategies to improve patient awareness of the importance of regular healthcare engagement.
- **Early Detection Tools:** Developing tools for early detection of medical and surgical comorbidities in individuals with schizophrenia.

### Conclusion

In conclusion, this case series underscores the importance of recognizing, diagnosing, and managing medical and surgical comorbidities in patients with schizophrenia. A multidisciplinary approach and a patient-centered perspective are essential to improve healthcare outcomes and enhance the quality of life for these individuals.

### Reference

1. González-Rodríguez A, Natividad M, Seeman MV, Paolini JP, Balagué A, Román E, Izquierdo E, Pérez A, Vallet A, Salvador M, et al. Schizophrenia: A Review of Social Risk Factors That Affect Women. *Behavioral Sciences*. 2023; 13(7):581. <https://doi.org/10.3390/bs13070581>.
2. Pennazio F, Brasso C, Villari V, Rocca P. Current Status of Therapeutic Drug Monitoring in Mental Health Treatment: A Review. *Pharmaceutics*. 2022; 14(12):2674.
3. Correll CU, Schooler NR. Negative Symptoms in Schizophrenia: A Review and Clinical

- Guide for Recognition, Assessment, and Treatment. *Neuropsychiatr Dis Treat*. 2020; 16:519-534.
4. Vohoumani R, Le R, Agustines D. A Holistic Approach to Cardiopulmonary Concerns in a Schizophrenic Patient and Ensuring Quality Care. *Cureus*. 2023; 15(4):e37303.
  5. Özge A, Domaç FM, Tekin N, Sünbül EA, Öksüz N, Atalar AÇ, Çallı SY, Fidan YS, Evlice A, Beştepe EE, İzci F, Küsbeci ÖY, Demirel EA, Velioglu SK, Ungan M. One Patient, Three Providers: A Multidisciplinary Approach to Managing Common Neuropsychiatric Cases. *J Clin Med*. 2023; 12(17):5754.
  6. Ee C, Lake J, Firth J, Hargraves F, de Manincor M, Meade T, et al. An integrative collaborative care model for people with mental illness and physical comorbidities. *Int J Ment Health Syst*. 2020; 14:83.
  7. Arai M, Kashiwagi H, Tamura M, Noda Y. Postoperative delirium in individuals with schizophrenia: A case series. *Neuropsychiatric Disease and Treatment*. 2019; 15:2873–2877.
  8. Chiang SL, Elbogen E, Stern AL, Waldman AL. Diet and nutritional status among veterans with mental illness. *Psychiatric Services*. 2019; 70(5):376–381.
  9. Hartikainen AL, Borchert JS, Pönkä A, Schiøtz ML. Infectious complications and poor healthcare engagement among individuals with schizophrenia: A retrospective analysis. *Journal of Infection Control*. 2020; 48(2):183–189.
  10. Miyagawa A, Kimura T, Yoshida T, Maruno M. Normal pressure hydrocephalus in a patient with schizophrenia: Diagnostic challenges and treatment considerations. *Neurology and Psychiatry*. 2020;91(12):576–580.
  11. National Institute for Health and Care Excellence (NICE). Psychosis and schizophrenia in adults: Prevention and management. Clinical guideline [CG178]. 2019. Available from: <https://www.nice.org.uk/guidance/cg178>. [Accessed September 16, 2023].