Diagnosing Schizophrenia

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***Abstract*—**Schizophrenia is a complex challenging psychological disorder. In this work the psychological and biological causes is documented with the hallucinations as seen in schizophrenia. The authors have presented a case and diagnosed that the client, based on the information provided, is having schizophrenia.

***Keywords*—**Schizophrenia, Genetics, Psychology, Hallucination, Psychotic, Social Relationship, Case Study.

I. Introduction

SCHIZOPHRENIA is a challenging psychological and a disabling brain disorder that makes it difficult to distinguish between what is real and unreal, think clearly, manage emotions, relate to others, and function normally. It is a severe chronic disorder that has affected people throughout history [1]. Schizophrenia affects the way a person acts, thinks, sees the world as virtual world, i.e., it makes people difficult to distinguish between what is real and unreal, think clearly, manage emotions, relate to others, and function normally [1, 2].

A range of diverse symptoms characterizes this disorder which includes extreme oddities in perception, action, sense of self thinking and manner of relating themselves, thoughts and things with others. However, loss of contact with reality or psychosis marks the hallmark of schizophrenia [3]. Schizophrenia is not a single syndrome or disease entity, it is a complex collection of signs and symptoms that go together overtime [3]. Very likely Schizophrenia represents a complex group of psychiatric conditions which often appear to overlap with other psychiatric conditions and even normalcy. Schizophrenia has a 'fizzy boundaries' making it difficult study [1, 2].

Schizophrenia can occur in people from all walks of life to all cultures all across the globe [1, 2]. Usually frequency of schizophrenia is equal in both men and women, though the disorder seems to appear early in men, usually in late teens or early twenties and in women it is seen to appear usually in their twenties to early thirties.

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People with schizophrenia have an altered perception of reality, i.e., they have their own virtual world, often a significant loss in contact with reality. They might tend see or hear things that don't exist, speak in strange or confusing manner, often think that others are trying to harm them, or feel like they're being constantly watched. In such a blurred line between the real and the imaginary, schizophrenia makes it difficult—even frightening—to negotiate with the activities of daily life. It is noticed that people with schizophrenia withdraw from the outside world or act out in confusion and fear [5, 6, 7, 8].

A. Neurobiological Basis of Schizophrenia

Schizophrenia is a neurological [3, 4, 5, 6] or mental disorder that generally appears in people (both male & female) in late adolescence or early adulthood - however, it can emerge at any time in life. It is one of many brain or complex mental diseases that may include delusions, loss of personality, confusion, agitation, social withdrawal with bizarre behavior. In very rare cases, schizophrenia affects young children and adolescents, although the symptoms are slightly different. In general, the earlier the disorder develops, the more severity is seen in it. Schizophrenia also tends to be more severe in men than in women, though reverse is noticed too [1, 2, 3].

The current research indicates that biological and genetic risk factors (or predisposition) are fundamental to mental illnesses, but psychological factors are also believed to play a factor both in the incidence (whether a person develops a mental illness) and outcomes (how well they recover from a mental illness). The serotonin system and NMDA receptors (NMDARs) in located in brain are both critically involved in the regulation of cognition in schizophrenia; current research is on regarding the interactions between them [3, 4, 5, 6, 7, 8]. The serotonergic system in the brain plays a critical role in controlling cognition under normal and schizophrenic conditions. The increase level of serotonin, by activation (mutation) of 5-HT_{1A} receptors inhibits NMDA. The hyper activity of mutated 5-HT_{1A} receptors can be blocked by several inhibitors. There is a growing attention towards developing pharmacological agents that target 5-HT_{1A} receptors for the treatment of schizophrenia and other cognitive disorders like migraine [9].

B. Hallucinations and its cause

Hallucinations in schizophrenia is very common phenomenon which involves sensing or hearing things while

awake that appear to be real, but instead have been created by the mind. Hearing "voices" are the most important complain and the most common type of hallucination in schizophrenia. Biological research finds that a possible cause for these hallucinations are abnormalities in gray matter and general functioning that combines interpreting sounds, voices and visuals, as well as regulating emotions [10]. Abnormal activity by the dopamine receptor is the possible cause for positive symptoms of schizophrenic hallucinations. Research suggests that NMDA receptors regulate dopamine receptor. Thus, the abnormal functioning of NMDA receptors can be the causal factor for abnormal dopamine activity associated with the symptoms of schizophrenic hallucinations [11].

C. Psychological basis of schizophrenia:

Stress: Stress-vulnerability hypothesis ascertains that more stress events before onset or relapse is thought as probable triggers affecting the onset of schizophrenia. Family triggered increased Expressed Emotion (EE) can lead to early relapse.

Family Theories: Several theories in the past, such as schizophrenogenic mothers, lack of real parents, parental marital schism and skew, double-blind theory, communication deviance and pseudomutuality etc. are currently doubted by present psychologists and researchers.

Information-processing Hypothesis: Common findings by psychologists and researchers dealing with schizophrenics are:

(a) disturbance in attention,
(b) inability to maintain a set, and
(c) inability to assimilate and integrate precepts.

Psychoanaltic theories: Regression in the psychosexual development, with the use of defense mechanism in Schizophrenia was suggested by Sigmund Freud.

Sociocultural theories: Although schizophrenia is seen uniformly prevalent across all cultures and societies; it is found to be more in people with lower socioeconomic status. This has now been established that developed schizophrenia trends or shows a 'downward social drift' without actually causing it. Also, immigrants are reported having high rates of schizophrenia [12].

Psychosocial Approaches

It is important to use psychosocial approaches in conjunction with medications to treat schizophrenia and other neurological & psychotic disorders [13]. Psycho-education is important in regards to their nature and course of treatment and to establish a good therapeutic relationship with the patient and family [12]. Family therapy is very crucial with regard to schizophrenia. Family interventions were developed seeing the high rate of relapse linked with levels of Expressed Emotion (EE) in the family. To manage the coping with problem solving and enhancing family communication, family therapy is adopted by psychotherapists & counselors. Social skill training is very effective for improving interpersonal skills to function better on a day to day basis. Case management mainly includes Assertive community treatment programmes that helps patient to function in his/her community along with cognitive-behaviour therapy (CBT). They help in treating anxiety disorders including mood as in Schizophrenia. Rarely, the individual therapies like psychoanalytic and non-psycho-dynamic approaches are employed [13].

II. CASE STUDY

The following case is taken by the co-author of the paper, Ms. Sushma. N

Sociodemograpic data

Name: R [kept confidential]
Sex: Male
Address: Karnataka, India
Age: 24 years
Education: B.Sc.
Marital status: Single

Information gathered from:
a. From Self
b. From Mother : Client stays with mother from birth

Presenting Complaints:
Symptoms presenting from past 1 year:

From mother:

- Mr. R goes mute, doesn't speak much when spoken to
- Behaves very rudely and shows frustration
- Sleeplessness and decreased appetite
- He is very abusive to parents, especially to his brother
- Hears voice of his lecturer abusing and commenting him most of the time
- Talks to himself excessively
- Has repeated suicidal thoughts
- Attempted suicide 2 times in past 6 months

From Patient:

- Is not interested to go for work and contemplating on quitting the job
- Reports he hears voice of teacher abusing him all the time and says because of teacher his life ruined
- Sees corpse in the railway track nearby home now and then
- Gets repeated suicidal thoughts, considers himself a waste and wishes he were dead
- Hates his parents and especially younger brother for stopping him from dying and coming on his way of resting in peace (death)

History of Presenting Illness (HOPI)

Mr. R's symptom began when he was around 23 years of age while pursuing B.Sc. During B.Sc. Mr. R was caught by his lecturer for consuming substance (Ganja) and was threatened and abused by his lecturer. He joined for job after completion of B.Sc. He started to feel irritated and at one point had severe fight with his colleague over a personal issue.

Then onwards he started showing disinterest in work, took leave for several days, stopped talking, spoke rudely when he was forced to speak, and withdrew from every one. His sleep and appetite reduced dramatically. He began reporting that he hears voice of his former lecturer abusing him badly for being so worthless and careless. He stated that his lecturer yelled in his ears that he is not fit to live on this earth and this kept running in his ears continuously. He started talking to himself excessively. Mr. R became abusive of his parents specially his younger brother for questioning his behavior. He gets repeated thoughts of suicide and attempted suicide in past 6 months. In all 2 attempts he was rescued by his brother and this further increased Mr. R's vengeance over his brother for not allowing him to rest peacefully (end life), as reported by patient.

Past History

R had no birth complications. His childhood was uneventful. He had good peer relationship and play activities in childhood. He started consuming substance (Ganja) in high school. He didn't have many friends in his adolescence and was considered an introvert. He stopped substance consumption after 3 months following counseling. He was a below average performer throughout his academics and had history of failing several times in his academic record. He made it to his graduation trudging a difficult path academically. After joining B.Sc. his social circle became still too small, he barely had friends. His relationship with his parents and sibling was also enmeshed owing to his sudden onset of irritating, rude behavior. During his final year of graduation he befriended classmates who were into drug consumption. He was caught red hand by one of his lecturers and was beaten up, threatened and abused by him. His lecturer kept an eye on him afterwards and insulted him in front of whole class several times. Owing to this Mr. R didn't attend college for a month and feared irrationally that his lecturer is plotting to kill him. After a lot of persuasion, he somehow managed to get into college again and graduated. He joined for a job in an IT company and Symptoms started to surface after sometime.

Family History

Ms. R is a 24 year old male hailing from a middle socioeconomic background. He makes first child to his parents. His father (56 years) is employed and mother (48 years) is a home maker. R has 2 younger brothers studying

- His family is nuclear family type
- His parents marriage is not consanguineous

No history of psychological problems or other disorders in the family

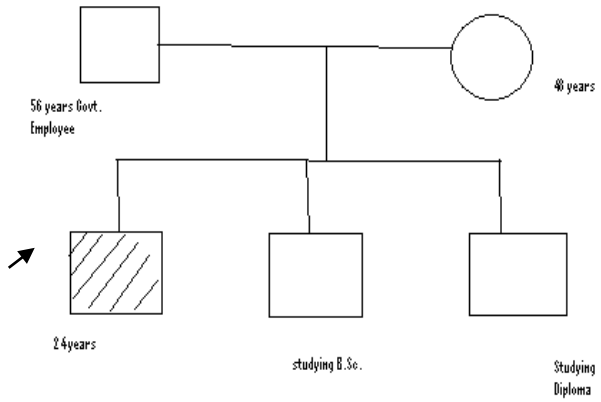

Fig. 1: Genogram or Family tree of the client

Personal History

Birth history- Full term/ uneventful birth
Developmental milestone-
Motor
Adaptive Normal
Speech
Social
Any Childhood disorders- No
Academic performance- Below Average
Social Relationship - Limited social circle and acquaintances
Pre morbid personality- normal
History of any physical illness- Nil

Mental Status Examination

General Appearance & behavior- Looks one's age, adequate cleanliness, and normal level of functioning
Mood- Congruent, appropriate, blunted emotional expression
Talk- Normal initiation, reaction time, speed and output
Obsessive/compulsive phenomena-
Obsession- Repeated suicidal thoughts
Perception-
Hallucination- Present
Type- Auditory and visual hallucination
Content- Hearing voice of his lecturer abusing him (auditory)
Seeing corpse on the railway track nearby home (visual)

Orientation- Place
Person Intact
Time
Memory-
Immediate
Recent Intact
Remote
Insight- No
Judgment- Impaired

III. Conclusion Of The Case

- Insight- No
- Judgement- Impaired
- Auditory and Visual hallucination noted
- Negative symptoms noted

Looking at the course, duration of illness, his history and present complains & history of present complains it is concluded that the client is suffering from Schizophrenia, paranoid type.

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