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Review Article

Capgras Syndrome with Non-Violent Behaviour Presenting in Postpartum Period: Case Study with Literature Review

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Abstract

Background: Capgras syndrome (CS) is one of the delusional misidentification syndromes (DMS) characterized by the belief by the patient that the close person, usually a close relative or family member is replaced by an imposter who looks physically the same. Since the first case of Capgras syndrome was described in 1923, the published literature is confined to a small number of case reports and a single case series. Capgras syndrome rarely occurs in postpartum period; there are few references in the literature to any of the delusions of misidentification occurring in a post partum period. Moreover, some authors described Capgras syndrome as frequently involving hostility, violence and risk of neglect towards an object of delusional misidentification. Their reports based on single cases report or small case series that may be subject to significant reporting bias. This case outlined here on a female patient affected by Capgras syndrome in post partum period with brief review of the literature. Case presentation: A 32-year-old woman presented to the psychiatric clinic for a delusional belief that newborn had been replaced by another one. Capgras delusion was developed after caesarean section on her 12th postpartum day. The patient was healthy individual whose Capgras syndrome was not linked to any psychiatric or neurological states in the past. Anxiety and depressive symptoms followed progressively without postpartum psychosis. Though she has a fixed belief, which is that her baby was replaced by another one, she did not show any psychotic features or aggression behaviour. Conclusion: In this case report, Capgras syndrome is typically a monothematic delusion (delusion about the baby may have an altered identity or replaced by another one) and is not accompanied by other delusions. Also, it displays the course of anxiety and depression in the period of postpartum period that accompanied with Capgras syndrome. The patient has no postpartum psychosis, only a delusion about the baby replaced by another one. Though her ambivalent emotions toward the baby, the patient did not show any hostility, aggression behaviour or violence and denied thoughts of harming baby.

Keywords

Capgras Syndrome, Capgras Delusion, Delusional Misidentification Syndrome, Postpartum Depression

1. Introduction

Capgras syndrome is a rare condition of delusional misidentification syndromes (DMS), in which the patient misidentifies a familiar member (loved one), object, and regards him instead as double or impostor. Capgras syndrome was described in 1923 by Capgras and Reboul-Lachaux. Capgras reported a woman with the delusional belief that some family

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members had been replaced by identical doubles. He called it l'illusion des sosies (illusion of doubles) [1] or "the illusion of look-alikes." [2] or "the illusion of Doppelgänger" [3].

Initially, it was thought that DMS arose due to a combination of psychotic illness and psychological factors [4]. Some researchers have previously argued that Capgras may be fundamentally an "organic" syndrome [5]. Several authors have argued that all individuals with Capgras should be investigated for organic pathology [5, 6]. However, it is now recognized that there may be a structural basis for DMS involving disruption in the right hemisphere brain regions responsible for facial processing and recognition [7].

Capgras delusion occurs in clear consciousness [2, 8, 9] and is associated with various neurological and psychiatric conditions [8, 9]. Capgras syndrome reported to be associated only with psychiatric diseases, including paranoid schizophrenia [10, 5] and schizoaffective disorder [11, 12]. However, more recently Capgras syndrome has also been described in neurological conditions including cerebrovascular disease [13-15] after head trauma [16] pituitary tumor [17] and especially in neurodegenerative diseases such as Alzheimer disease [18-21] and Lewy body disease [22, 23], as well as posterior to brain injuries [16]. A variety of medical cases have been reported with Capgras syndrome, as vitamin B12 deficiency, hepatic encephalopathy, hypothyroidism, hyperparathyroidism, epilepsy, chronic alcoholism cases and encephalitis [8, 24-27]. According to Enoch and Trethowan 1991 [28] Capgras syndrome is the most frequently occurring of the delusional misidentification syndromes but is still extremely rare. Few references in the literature reported delusions of misidentification occurring in a puerperal illness [29-36].

Concerning Capgras syndrome in postpartum period, there is a sporadic cases reported since the last century. The published literature on is confined to a small number of case reports [30-36] and a single case series [29]. Recently, two systemic reviews conducted in 2019 and 2023 respectively [37, 38], revealed that Capgras syndrome is not common in the in perinatal period. Published case studies of Capgras has been described as "frequently" involving violence towards the perceived impostor and has been recommended as a risk marker in psychiatric assessments [39-43], although until now, conclusions have been based on published case studies that may be subject to significant reporting bias [44].

In regard to caesarean section, three of the reports that Capgras syndrome occurring in the postpartum period [14, 30, 31] specified the mode of delivery and all of these were by caesarean section [38]. This case outlined here of Capgras' syndrome that occurred in the postpartum period, post caesarean section in absence of mental or neurological disorders; to my knowledge, the presented case may be the forth case of Capgras syndrome post caesarean section and the third case of Capgras' syndrome occurring in the puerperium in which the baby was the sole misidentified person in this period.

The case outlined here, the patient underwent to caesarean section and developed Capgras syndrome 12 days in the perinatal period. This case report aims to review previous literature of Capgras syndrome in which the newborn was misidentified in this postpartum period.

2. Case Presentation

A 32 year old, post Cesarean section six months ago was brought for psychiatric evaluation by her family with chief complaints of belief that her baby had been replaced by identical impostor, associated with anxiety, hypervilgilance, irritability, low mood with crying and insomnia. This was her third pregnancy and she had previously been entirely well medically and psychiatrically.

She was doing well until her 12thcesarean section day, the patient back for follow up and to remove threads. She put her baby on the bed; her husband and her elder son were beside the baby in presence the nurse and the physician. Less than one minute, she looked at the baby on bed, she rapidly became agitated, shouting, screaming and suddenly said that he is not my baby, where is my baby? She examined her baby's face which made her realize that baby was not really her baby.

She said to the nurse you have replaced my baby. It was a shock to the doctor, nurse, and her husband. From then on, an idea came to her mind that her infant has been replaced. In spite of the pleas and reassurance by her physician, nurse and husband; the patient did not believe that he was really her infant. Three days later, the patient returned to the nurse and asked her to bring her real baby back. Four days later she argued with nurse and claimed that nurse replaced her infant. Her husband tried to convince her that baby is hers, but she did not convince. Two weeks later post caesarian section, she gradually deteriorated, again claiming that baby were not real, also expressing severe anxiety and hypervilgilance; screaming "this is not my baby, give me my real baby; she became increasingly upset, neither slept nor ate; anxiety persisted six weeks followed by depression. She was not convinced to visit a psychiatrist; the husband took her to traditional healer who prescribed natural herbs to her, while the cleric recited prayers to her and rubbed her head. After that the patient had consulted several physicians, and she was diagnosed with obsession and was treated with bromezepam and quetiapine without any significant improvement. Two months later (post cesarean section), the patient remained highly distressed throughout day and night, and she exhibited progressive worsening. The husband advised that his wife should travel back to Yemen to be close to the family. In the third month (post cesarean section), the patient's husband observed her condition get worse; he contacted the patient's family to take her home for some positive change. During the stay of the patient at her family's home, her condition remained the same. Through this period, she developed depression. She displayed low mood, displeasure, crying, sleeping very little at nights, and she became withdrawn, disinterested with a significant decline in her work and social activity. Under family pressure, she came for psychiatric evaluation.

Though, the reassurance by husband, parents and other close relative family members, the patient did not believe that he was really her infant. Through the depression period, she's being unwilling to care for the infant; she refuses to breastfeed him; not capable in caring the baby and neglected him; no maternal affection towards him no pay attention to him, or change diapers, and care was taken over by family members. Despite every attempt to convince her that it is her baby, she confirmed that he is not her baby and it replaced by another one. She developed ambivalent emotions toward the baby; about an idea that baby being her baby or not.

The patient was questioned how was it possible; she was unable to explain when and how this occurred. Mental faculties were examined, and found them to be healthy, except for one thing that she suffers from a disorder in the content of thinking; a fixed belief, which is that her baby was replaced by another one. Further, the patient in the presented case had the delusion that her baby replaced by another, she did not show any paranoid ideas, no hallucinations or hostility or aggression behaviour and denied thoughts of harming baby.

At the time of her psychiatric interview, she was found to be a well built woman, well dress and groomed. Cognition was normal integration of consciousness; alert, aware oriented to time, place, and person. Despite she is depressed; she maintained eye contact. Her mood was 'depressed and anxious' with congruent and tearful affect. Attention, concentration and orientation were intact. She is cooperative, attentive, and interested. She reported no past psychiatry illness. She denied any suicidality or homicidality. No postpartum depression or psychosis in her previous pregnancies. No history of abortion. No seizure or episodes of loss of consciousness; no episodes of confusion or disorientation; no experiences of unreality, detachment, or being an outside observer. No major medical, surgical illnesses or major traumas. Neither alcohol nor drug used history. Personal, family, social history and current circumstances are normal. Speech was spontaneous. She denied having any paranoid, persecutory delusion or hallucinations. Her thought process was concrete, although her thought content contained a delusion about the baby may have an altered identity or replaced by another one. The patient's family reports to me that she did not have any psychiatric or neurological disorders prior to the onset of her delusion believe. The detailed general physical, neurological and other systemic examinations were within the normal limits. Serum electrolytes, endocrinal workup, magnetic resonance imaging (MRI) of the brain were within the normal limits. After detailed neurocognitive assessment, organic basis for the present symptoms was ruled out. The patient was subsequently diagnosed Capgras syndrome post cesarean section in postpartum period with anxiety and depression.

3. Discussion

Although Capgras syndrome was described over a century ago, research has been limited. Capgras syndrome is particularly interesting not only because of their rarity but also because it represents a syndrome between psychiatry and neurology. Capgras syndrome reported in sporadic cases of psychiatric, neurological, and medical disorders. Clinical experiences would suggest that Enoch and Trethowan [28] were correct to consider it rare.

Relating to postpartum period a few cases in the literature reported Capgras syndrome in a puerperal illness. In their intensive literature review of 255 published cases of Capgras syndrome conducted in 2019, Pandis et al. [37] counted puerperal psychosis which consisted of a total of 11 cases, including 8 that had no diagnosis specified in the original report and 3 cases identified in the review were patients with puerperal psychosis. A more recent review conducted in 2023 by Lewis et al. 2023 [38], through searching of references identified eight of the included papers were single case reports describing Capgras syndrome in the perinatal period and the ninth was a case series [29] of 4 cases of Fregoli syndrome, which met the criteria, giving 9 papers in total [38].

Generally, these published literature on Capgras syndrome in perinatal period are confined to a small number of case reports [14, 30-36]. Some authors now believe that Capgras syndrome and other DMS have an organic basis, to the point where they have argued that all individuals with Capgras should be investigated for organic pathology [5, 6, 14, 35, 36] have reported cases of Capgras' syndrome that occurring in the puerperium, both with associated organic findings. Nilsson and Perris's [35] case had enlarged ventricles and temporal lobe atrophy, while the patient reported by Foerstl" had suffered a subarachnoid haemorrhage with consequent neurological deficit. Collins et al. [14] case had pre-eclampsia and severe postnatal hypertension and nephrotic syndrome. On other hand, there have been case reports of Capgras syndrome [30-34] with no obvious organic basis occurring in the puerperium. Concerning mental illness, in the 12 cases of Capgras syndrome identified in Lewis et al. 2023 review [34], they found six of the twelve cases had no history of mental illness, three cases had history postpartum psychosis, tow cases reported history of depression and one case of postnatal depression. The spectrum of psychiatric symptoms in the literature identified is varied widely; indicate the various aetiological origin of Capgras syndrome. Therefore, Capgras syndrome is not necessarily psychiatric or organic illness, and may occur in a healthy individual as in the case outlined here.

Neuroimaging studies have shown that lesions in the right hemisphere of the brain especially of the frontotemporal regions are common among Capgras syndrome sufferers [1, 36, 47, 48]. While pathology can be widespread, lesions have been found mainly in the frontal, temporal, and or parietal lobes [23]. Other studies using CT found global brain atrophy in combination with right hemisphere lesions in patients with dementia and Capgras syndrome [21]. A more recent study identified a further 34 patients with Capgras' delusion from the electronic records of a London Mental Health Trust [44] found only 5 of these had neuroimaging reported, no evidence

of right-hemisphere damage being predominant in cases of Capgras delusion presenting to mental health services. The presented case has no past history of neurological or psychiatric disorder and her magnetic resonance imaging (MRI) of the brain was normal.

With regard to misidentification, in some cases [30, 33-36], there were multiple subjects of misidentification (Husband, baby, older son, father, sister, doctor), while in the other cases [14, 31, 32] only a single subject (husband or baby) was misidentified. The case outlined here, the baby was the only misidentified one.

Regarding to maternal-infant bond in the postpartum period; DMS are often accompanied by hostility towards the child [45]; mother's being unwilling to care for the infant, withdrawn, disinterested, and risk of neglect, violence, or infanticide towards a misidentified child [46]. Certainly, the maternal-infant bond under risk and emotional relationship between the patient (mother) and the misidentification (baby) will disturb. It is worth noting, the accompanying delusions in post partum period with Capgras syndrome that represent in the majority of cases such as postpartum psychosis, paranoid symptoms, presence of auditory hallucinations or other such as affective disorders, schizophreniform illness, and organic psychosis; all of these represent the majority of the risk factors that affect maternal-infant bond.

It has been described that DMS is often accompanied by hostility towards the object of delusional misidentification [45]. However, reports existing on single cases or small case series of violent acts in patients with Capgras syndrome including homicide, toward family members. Bourget & Whitehurst, [39] as long with the previous literature [40-43, 45] claim that Capgras syndrome is specific risk factor for violence, and even murder. For example, Bourget and Whitehurst [39] reported "*We summarize 4 cases involving CS and severely violent acts; these add to a growing number of reports indicating that individuals with CS can pose significant danger to others [41, 48-51]. The individuals in our case series were men who committed severe acts of violence, including homicide, toward family members. Following the violent act, each man was diagnosed with some form of psychosis, including schizophrenia, paranoid subtype. All 4 held delusions of misidentification and directed the violent act(s) toward the misidentified person(s). For each individual, there was evidence of persistent and long-standing delusional ideas of persecution and (or) paranoid ideation. The presence of auditory hallucinations of a commanding nature was noted in 2 of the men. On examination of their mental status, 3 individuals demonstrated a blunted affect. Two of the men displayed sexual preoccupations, with one questioning his sexual orientation and both holding beliefs of past sexual abuse. While all the men had a history of substance abuse, only one had a previous psychiatric disorder*".

Surprising that literature refer to the risk factors mentioned above, but attribute violent act, aggression and even homicide are frequently associated with Capgras' delusion. The violent act in published report of four cases of misidentification delusions with Capgras syndrome, it is hard to attribute solely to the Capgras delusion, other risk factors [*persistent and long-standing delusional ideas of persecution and (or) paranoid ideation, auditory hallucinations of a commanding nature, sexual abuse, substance abuse*] are likely to influence the possibility of violent act. This raises puzzling philosophical question [37]. Why do the non-violent Capgras sufferers, who constitute the majority, seem to live peaceably with their imposter? The answer is very simple; those non-violent Capgras sufferers are not under the risk factors. Capgras syndrome is not present with additional suspiciousness or paranoid ideation directed toward the misidentified person; i.e. the patients have no long-standing delusions, no history of aggressive behavior no diagnosis of schizophrenia, transient psychotic episode, schizophreniform psychoses or bipolar affective disorder as mania. Also, no persecutory delusions, psychotic depression, or others as persistence delusional disorder, antisocial personality, alcohol and substance abuse; if these factors present, they will play a significant role in increasing the probability of violent act and aggression [52, 53]. So, non-violent Capgras sufferers have no violent act or anger toward the misidentified person and live peaceably with their imposter.

Based on series of cases [54] of individuals with Capgras syndrome who have committed dangerous behaviors (8 cases in Silva et al 1989 [54] diagnosed paranoid schizophrenia, schizoaffective disorder, bipolar disorder, atypical psychosis). For example, the authors in their case 1, patient "*Mr. A believed that his real relatives had died and that they were clones whose bodies had been taken over by spirits. Mr. A believed the government was controlled by duplicates of former President Jimmy Carter, former first lady Rosalyn Carter, the United States senators, and President Ronald Reagan. He also heard voices informing him that the spirit that controlled his father's body had killed his brother and substituted a clone in his brother's place. Mr. A believed he had been assigned the task of God's work by destroying the wicked people who had moved into the bodies of his family and others. For this reason, Mr. A shot and killed his father and shot and seriously wounded a nephew. He saw a young man across the street and shot as punishment for assisting in the murder and impersonation of his brother*". [Case 1 in Silva et al. 1989].

The patient in Silva et al [54] had at least 10 prior psychiatric hospitalizations; the patient was given a diagnosis of schizophrenia (paranoid type, chronic). It is not sense to attribute that violent act and murder to Capgras delusion. In their case, regardless of Capgras delusion about the identities of his relatives; the patient heard voices and assigned the task of God's work, and for this reason he killed his father and shot and seriously wounded a nephew. The patient has Capgras delusion about the identities of his relatives; he had bizarre delusions, auditory hallucinations, psychosocial impairment, and chronic course of his symptoms; the patient had another

delusion towards a strange man and thought he was an accomplice of the evil impersonators and he shot and wounded this young stranger. It is worth noting, this strange man is not one of his family members or friends. This does not meet the definition of Capgras syndrome that frequently contain the belief that an individual's family or friends have been replaces by another one. Simply, Capgras syndrome has been accompanied with paranoid delusion and hallucination, both acts as a risk factors [the patient heard voices and assigned the task of God's work], and these factors should to be taken into consideration an adequate risk of violent; it is a paranoid schizophrenia that plays a significant role in increasing the probability of violent act and aggression, not Capgras syndrome.

In their intensive literature review of 255 published cases of Capgras syndrome, Pandis et al [37] found 21% of case reports were graded as high quality so important clinical information including results of investigations was missing in 79% of the cases analysed, which introduces a bias that limits the interpretability of the findings. This raises the question to what extent Capgras syndrome has been over-associated with violence aggression or homicide in the existing literature. Capgras patients as then their theories need to account for the delusion as it is actually encountered, lest they be accused of jumping to conclusions and other reasoning errors [37].

In summary, it is hard to make a conclusion on single cases report or small case series that reported aggression, violence or homicide. These claims are particularly notable given they are largely based on a literature formed mainly of single cases or small case series that may be subject to significant reporting bias [44]. Therefore, findings in literature must be interpreted with great caution.

Interestingly, in contrast to previous reports that have associated Capgras delusion with dangerousness [40, 41, 47, 54, 55]; a recent study of 34 cases of Capgras syndrome conducted in 2019 by Emily et al. [44] found no cases had reported physical aggression or violence. In this case report, the patient did not show any hostility, aggression behaviour or violence and she denied thoughts of harming baby.

On the topic of the present case, she was doing well until her 12thcesarean section day when she developed Capgras delusion. Capgras delusion followed by intense anxiety persisted six weeks followed by depression. Through this period the patient expressed that the baby would be replaced, she started screaming and argument with her family claiming that baby was instead an imposter of her baby. Generally, during the postpartum period, the most common psychiatric illness is postpartum depression, followed by postpartum psychosis and postpartum blues [56]. As postpartum psychosis is characterized by varied symptoms especially delusions and hallucination and affective symptoms; this case outlined here, never show any symptoms of postpartum psychosis. In other words, she had no psychotic symptoms such as delusion or hallucination, but she deluded about the baby may have replaced by another one. The patient did not show any hostility, aggression behaviour or violence and denied thoughts of harming baby. In the third month, the patient to was brought for psychiatric evaluation by her family (post cesarean section), she became increasingly upset, neither slept nor ate, sadness of mood, ideas of hopelessness and worthlessness; this associated with psychomotor agitation; she developed depression but she never complains any features of postpartum psychosis.

Previously she was on quetiapine and bromezepam but no significant improvement. She treated for depression and anxiety with an antidepressant trazidone 50 mg per day and lorazepam 1mg in association with antipsychotic aripiprazol 10 mg per day for Capgras delusion. Two weeks later, as assessed in the clinical setting and by direct interview, an improvement was observed in her depression and anxiety and minimal improvement in her Capgras delusion. Because of the noticeable improvement of the clinical picture, aripiprazol increased to 15 mg per day in association with trazidone 50 mg per day. After two months of combined treatment trazidone and aripiprazol, significant improvements was observed and full remission of the clinically relevant depression and anxiety symptoms and disappear in her Capgras delusion. Interesting in this case, the patient's family noticed during this period that there was a tangible change in her feelings and behavior. She began to care about the newborn and breastfeed him. She hugged and smiled in his face. This behavior negates the allegations mentioned in the literature that Capgras delusion increases a risk factor of aggression, violence or damage mother-infant bond relation.

4. Conclusion

This case report displays the course of anxiety and depression in the period of postpartum period without postpartum psychosis. The presented case of Capgras syndrome was not accompanied by other delusions, i.e. Capgras syndrome is typically a monothematic delusion (delusion about the baby may have an altered identity or replaced by another one). Though her ambivalent emotions toward the baby, the patient did not show any hostility, aggression behaviour or violence and denied thoughts of harming baby. Authors claim that Capgras delusion may be a specific risk factor for violence, and even murder, of the misidentified person; it is hard to make a conclusion on single cases report or small case series that reported aggression, violence or homicide may be subject to significant reporting bias. Other factors are likely to influence the possibility of aggression or violent action.

Abbreviations

CS	Capgras Syndrome
DMS	Delusional Misidentification Syndromes

Author Contributions

Nabil Ahmed Numan is the sole author. The author read and approved the final manuscript.

Conflicts of Interest

The author declares no conflicts of interest.

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