

Research Paper

Delusional Ideas of Pregnancy, Hyperprolactinemia and/or Culture?

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ABSTRACT

Delusional ideas of pregnancy are defined by one's conviction of being pregnant despite factual evidence of the contrary as shown by negative paraclinical test results. Different etiologies of this symptom have been documented and hyperprolactinemia is amongst them. We report the case of a Tunisian 39-year-old, bipolar type I woman, with a personal history of primary infertility and hyperprolactinemia associated with a hypophyseal adenoma that subsided with Carbagoline. Shortly after the discontinuation of this specific treatment, she was admitted in our psychiatric department following an episode of agitation, insomnia and irrelevant talk. Psychiatric evaluation revealed a severe manic syndrome associated with delusional ideas of being pregnant with cats. Her laboratory results confirmed the absence of pregnancy and found elevated serum levels of Prolactin. The patient was treated with Aripiprazole. Her serum levels of prolactin returned within normal range. Significant improvement of her manic symptoms and delusional ideas was noted. Hyperprolactinemia should be taken into consideration when confronted with a delusional pregnancy. In Tunisia, cats are often associated with pregnancy and maternity. Symbols and cultural aspects related to pregnancy differ from one region of the world to another and may impact the content of these delusional ideas.

Keywords: *Delusion of pregnancy- hyperprolactinemia- culture – mood disorder*

Delusional ideas of pregnancy are defined by one's conviction of being pregnant despite factual evidence of the contrary as shown by negative paraclinical test results such as a beta

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HCG count. Numerous biological and psychodynamic factors have been implicated in the development of this symptom.

Could Hyperprolactinemia (HPL) constitute an aetiological factor to be considered when confronted with delusional pregnancy?

Through a case report, we aimed to study the potential role of HPL in the development of delusional ideas of pregnancy.

Case report

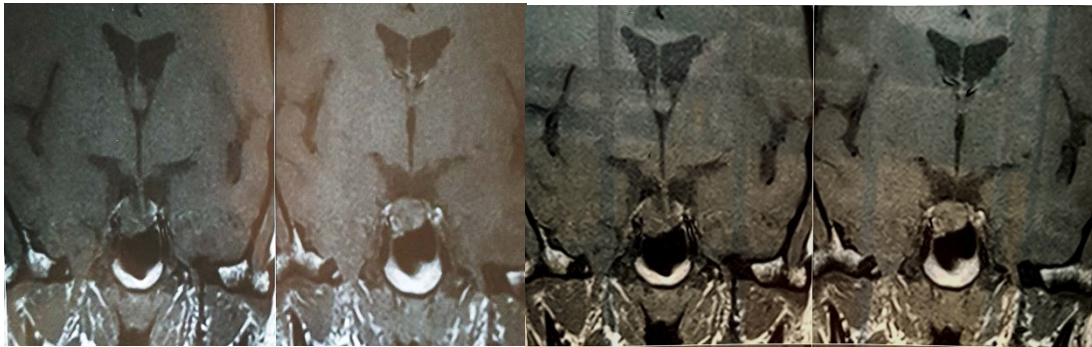
Mrs FK is a 39-year-old woman native of the Cap-Bon region in Tunisia. She was forth from a family of six children. She was a teacher, had been married for ten years and was childless. Mrs FK had been diagnosed with bipolar disorder type I since the age of 18 and had been treated with Haloperidol during mood relapses and with Carbamazepine. At the age of 35, she consulted a gynecologist and an endocrinologist for symptoms of hirsutism, amenorrhea and primary infertility.

Laboratory data showed elevated serum levels of Prolactin up to 570 ng/ml. Cerebral MRI showed a 11*4 mm hypophyseal adenoma (Figure 1). Endocrine symptoms subsided after treatment with Cabergoline (1mg per week). Four years later, Mrs MK was involuntarily admitted to our psychiatric ward for increased energy, irrelevant talk and insomnia. Psychiatric examination found psychomotor restlessness, olfactive hallucinations, persecutory delusions and delusional ideas of pregnancy: The patient was accusing strangers of opening up her uterus and putting cats inside of it.

The family admitted to having stopped Carbagoline treatment for four months. Prolactin serum levels were elevated up to 545 mg/ml. EEG was normal.

Treatment with 10mg per day then 20mg per day of Aripiprazole, 3,75 mg per day of Lorazépam and 600 mg per day of Carbamazepine was prescribed. The evolution was favorable within three weeks and the patient was discharged afterwards. We diagnosed a manic episode with psychotic features in the course of bipolar disorder type I.

Two months after her hospitalization, Mrs FK is still in symptomatic remission and regularly seen in the after-care program. The last count of prolactin serum levels was 386 ng per ml and the cMRI showed an hypophyseal adenoma of 10*3,5 mm (Figure 2). The question that remains pending is whether the HPL is an aetiological factor of the delusional ideas of pregnancy or a simple comorbidity to Bipolar Disorder.



*Figure 1: pituitary adenoma measuring 11*4 mm (2013) Figure 2: pituitary adenoma measuring 10*3, 5 mm (2017)*

DISCUSSION

1/ Clinical aspects of delusional pregnancy

Delusion of pregnancy is a symptom that can present as part of several psychiatric disorders, mainly psychotic and mood disorders, but can also present independently. According to the DSM-5, when present in isolation, the symptom is described as somatic type of delusional disorder within the schizophrenia and other psychotic disorders spectrum. The most frequently associated psychiatric disorders with delusional pregnancy are schizophrenia, bipolar disorder, major depressive disorders and schizoaffective disorders. Moreover, delusional pregnancy has been observed in several organic illnesses such as epilepsy, dementia, hypothyroidism, achalasia, sarcoidosis and pulmonary fibrosis.

When associated with hyperprolactinemia, delusional pregnancy may display heterogeneous clinical presentations with a duration that varies from a few days to several years.

Various themes have been documented, the most common one being an internal zoopathy as shown in the case of our patient who accused strangers of putting cats inside of her uterus. In fact, the animal symbolizes the fetus and the spermatozoid and the belly is the specific area for the animal implantation.

In a systematic review of literature, Bera and al reported that delusional pregnancy was reported at all ages but with a peak of incidence between 21 and 40 years of age. Even though women are most commonly affected by this symptom, cases of delusional pregnancy have been documented in males.

2/ Cultural and psychopathological aspects of delusional pregnancy

Several aetiological factors have been implicated in the causation of delusional pregnancy. Sociocultural influences have been implicated in the development of this phenomenological symptom due in part to a more valued state offered to women during pregnancy and maternity. Such traditions are found in Tunisian culture “the best moments for wives are pregnancies”.

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Two cases of delusional pregnancy in the post-partum period have been reported by Simon and al and seemed to be motivated by the wish to continue benefiting from pregnant women's preferential treatment.

In Tunisian culture, cats are often associated with pregnancy and post-partum. The psychiatric symptoms that occur during those specific periods of a woman's life are called "kattous nfess", "Kattous" meaning cat and "Nfess" referring to the post-partum period.

It's culturally admitted that the parturient shouldn't chase cats away from her house for fear of evil spirits disguised in the shape of cats. Moreover, the mother is compared to a cat caring for her kittens, but who can, in some situations, devour her babies. In literary Arabic, "Nfess" may refer to a state of psychosis.

Amongst aetiological factors of delusional pregnancy HPL has been reported. It's responsible for galactorrhea, amenorrhea and breast swelling that resemble clinical symptoms of pregnancy. Hence, these somatic changes and sensations may explain delusional ideas of pregnancy during a psychiatric disorder.

In this case report, HPL was responsible for a secondary amenorrhea which was wrongly interpreted as a sign of pregnancy by a patient who was childless but came from a large family that valued childbearing and maternity.

3/ Organic aetiologies of delusional pregnancy

A recent review of literature determined that HPL was found in 16,7% of cases of delusional pregnancy and was symptomatic in the majority of them. Antipsychotics are the most incriminated in the rise of prolactin serum levels. In our case report, HPL was caused by a hypophyseal adenoma and was probably aggravated by the haloperidol received in previous years.

The strongest prevalence of HPL are observed with risperidone, Amisulpride and paliperidone even at low doses, followed by first generation antipsychotics.

A 2013 meta-analysis showed that amongst antipsychotics, Aripiprazole was the least associated with the elevation of prolactin serum levels and was recommended in a recent synthesis of world-wide guidelines for antipsychotic-induced hyperprolactinemia.

4/ Psychosomatic approaches to delusional pregnancy

Complex interactions seem to exist between HPL, personal psychiatric history and delusional pregnancy.

The abductive inference theory helps understand this interaction through Bayes' theory. It consists of a probabilistic model of Bayesian type which aims to explain the occurrence and

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persistence of delusional ideas originating from an abnormal data that suffered a dysfunctional cognitive process.

The theory is based on two factors:

1. The first one is an abnormal information wrongly explained by the subject. Patients develop delusional ideas in order to make sense of unusual body changes or sensations. Wrong perceptions are necessary but not sufficient. In fact, all those presenting an unusual body perception don't necessarily develop delusional ideas.
2. The second factor necessary for developing and maintaining delusional ideas is a dysfunctional cognitive process applied to the abnormal data. This process called abductive inference selects a delusional hypothesis in order to explain the abnormal information which leads to false beliefs.

Both factors have to be coupled in order to lead to the delusional idea. In fact, not all cases of HPL are associated with delusional pregnancy and vice versa. Levy and al, by applying Bayes's theory showed the impact of HPL outside of a pregnancy context in the development of delusional pregnancy.

In conclusion, pregnancy can be seen as a struggle against death through the act of giving life. If delusions constitute defense mechanisms against destruction, delusional pregnancy can thus represent a double struggle against death.

DECLARATIONS

1. **Ethics approval and consent to participate :** Informed consent was obtained from the patient prior to publication. She consents to the use of her information for the purposes of publication of this case report.
2. **Consent for publication:** consent to publish was obtained from the patient.
3. **Conflict of Interest Statement:** The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.
4. **Availability of data and materials :** all data generated and/or analysed during the current study are included in this published article [and its supplementary information files]
5. **Funding :** not applicable
6. **Author's contributions:** SB is the corresponding author. She took care of the patient in the hospital and wrote the manuscript _ HB took care of the patient and participated in the redaction of the manuscript_ AT and MD participated in the drafting of the English version of the manuscript _ AA and EK took care of the patient_ ZE is the head of department . All authors read and approved the final manuscript.
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