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Two Women with History of Bipolar Disorder

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A woman presented with cannabis abuse, marital discord, and family history of unipolar and bipolar mood disorders. She developed her first manic episode with persecutory delusions at 20 years, a few days after the birth of her first child. She was hospitalized and was successfully treated with olanzapine. She subsequently functioned well but eventually developed a major depressive episode, which was treated with increased dose of olanzapine and the addition of bupropion; the latter was discontinued because of side effects but she was continued on olanzapine. She developed a second manic episode at 30 years, 1 week after an induced abortion during the 8th week of pregnancy. As in the first episode, she presented with high energy level, racing thoughts, mood lability, poor sleep, and persecutory delusions. Lithium carbonate 900 mg daily, with a serum level of 0.81 mEq/L, was added to olanzapine 20 mg daily, and she remitted.

A 30-year-old woman with a diagnosis of bipolar disorder since adolescence had a history of cocaine abuse and multiple psychiatric hospitalizations for depressive and manic episodes. She also had a history of two induced abortions for unplanned pregnancy that were each followed by a depressive episode. The patient had another unplanned pregnancy and decided to carry to term. Her psychotropic medications, lithium, and risperidone were tapered off, and she continued to function relatively well until she had a spontaneous abortion at the 6th week of pregnancy. One week later, she developed elevated mood, rapid and pressured speech, racing thoughts, flight of ideas, and decreased need for sleep, thereby requiring psychiatric hospitalization. No psychotic symptoms were elicited. She achieved remission with lithium carbonate 1,500 mg/day, with a serum level of 0.93 mEq/L, and risperidone 6 mg/day.

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DISCUSSION

The reproductive cycle may influence the clinical features and course of illness of bipolar disorder in women.¹ The puerperal period (ie, the 4 to 6 weeks after delivery) is associated with a high risk of onset of bipolar disorder and recurrence of bipolar episodes.² In a cohort study of 36 women with bipolar disorder, 36% reported onset of the illness in the puerperium, and puerperal recurrence was found in 40% of these women.²

Postabortion mania seems to be uncommon, and it has received little attention in the literature. Mahe et al³ reported a case of postabortion mania and speculated on an estrogen-withdrawal mechanism. Similarly, it is rare for psychotic symptoms to follow abortion. Brewer⁴ described one case of mania with psychotic symptoms in a prospective study of 3,550 cases of therapeutic abortion. This case demonstrated that psychotic symptoms may occur after termination of pregnancy. Brockington⁵ described postabortion recurrence of manic and psychotic symptoms in nine women who had experienced similar manifestations during the puerperal period of other pregnancies.

Here, we report two cases of postabortion mania in patients who met the *Diagnostic and Statistical Manual of Mental Disorders*, fourth edition (DSM-IV), criteria for bipolar I disorder. The first patient had previously experienced postpartum mania and presented with manic symptoms after an induced abortion. The second patient had a history of major depressive episodes after two induced abortions and presented with manic symptoms following a spontaneous abortion.

The nature of puerperal onset and recurrence of bipolar illness is unknown. However, an interaction between central neurotransmitters and hormonal changes has been proposed.⁶ Evidence from clinical studies implicates dysfunction of frontostriatolimbic circuits and related neurotransmitter systems, including dopamine and noradrenaline, in the pathophysiology of bipolar illness.⁷

Data suggest that estrogens modulate dopaminergic and noradrenergic systems.⁸ Estrogens can alter the sensitivity of presynaptic dopamine autoreceptors in the substantia nigra and can increase the number of postsynaptic dopaminergic binding sites in the striatum.⁹ During pregnancy, increased circulating estrogens might cause dopamine receptor blockade, followed by an increased number of dopamine receptors.¹⁰ Neuroendocrine challenge tests of dopamine receptor function in the postpartum period suggest that the sensitivity of these receptors is increased after childbirth in women with a history of bipolar illness.⁸ Moreover, estrogens can enhance brain noradrenaline availability by inhibiting degradation by monoamine oxidase;⁹ resultant changes may have mood elevating effects and may induce rapid mood-cycling.⁹

Therefore, it has been proposed that acute estrogen withdrawal following the expulsion of the placenta may result in increased dopamine activity in the mesolimbic system by virtue of unmasking the increased number of dopamine receptors.¹⁰ This could trigger affective symptoms and psychosis in predisposed women.^{8,11,12} Similar, but attenuated, neuroendocrine changes may be involved in postabortion episodes.⁴ Because estrogen levels increase as human pregnancy progresses,¹³ it is reasonable to speculate that the degree of

estrogen withdrawal associated with termination of early pregnancy is less profound than that after childbirth of a full-term or near-term pregnancy. This may account for the lower incidence of postabortion recurrence of bipolar disorder compared with postpartum episodes.⁴

Psychosocial factors, which were significant in both cases above, may also contribute to puerperal recurrence of bipolar illness. A number of clinical studies have reported associations between psychosocial factors and postpartum depression.¹⁴ These factors include marital conflict, poor social support, financial, and housing difficulties.¹⁴ In contrast, psychosocial factors were found to be unrelated to recurrence of psychotic symptoms during the puerperal period.¹⁴

A Danish study screened all women younger than 50 years who were terminating an unwanted pregnancy or carrying to term and who had psychiatric hospitalization within 3 months of delivery or abortion.¹⁵ The rate of admission was considerably higher among women who received abortion (63.8 per 10,000) as compared with those who delivered (16.9 per 10,000). Disturbed or absent partner relationship, lack of social support network, and carrying the intention of abortion were the most common findings among these women.¹⁵ This study did not indicate the psychiatric manifestations for which these women were hospitalized nor was it possible to speculate on the causal relationships between abortion and psychiatric hospitalization.

Psychological responses in the context of spontaneous abortion appear to be different from those following an induced abortion.¹⁶ A prospective study investigated 80 women during the first 3 months after pregnancy termination. The study found significantly higher scores on anxiety scales in women who had undergone induced abortion compared with those who had a spontaneous abortion.¹⁶ Moreover, women may feel guilty and stigmatized about terminating an unwanted pregnancy.¹⁷

CONCLUSIONS

In the first case, one might hypothesize that prior mood disorder, family history of mood disorders, cannabis abuse, and marital difficulties, combined with possible neuroendocrine changes, may have contributed to postabortion recurrence of bipolar illness. The second patient developed a depressive episode after her induced abortions and, interestingly, she experienced manic symptoms following a spontaneous abortion. This suggests that in addition to neuroendocrine mechanisms and psychosocial factors, different types of pregnancy termination might have different sequelae.

In summary, the two cases highlight the occurrence of bipolar psychopathology following spontaneous or induced abortions and underline the limitations of our understanding of bipolar disorder in this context. These two cases and limited related literature illustrate the clinical complexity of the scenarios and the multidimensional perspectives that can be applied. These perspectives may include consideration of vulnerabilities, such as familial, neurobiological differences, psychosocial factors, comorbidities, and the effect of posttermination neuroendocrine changes on neural circuits that are implicated in bipolar

disorders. Clinicians should be aware of the potential for bipolar episodes in association with spontaneous or induced abortion in order to provide appropriate and individualized therapeutic interventions.

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